Number	Reference	Geographical location(s)	Study type: Qualitative, quantitative, or mixed methods	Primary audience(s) or populations of interest	Sample sizes	Primary health areas of interest: Family planning and reproductive health; maternal health; neonatal health; child health; adolescent health; nutrition	Specific health behaviors	Primary predictors or explanatory variables of interest	Specific SBCC intervention component discussed/described (if any)	Major finding (Summarized in 1 sentence only)	Relevant level(s) of the socio-ecological model: individual, couple, household, community, health facility, or societal/structural/policy
MH107	Sharma, S., Van Teijlingen, E., BeliziÌ¼n, J. M., Hundley, V., Simkhada, P., & Sicuri, E. (2016). Measuring what works: An impact evaluation of women's groups on maternal health uptake in rural Nepal. *PLoS ONE* , *11* (5). https://doi.org/10.1371/journal.pone.0155144	Near Kathmandu			1,236	Maternal health	Institutional delivery; Antenatal care; SBA; Postnatal care	education, age and parity	community-based health promotion intervention	Health promotion intervention had a positive effect on the uptake of ANC (attending at least once), iron/folic acid intake and PNC, but not on institutional delivery. No improvement found with SBA.	Community
MH142	Lamichhane, P., Sharma, A., & Mahal, A. (2017). Impact evaluation of free delivery care on maternal health service utilisation and neonatal health in Nepal. *Health Policy and Planning* , *32* (10), 1427–1436. https://doi.org/10.1093/heapol/czx124	national level - Nepal	Secondary anaylsis of data	pregnant women, families, policy makers	4457 live-births reported between 2001 and 2008 from Nepal Demographic and Health Surveys for 2006 and 2011.	Maternal health; neonatal health	Institutional delivery; SBA	Impact of free birth delivery programme on place of delivery, the presence of skilled birth attendants (SBAs) and neonatal mortality	none	Nepal introduced free delivery services for births in public facilities in 2005 in 25 districts with the intervention initially restricted to women with less than two living children and/or women with obstetric complications. After November 2007, eligibility conditions were relaxed to include all women, and the programme was later expanded to cover an additional 50 districts in December 2008. Programme effects on use of public facilities for births and deliveries attended by SBAs were not sustained over a longer exposure period. The results on neonatal mortality persisted with longer programme exposure, although the effects were smaller in magnitude. Programme impacts were estimated for: (1) initial implementation until the relaxation of eligibility criteria to include all women in November 2007 (early phase); and (2) initial implementation until the programme was expanded nationwide in December 2008 (longer phase). Early implementing districts were treatment districts, while late implementing hill districts were control districts. In the early phase, the likelihood of delivery by SBAs was 5.6 percentage points higher (95%CI 0.002, 0.111) and the likelihood of delivery in a public facility was 5.1 percentage points higher (95%CI −0.003, 0.106) in treatment districts compared with control districts. The programme lowered the likelihood of neonatal mortality by 4.0 (−0.072, −0.009) percentage points for women with less than two living children and by 6.9 percentage points	Community Policy
MH167	Pradhan, E., & Fan, V. Y. (2017). The Differential Impact of User-Fee Exemption Compared to Conditional Cash Transfers on Safe Deliveries in Nepal. *Health Services Research* , *52* (4), 1427–1444. https://doi.org/10.1111/1475-6773.12536	National (DHS)	Quantitative	8,785 children born between July 2005 and December 2008, obtained from the nationally representative Demographic and Health Surveys, 2006 and 2011.	8,785 children born between July 2005 and December 2008, obtained from the nationally representative Demographic and Health Surveys, 2006 and 2011.	Maternal health	SBA	copayment exemption compared to a cash incentive on increasing skilled birth attendance (i.e., birth attended by a skilled health worker) in Nepal.; road networks		Skilled birth attendance in districts with both interventions was no higher on average than in districts with only the cash incentive. In areas with adequate road networks, however, significantly higher skilled birth attendance was observed in districts with both interventions compared to those with only the cash incentive. CONCLUSIONS: The added incentive of the user-fee exemption did not significantly increase skilled birth attendance relative to the presence of the cash incentive. User-fee exemptions may not be effective in areas with inadequate road infrastructure.	Community; policy
MH83	Kc, S., Neupane, S., Situ, K. C., & Neupane, S. (2016). Women's Autonomy and Skilled Attendance During Pregnancy and Delivery in Nepal. *MATERNAL AND CHILD HEALTH JOURNAL* , *20* (6), 1222–1229. https://doi.org/10.1007/s10995-016-1923-2		Secondary analysis - 2011 Nepal DHS data	Pregnant women and skilled attendants	4148	Maternal health	SBA	Women's autonomy was assessed on the basis of four indicators of decision making: healthcare, visiting friends or relatives, household purchases and spending earned money. association between women's autonomy and skilled attendance during preenancy and deliverv	none discussed but recommendation could be to look at improving women's autonomy	Women's autonomy was significantly associated with the maternal health care utilization by skilled attendants. This study will provide insights for policy makers to develop strategies in improving maternal health.	Household
MH46	Choulagai, B. P., Onta, S., Subedi, N., Bhatta, D. N., Shrestha, B., Petzold, M., & Krettek, A. (2017). A cluster-randomized evaluation of an intervention to increase skilled birth attendant utilization in mid- and far-western Nepal. *Health Policy and Planning* , *32* (8), 1092–1101. https://doi.org/10.1093/heapol/czx045	Bajhang, Dailekh and Kanchanpur	Quantitative	Women delivering a baby in past 12 months	746 and 2098 eligible women in the intervention and control groups, respectively	Maternal health	SBA; ANC	Intervention ; intervention and control communities	five-component intervention that addressed previously identified barriers to SBA services in mid- and far-western Nepal (not sure if SBCC or not) - worked with existing community groups and funds Family support; Financial assistance; Transport; Women-friendly environment at health facilities; SBA security	The 1-year intervention was effective in increasing the use of skilled birth care services (OR = 1.57; CI 1.19-2.08); however, the intervention had no effect on the utilization of ANC services. Calls for improved quality of care, longer interventions, mobilizing community groups more, having more human resources for the intervention	Household; Community; health system

MH164	Paudel, D., Shrestha, I. B., Siebeck, M., & Rehfuess, E. (2017). Impact of the community-based newborn care package in Nepal: A quasi-experimental evaluation. *BMJ Open* , *7* (10). https://doi.org/10.1136/bmjopen-2016-015285	10 pilot districts - had pilot districts and comparison districts	Quantitative	Recent births	Varied between pre/post and between HMIS and DHS data	Maternal health; neonatal health	SBA; birth preparedness, antenatal care seeking, antenatal care quality, delivery by skilled birth attendant, immediate newborn care and postnatal care within 48 hours	Impact of program	community-based newborn care package (CBNCP)	Changes over time in intervention and comparison areas were similar in difference-in-differences analysis of DHS and HMIS data. Logistic regression of DHS data also did not reveal any significant improvement in combined outcomes: birth preparedness, adjusted OR (aOR)=0.8 (95% CI 0.4 to 1.7); antenatal care seeking, aOR=1.0 (0.6 to 1.5); antenatal care quality, aOR=1.4 (0.9 to 2.1); delivery by skilled birth attendant, aOR=1.5 (1.0 to 2.3); immediate newborn care, aOR=1.1 (0.7 to 1.9); postnatal care, aOR=1.3 (0.9 to 1.9). Health providers' knowledge and skills in intervention districts were fair but showed much variation between different providers and districts. CONCLUSIONS This study, while representing an early assessment of impact, did not identify significant improvements in newborn care practices and raises concerns regarding CBNCP implementation. It has contributed to revisions of the package and it being merged with the Integrated Management of Neonatal and Childhood Illness programme. This is now being implemented in 35 districts and carefully monitored for quality and impact. The study also highlights general challenges in evaluating the impacts of a complex health intervention under 'real life' conditions.	Community
MH62	Furuta, M., Bick, D., Matsufuji, H., & Coxon, K. (2016). Spousal violence and receipt of skilled maternity care during and after pregnancy in Nepal. *Midwifery* , *43* , 7–13. https://doi.org/10.1016/j.midw.2016.10.005	Nepal	Quantitative	Women giving birth within past 5 years and completing GBV module	1375 (weighted)	Maternal health	SBA: Recipt of skilled maternity care across pregnancy/early postnatal OR any skilled care in pregnancy, childbirth, or postpartum	Spousal violence; socio-dem; healthcare accessibility		Violence associated after controlling for HC access, but not once controlling for socio-dem factors. Better-educated women, women whose husbands were professionals or skilled workers and women from well-off households were more likely to receive skilled maternity care either across the pregnancy continuum or at recommended points during or after pregnancy. parity also associated	Individual; couple; household
MH37	Andersen, K. L., Khanal, R. C., Teixeira, A., Neupane, S., Sharma, S., Acre, V. N., & Gallo, M. F. (2015). Marital status and abortion among young women in Rupandehi, Nepal. *BMC Women's Health* , *15* , 17. https://doi.org/10.1186/s12905-015-0175-4	Rupandehi, Nepal	Quant	NGO, government	600	Maternal health	Abortion	marital status		"Findings highlight the need for providing sexual and reproductive health care information and services to young women regardless of marital status"	societal/structural/political
MH113	Tran, D. N., & Bero, L. A. (2015). Barriers and facilitators to the quality use of essential medicines for maternal health in low-resource countries: An Ishikawa framework. *Journal of Global Health* , *5* (1), 10406. https://doi.org/10.7189/jogh.05.010406	Mongolia, Nepal, Laos, DPRK, the Philippines, Vanuatu, the Solomon Island	Quantitative	MWRAs	7 reports	Maternal health	access to and use of essential medicines			The diagram highlighted the complexity between and within each health–system level that must function to ensure the availability, access, and appropriate use of medicines. The specific facilitators and barriers identified should guide the development of tailored intervention programs to improve and expand the use of these life–saving medicines.	Policy/structure individuals, health facilities
MH92	Liu, M., Nagarajan, N., Ranjit, A., Gupta, S., Shrestha, S., Kushner, A. L., … Groen, R. S. (2016). Reproductive health care and family planning among women in Nepal. *International Journal of Gynaecology and Obstetrics: The Official Organ of the International Federation of Gynaecology and Obstetrics* , *134* (1), 58–61. https://doi.org/10.1016/j.ijgo.2015.11.020	Nepal	Quantitative. two-part population-based, cross-sectional, cluster-randomized survey corroborated by a visual physical examination	Women or reproductive age, pregnant women	876 female interviewees were of reproductive age (12-50years).	Maternal health	access to care, contraceptive needs, access to surgical care, menstruation-related healthcare needs, and barriers to receiving reproductive health care	Maternal education was the strongest predictor of delivering exclusively in a healthcare facility. Odds of having a cesarean delivery were doubled by urban living. Predictor of using contraception was a history of having given birth	none	Reproductive healthcare disparities for women are manifold. Education for women appears to be a significant determinant of accessing reproductive health care.	
MH50	Deo, K. K., Paudel, Y. R., Khatri, R. B., Bhaskar, R. K., Paudel, R., Mehata, S., & Wagle, R. R. (2015). Barriers to Utilization of Antenatal Care Services in Eastern Nepal. *Frontiers in Public Health* , *3* , 197. https://doi.org/10.3389/fpubh.2015.00197	Eastern Nepal - Sunsari	Quant	Women delivering in last year	372 women	Maternal health	ANC	media, ethnicity, women's autonomy; wealth; knowledge	N/a	The study revealed that women exposed to media had higher chance of receiving four or more ANC visits with an adjusted odds ratio (aOR = 3.5, 95% CI: 1.2-10.1) in comparison to women who did not. Women from an advantaged ethnic group had more chance of having 4ANC visits than respondents from a disadvantaged ethnic group (aOR = 2.4, 95% CI: 2.1-6.9). Similarly, women having a higher level of autonomy were nearly three times more likely (aOR = 2.9, 95% CI: 1.5-5.6) and richer women were twice (aOR = 2.3, 95% CI: 1.1-5.3) as likely to have at least 4ANC visits compared to women who had a lower level of autonomy and were economically poor. CONCLUSION: Being from disadvantaged ethnicity, lower women's autonomy, poor knowledge of maternal health service and incentive upon completion of ANC, less media exposure related to maternal health service, and lower wealth rank were significantly associated with fewer than the recommended 4ANC visits. Thus, maternal health programs need to address such socio-cultural barriers for effective health care utilization.	Individual; household
MH4	Joshi et al.: Factors associated with the use and quality of antenatal care in Nepal: a population-based study using the demographic and health survey data. BMC Pregnancy and Childbirth 2014 14:94.	Nepal	Quantitative	WRAs	4079	Maternal Health	ANC	Older age, higher parity, and higher levels of education and household economic status		Half the women had four or more ANC visits and 85% had at least one visit. Health education, iron supplementation, blood pressure measurement and tetanus toxoid were the more commonly received components of ANC	Couple/household

MH95	Maleku, A., & Pillai, V. K. (2016). Antenatal Care in Nepal: A Socioecological Perspective. *Health Care for Women International* , *37* (4), 496–515. https://doi.org/10.1080/07399332.2014.974807	Nepal	Secondary analysis of DHS data	pregnant women	DHS national level household surveys (2011)	Maternal health	ANC	uptake of ANC (# of ANC visits), SES, geography	N/A	SES, geography and sociocultural factors have a direct impact on whether pregnant access ANC services	All
MH96	Malqvist, M., Pun, A., Raaijmakers, H., Kc, A., Målqvist, M., Pun, A., … Ashish, K. (2017). Persistent inequity in maternal health care utilization in Nepal despite impressive overall gains. *Global Health Action* , *10* (1), 1356083. https://doi.org/10.1080/16549716.2017.1356083	Nepal	Secondary analysis of DHS (2001, 2006, 2011) and MICS5 (2014) data	pregnant women		Maternal health	ANC	SES	N/A	ANC attendance increased from 49% in 2011 to 88% in 2014 and the rate of facility delivery increased from 7% to 44%. However, SES still influences gap as lower SES women 6 times more likely to deliver without skilled attendance.	All
MH128	Upadhyay, P., Liabsuetrakul, T., Shrestha, A. B., & Pradhan, N. (2014). Influence of family members on utilization of maternal health care services among teen and adult pregnant women in Kathmandu, Nepal: a cross sectional study. *Reproductive Health* , *11* (1), 92. https://doi.org/10.1186/1742-4755-11-92				315	Maternal health; child health	ANC	Age cohort		Both women and their husbands influenced the decision to utilize ANC and delivery care but husbands were more influential, especially in teens and young adults. Thus, husband's involvement is crucial as a strategy to improve maternal health care utilization in Nepa	Individual/family
MH162	Pandey, S., & Karki, S. (2014). Socio-economic and Demographic Determinants of Antenatal Care Services Utilization in Central Nepal. *International Journal of MCH and AIDS* , *2* (2), 212–219.	Makwanpur	Quantitative	married women aged between 15-49 years, who had delivered their babies within one year	216	Maternal health	ANC	Age, education, income, family type; knowledge		More than half of the women were not aware of the consequences of lack of antenatal care. Age, education, income, type of family (caste, religion), type of work (service vs. agricultural work); parity; were strongly associated with the attendance at antenatal care service.	Individual; household
MH103	Saad-Haddad, G., DeJong, J., Terreri, N., Restrepo-Mendez, M. C., Perin, J., Vaz, L., … Bryce, J. (2016). Patterns and determinants of antenatal care utilization: analysis of national survey data in seven countdown countries. Journal of Global Health, 6(1), 10404. https://doi.org/10.7189/jogh.06.010404	Bangladesh, Cambodia, Cameroon, Nepal, Peru, Senegal and Uganda	Quantitative	MWRAs	Not Clear (DHS data used)	Maternal health	ANC visits	Age, education, employment status, religion		Inequality in ANC utilization patterns among women of different wealth statuses, educational backgrounds and places of residence need to be considered at the policy– making level across most of the countries we studied.	Family/policy
MH114	Tripathi, V., & Singh, R. (2015). Ecological and socio-demographic differences in maternal care services in Nepal. *PeerJ* , *2015* (9). https://doi.org/10.7717/peerj.1215	National	Quantitative	MWRAs (given birth within last 3 years)	7069	Maternal health	ANC, Safe delivery	Exposure to public messaging	Socio-economic status	socio-economic and demographic factors associated with ANC and safe delivery services across the three ecological zones in Nepal	Household; community

	Seward, N., Neuman, M., Colbourn, T., Osrin, D., Lewycka, S., Azad, K., … Prost, A. (2017). Effects of women's groups practising participatory learning and action on preventive and care-seeking behaviours to reduce neonatal mortality: A meta-analysis of cluster-randomised trials. PLoS Medicine, 14(12), e1002467. https://doi.org/10.1371/journal.pmed.1002467											
MH150	Khanal, V., Adhikari, M., & Karkee, R. (2014). Low compliance with iron-folate supplementation among postpartum mothers of Nepal: an analysis of Nepal Demographic and Health Survey 2011. *Journal of Community Health* , *39* (3), 606–613. https://doi.org/10.1007/s10900-013-9806-6	India, Bangladesh, Nepal, Malawi National	Qualitative Secondary analysis of Nepal DHS 2011	Woman's group postpartum mothers and their families	Ranging between 6,125 and 29,901 live births 4,148	Neonatal health; maternal health Maternal health	ANC; home care behaviors Anemia prevention in the postnatal period	SD factors; ANC; facility delivery; receipt of postnatal care		Women's groups practising PLA improve key behaviours on the pathway to neonatal mortality, with the strongest evidence for home care behaviours and practices during home deliveries. Mothers who had higher and secondary education [adjusted Odd ratio (aOR) 3.101; 95% CI (2.268-4.240)]; had attended four or more antenatal care visits [aOR 9.406; 95% CI (5.552-15.938)]; lived in Far-western development region [aOR 1.822; 95% CI (1.387-2.395)]; delivered in health facility [aOR 1.335; 95% CI (1.057-1.687)]; and attended postnatal care [aOR 2.348; 95% CI (1.859-2.965)] were more likely to take iron for 45 days of postpartum.	Individual; household Individual; community
MH84												
	Acharya, D., Khanal, V., Singh, J. K., Adhikari, M., & Gautam, S. (2015). Impact of mass media on the utilization of antenatal care services among women of rural community in Nepal. *BMC Research Notes* , *8* , 345. https://doi.org/10.1186/s13104-015-1312-8											
MH28		Dhanusha District Nepal	Quant	rural women of children under 1	205	Maternal Health	Antenatal Care	exposure to mass media campaign		Mass communication exposure was correlated with positive pre-natal behaviors	individual, societal
	Acharya, P., Adhikari, T. B., Neupane, D., Thapa, K., & Bhandari, P. M. (2017). Correlates of institutional deliveries among teenage and non-teenage mothers in Nepal. *PLoS ONE* , *12* (10). https://doi.org/10.1371/journal.pone.0185667											
MH30		Nepal nationwide	Quant	teenage mothers Mothers, who had delivered their child	5391	Maternal health	Antenatal Care	socio-ecoonic status, teenage pregnancy, institutionalize delivery		Teenage mothers more likely to have institutionalized birth than non-teenage mothers. Socioeconomic factors had significant role in teenage mothers who were institutionalized during birth and those who weren't.	individual, household
	Sharma, S. R., Poudyal, A. K., Devkota, B. M., & Singh, S. (2014). Factors associated with place of delivery in rural Nepal. *BMC Public Health* , *14* (1). https://doi.org/10.1186/1471-2458-14-306											
MH108		Kavrepalanchowk(Meche, Chatrebanjh,Patlekhet VDC)	Quantitative	between 15 July 2010 and 14 July 2011	240	Maternal health	antenatal care visits during last pregnancy		NA	Antenatal care service utilization of four or more times was significantly associated with the practice of institutional delivery	Policy/structure
	Sharma, D., Pokharel, H. P., Budhathoki, S. S., Yadav, B. K., & Pokharel, R. K. (2016). Antenatal Health Care Service Utilization in Slum Areas of Pokhara Sub-Metropolitan City, Nepal. *Journal of Nepal Health Research Council* , *14* (32), 39–46.						Antenatal Health Care Service Utilization				
MH106		Pokhara	Quantitative	MWRAs	400	Maternal health		Planned pregnancy & Age	NA	Planned pregnancy and age group 20-34 had more ANC	Individual

MH112	Soubeiga, D., Gauvin, L., Hatem, M. A., & Johri, M. (2014). Birth Preparedness and Complication Readiness (BPCR) interventions to reduce maternal and neonatal mortality in developing countries: systematic review and meta-analysis. *BMC PREGNANCY AND CHILDBIRTH* , *14* . https://doi.org/10.1186/1471-2393-14-129	NA	Quantitative	pregnant women received BPCR interventions in developing countries	14 randomized studies (292 256 live births)	Maternal health	antenatal, intrapartum, postpartum care and neonatal care	birth preparedness and complication readiness behaviours.	Home Visits, women Group sessions	exposure to BPCR interventions was associated with a statistically significant reduction of 18% in neonatal mortality risk (twelve studies, RR = 0.82; 95% CI: 0.74, 0.91) and a non-significant reduction of 28% in maternal mortality risk (seven studies, RR = 0.72; 95% CI: 0.46, 1.13)	Structural/policy
MH78	K C, A., Nelin, V., Wrammert, J., Ewald, U., Vitrakoti, R., Baral, G. N., … Malqvist, M. (2015). Risk factors for antepartum stillbirth: a case-control study in Nepal. *BMC PREGNANCY AND CHILDBIRTH* , *15* , 146. https://doi.org/10.1186/s12884-015-0567-3	Kathmandu	Quantitative	Births	307 antepartum stillbirths.	Maternal health	Antepartum stillbirth	SD, previous stillbirth, ANC visits, poverty, maternal health		An association was found between the following risk factors and antepartum stillbirth: increasing maternal age (aOR 1.0, 95 % CI 1.0-1.1), less than five years of maternal education (aOR 2.4, 95 % CI 1.7-3.2), increasing parity (aOR 1.2, 95 % CI 1.0-1.3), previous stillbirth (aOR 2.6, 95 % CI 1.6-4.4), no antenatal care attendance (aOR 4.2, 95 % CI 3.2-5.4), belonging to the poorest family (aOR 1.3, 95 % CI 1.0-1.8), antepartum hemorrhage (aOR 3.7, 95 % CI 2.4-5.7), maternal hypertensive disorder during pregnancy (aOR 2.1, 95 % CI 1.5-3.1), and small weight-for-gestational age babies (aOR 1.5, 95 % CI 1.2-2.0).	Individual; household; health facility
MH130	Bhandari, T. R., Dangal, G., Sarma, P. S., & Kutty, V. (2014). Construction and Validation of a Women's Autonomy Measurement Scale with Reference to Utilization of Maternal Health Care Services in Nepal. *Journal of the Nepal Medical Association* , *52* (195).		Quant; scale development	NGO, government	250	Family planning; reproductive health; maternal health	autonomy			The new 23 item scale is a reliable tool for assessing women's autonomy in developing countries	individual, couple, household, community
MH131	Bhandari, T. R., Kutty, V. R., Sarma, P. S., & Dangal, G. (2017). Safe delivery care practices in western Nepal: Does women's autonomy influence the utilization of skilled care at birth? *PloS One* , *12* (8), e0182485. https://doi.org/10.1371/journal.pone.0182485	Nepal - Kapilvastu district	Quant	NGO, government	250	Family planning; reproductive health; maternal health	autonomy	giving birth at attended health facility		Stratified analysis showed that when the husband is educated, women's education seems to work partly through their autonomy in decision making.	individual, couple, household, community
MH8	Pawan Acharya and Vishnu Khanal, The effect of mother's educational status on early initiation of breastfeeding: further analysis of three consecutive Nepal Demographic and Health Surve	nepal	Quantitative	WRAs	12,845	Maternal Health	Breastfeeding	mother's education		Mothers with higher education were more likely to initiate breastfeeding with the first hour of childbirth	Individual/family
MH115	Sharma, I. K., & Byrne, A. (2016). Early initiation of breastfeeding: a systematic literature review of factors and barriers in South Asia. *International Breastfeeding Journal* , *11* , 17. https://doi.org/10.1186/s13006-016-0076-7	Bangladesh, India, Maldives, Nepal, Pakistan, Sri Lanka	Quantitative	MWRAs	1723 studies.	Maternal health	Breastfeeding	education of mother, occupation of mother, household wealth and family size and family type.	NA	Factors at geographical, socioeconomic, individual, and health-specific levels, such as residence, education, occupation, income, mother's age and newborn's gender, and ill health of mother and newborn at delivery, affect early or timely breastfeeding initiation in South Asia	Individual, family & Societal

MH129	Zehner, E. (2016, April). Promotion and consumption of breastmilk substitutes and infant foods in Cambodia, Nepal, Senegal and Tanzania. *Maternal & Child Nutrition* . England. https://doi.org/10.1111/mcn.12308	Cambodia, Nepal, Senegal, Tanzania	Mixed	Breast infants (Mother-infant pairs)		Maternal health; child health	Breastfeeding	breastmilk substitute		The study found that commercially produced complementary foods were promoted in half of the sampled stores in Dakar, but less than 10% of stores in Phnom Penh, Kathmandu Valley and Dar es Salaam. Point-of-sale promotions across all sites varied in content and form	Individual/family
MH157	Neuman, M., Alcock, G., Azad, K., Kuddus, A., Osrin, D., More, N. S., … Prost, A. (2014). Prevalence and determinants of caesarean section in private and public health facilities in underserved South Asian communities: cross-sectional analysis of data from Bangladesh, India and Nepal. *BMJ Open* , *4* (12), e005982.	Dhanusha and other countries (india, Bangladesh)	Quantitative	Cesarean births	45,327 births across study areas	Maternal health	Cesarean section	Location of birth/type of faility; socio-dem factors		Institutional delivery rates varied widely between settings, from 21% in rural India to 90% in urban India. The proportion of private and charitable facility births delivered by caesarean section was 73% in Bangladesh, 30% in rural Nepal, 18% in urban India and 5% in rural India. The odds of caesarean section were greater in private and charitable health facilities than in public facilities in three of four study locations, even when adjusted for pregnancy and delivery characteristics, maternal characteristics and year of delivery (Bangladesh: adjusted OR (AOR) 5.91, 95% CI 5.15 to 6.78; Nepal: AOR 2.37, 95% CI 1.62 to 3.44; urban India: AOR 1.22, 95% CI 1.09 to 1.38). We found that highly educated women were particularly likely to deliver by caesarean in private facilities in urban India (AOR 2.10; 95% CI 1.61 to 2.75) and also in rural Bangladesh (AOR 11.09, 95% CI 6.28 to 19.57). CONCLUSIONS Our results lend support to the hypothesis that increased caesarean section rates in these South Asian countries may be driven in part by the private sector. They also suggest that preferences for caesarean delivery may be higher among highly educated women, and that individual-level and provider-level factors interact in driving caesarean rates higher. Rates of caesarean section in the private sector, and their maternal and neonatal health outcomes, require close monitoring.	Individual; household; facility
MH23	Bogren, M. U., Berg, M., Edgren, L., van Teijlingen, E., & Wigert, H. (2016). Shaping the midwifery profession in Nepal - Uncovering actors' connections using a Complex Adaptive Systems framework. *Sexual & Reproductive Healthcare : Official Journal of the Swedish Association of Midwives* , *10* , 48–55. https://doi.org/10.1016/j.srhc.2016.09.008	Nepal	Qual	NGO, government	17	Family planning; reproductive health; maternal health; neonatal health	connections between actors establishing midwifery school			Actors promoting the profession connect through a set of facilitators and barriers, common goals and collaboration are critical for building a midwifery profession, and political priorities challenge the professional establishment	community, health facility, societal/structural/political
MH17	Berin, E., Sundell, M., Karki, C., Brynhildsen, J., & Hammar, M. (2014). Contraceptive knowledge and attitudes among women seeking induced abortion in Kathmandu, Nepal. *Int J Womens Health* , *6* , 335–341. https://doi.org/10.2147/ijwh.s57370	Kathmandu, nepal	Quant	NGO, government	153	Family planning; maternal health	contraception knowledge and attitude	Education and maternal history		Women seeking abortion in Kathmandu had shorter education and a history of more pregnancies and deliveries than women in the control group.	couple, household, health facility
MH20	Majumder, N., & Ram, F. (2015). Explaining the role of proximate determinants on fertility decline among poor and non-poor in Asian countries. *PLoS ONE* , *10* (2). https://doi.org/10.1371/journal.pone.0115441	Bangladesh, India, Nepal, Phillipines, Indonesia, and Vietnam	Secondary analysis of DHS data	women of maternal age, household	DHS national level household surveys	Family planning; reproductive health; maternal health	contraceptive use and induced abortion	total fertility rate	N/A	The majority of countries experience fertility decline over the period of the study despite diversity in economic development.	All
MH15	Axinn, W. G., Ghimire, D. J., & Smith-Greenaway, E. (2017). Emotional Variation and Fertility Behavior. *Demography* , *54* (2), 437–458. https://doi.org/10.1007/s13524-017-0555-5			NGO, government	5271	Family planning; maternal health	cotraception usage	husband-wife emotional bond		the variance in levels ofhusband-wife emotional bond is significantly associated with their subsequent use of contraception to avert births	couple, societal/structural/political

MH24	Bogren, M., & Erlandsson, K. (2018). Opportunities, challenges and strategies when building a midwifery profession. Findings from a qualitative study in Bangladesh and Nepal. *Sexual & Reproductive Healthcare : Official Journal of the Swedish Association of Midwives* , *16* , 45–49. https://doi.org/10.1016/j.srhc.2018.02.003		Qual	NGO, government	33	Family planning; reproductive health; maternal health; neonatal health	Creating health facilities		This study demonstrated that building a midwifery profession requires a political comprehensive collaborative approach supported by a political commitment. Through	health facility, societal/structural/policy
MH109	Sharma, S., van Teijlingen, E., Hundley, V., Angell, C., & Simkhada, P. (2016). Dirty and 40 days in the wilderness: Eliciting childbirth and postnatal cultural practices and beliefs in Nepal. *BMC Pregnancy and Childbirth* , *16* (1), 147. https://doi.org/10.1186/s12884-016-0938-4	Rural Nepal (anonymized)	Qualitative	Wome, men, health providers	five in-depth face-to-face interviews and 14 focus group discussions with mainly women, but also men and health service providers	Maternal health	Cultural beliefs around pregnancy and childbirth	Cultural beliefs	There were beliefs around (a) cord cutting & placenta rituals; (b) rest & seclusion; (c) purification, naming & weaning ceremonies and (d) nutrition and breastfeeding. - thee offered opportunities and barriers for health providers	Societal, environmental, policy
MH144	Brunson, J. (2017). Maternal, Newborn, and Child Health After the 2015 Nepal Earthquakes: An Investigation of the Long-term Gendered Impacts of Disasters. *Maternal and Child Health Journal* , *21* (12), 2267–2273. https://doi.org/10.1007/s10995-017-2350-8	Nepal	Qual	NGO, government	14	Maternal health; neonatal health; child health	dietary habits and medical center visits	earthquake victim	Though families were not channeling household funds away from health care expenses for pregnant and lactating women and children under five, the findings suggest that a delayed response by the Nepali government in administering funds for rebuild- ing combined with an ongoing fuel crisis were negatively impacting families' abilities to provide adequate shelter, warmth, cooking gas, and transportation for mothers and young children.	individual, household, health facility, societal/structural/political
MH19	Puri, M., Henderson, J. T., Harper, C. C., Blum, M., Joshi, D., & Rocca, C. H. (2015). Contraceptive discontinuation and pregnancy postabortion in Nepal: a longitudinal cohort study. Contraception, 91(4), 301–307. https://doi.org/10.1016/j.contraception.2014.12.011	Nepal	Quantitative	Women receiving MA services	654	Family Planning; maternal health	discontinuation of contraception	Wealth Index, full range of contraception knowledge	Increased availability of long-acting methods in Nepal and similar settings may help to prevent unwanted pregnancy and attendant maternal mortality and morbidities.	Policy/structure
MH47	Clarke, K., Saville, N., Bhandari, B., Giri, K., Ghising, M., Jha, M., … Prost, A. (2014). Understanding psychological distress among mothers in rural Nepal: a qualitative grounded theory exploration. *BMC Psychiatry* , *14* , 60. https://doi.org/10.1186/1471-244x-14-60	Dhanusha	Qual	Mothers management of stress (among mothers identified as distressed according to the GHQ-12)	22 SSIs ; one with a local healther, 12 FGDs	Maternal health	Distress and care-seeking for physical health associated with distress/tension	Socio-cultural factors; lack of sons; gender norms; family dynamcs N/A	Key perceived causes of distress were poor health, lack of sons, and fertility problems. Tension developed in a context of limited autonomy for women and perceived duty towards the family. Distressed mothers discussed several strategies to alleviate tension, including seeking treatment for perceived physical health problems and tension from doctors or dhamis, having repeated pregnancies until a son was delivered, manipulating social circumstances in the household, and deciding to accept their fate. Their ability to implement these strategies depended on whether they were able to negotiate with their in-laws or husbands for resources. ; sees vulnerability as manifesting itself as tension	HH; community
MH134	Benova, L., Tuncalp, O., Moran, A. C., & Campbell, O. M. R. (2018). Not just a number: examining coverage and content of antenatal care in low-income and middle-income countries. *BMJ Global Health* , *3* (2), e000779. https://doi.org/10.1136/bmjgh-2018-000779	10 Low or Middle Income Countries	Quant	NGO, government	between 2857 (Nepal) to 16 721 (Nigeria)	Maternal health; neonatal health	doctor visits	location	Our findings suggest that even among women with patterns of care that complied with global recommendations, the content of care was poor.	health facility
MH31	Acharya, P., & Khanal, V. (2015). The effect of mother's educational status on early initiation of breastfeeding: further analysis of three consecutive Nepal Demographic and Health Surveys. *BMC Public Health* , *15* , 1069. https://doi.org/10.1186/s12889-015-2405-y	Nepal - nationwide	Quant	Nepali mothers	12845	Maternal Health	early breastfeeding	mother's education	Maternal education was associated with a higher likelihood of early initiation of breastfeeding in each survey. Pooled	individual, health facility

MH125	Marphatia, A. A., Ambale, G. S., & Reid, A. M. (2017). Women's Marriage Age Matters for Public Health: A Review of the Broader Health and Social Implications in South Asia. *Frontiers in Public Health* , *5* , 269. https://doi.org/10.3389/fpubh.2017.00269	Bangladesh, India, Nepal, and Pakistan	Literature review of peer-reviewed and grey literature	young girls and women susceptible to early marriage	N/A	Maternal health; child health	early child bearing	fertility, access to health care, child nutrition, socio-cultural factors, etc.	N/A	Association of early marriage, education and SES found to influence public health outcomes.	All
MH148	Bhandari, S., Sayami, J. T., Thapa, P., Sayami, M., Kandel, B. P., & Banjara, M. R. (2016). Dietary intake patterns and nutritional status of women of reproductive age in Nepal: findings from a health survey. *Archives of Public Health = Archives Belges de Sante Publique* , *74* , 2. https://doi.org/10.1186/s13690-016-0114-3	Mountain, Hill and Terai regions of Nepa	Quant	NGO, government	21,111	Maternal health; nutrition	eating habits and nutritional status	age, employment status, location		The nutritional status of women of reproductive age is still poor especially in Terai and the dietary intake pattern is not adequate. It	household, community
MH101	Rishal, P., Joshi, S. K., Lukasse, M., Schei, B., & Swahnberg, K. (2016). "They just walk away" - women's perception of being silenced by antenatal workers: a qualitative study on women survivors of domestic violence in Nepal. Global Health Action, 9, 31838.	Dhulikhel and Kathmandu	Qualitative	Experience of violence during pregnancy and who utilized ANC	12 IDIs	Maternal health	experience of domestic violence	GBV		Experiences concealed due to fear of insults, discrimination, attitudes from providers; The women wished that the health care providers were compassionate and asked them about their experience, ensured confidentiality and privacy, and referred them to services that is free of cost.	Couple; health facility
MH102	Rishal, P., Pun, K. D., Darj, E., Joshi, S. K., Bjorngaard, J. H., Swahnberg, K., … Lukasse, M. (2017). Prevalence and associated factors of domestic violence among pregnant women attending routine antenatal care in Nepal. Scandinavian Journal of Public Health, 1403494817723195. https://doi.org/10.1177/1403494817723195	Dhulikhel and Kathmandu	Quantitative	Pregnant women 12-28 weeks of gestation attening ANC	2004	Maternal health	experience of domestic violence	Socio-demographic factors; women's empowerment		more than 1/5 had experienced violence; less than 2% reported physical violence DURING pregnancy. Women of young age and low socio-economic status were more likely to have experienced DV. Women who reported having their own income and the autonomy to use it were at significantly lower risk of DV compared to women with no income. ; often experience of violencenot disclosed	Couple
MH67	Gurung, S., & Acharya, J. (2016). Gender-based Violence Among Pregnant Women of Syangja District, Nepal. *Osong Public Health and Research Perspectives* , *7* (2), 101–107. https://doi.org/10.1016/j.phrp.2015.11.010	Syangja	Quantitative	Pregnant women attending antenatal care	202	Maternal health	experience of GBV	Descriptive		91% reported GBV Most of the respondents (87%) faced economic violence followed by psychological (53.8%), sexual (41.8%), and physical (4.3%) violence. Women experienced: (1) psychological violence with most complaining of angry looks followed by jealousy or anger while talking with other men, insults using abusive language and neglect; (2) economic violence with most complaining of financial hardship, denial of basic needs and an insistence on knowing where respondents were and restricting them to parents' home or friends/relatives' houses (jealousy); (3) physical violence by slapping, pushing, shaking, or throwing something at her, twisting arm or pulling hair, and punching and kicking; and (4) sexual violence by physically forcing her to have sexual intercourse without consent, and hurting or causing injury to private parts. Most (100%) of the perpetrators were found to be husbands and mothers-in-law (10.7%) who violated them rarely.	Individual; household
MH85	Khanal, V., Adhikari, M., Karkee, R., & Gavidia, T. (2014). Factors associated with the utilisation of postnatal care services among the mothers of Nepal: analysis of Nepal demographic and health survey 2011. *BMC Women's Health* , *14* , 19. https://doi.org/10.1186/1472-6874-14-19	National	Secondary analysis - 2011 Nepal DHS data	Policy makers, Mothers	4079 mothers	Maternal health Maternal health	Factors assocated with accessing postnatal care	Urban or Rural households, mother's education and occupation, partner's education and occupation, antenatal care visits, delivery at facility or home	None described but recommendation provided: Increasing utilisation of the recommended four or more antenatal visits, delivery at health facility and increasing awareness and access to services through community-based programs especially for the rural, poor, and less educated mothers may increase postnatal care attendance in Nepal.	The majority of postnatal mothers in Nepal did not seek postnatal care. Mothers who were from urban areas, from rich families, who were educated, whose partners were educated, who delivered in a health facility, who had attended a four or more antenatal visits, and whose delivery was attended by a skilled attendant were more likely to report attending immediate postnatal care and at least one postnatal care visit. On the other hand, mothers who reported agricultural occupation, and whose partners performed agricultural occupation were less likely to have attended immediate postnatal care or at least one postnatal care visit.	Individual, couple, facility
MH1	nepal.unfpa.org	National	Quantitative	WRAs	different (mics, ndhs)	Maternal Health	FP, Maternal health	use of LARC, midwifery education		Delaying pregnancy is an important means of lowering maternal mortality: young girls' bodies are not ready to give birth.	Policy/structure
MH25	Byrne, A., Hodge, A., Jimenez-Soto, E., & Morgan, A. (2014). What Works? Strategies to Increase Reproductive, Maternal and Child Health in Difficult to Access Mountainous Locations: A Systematic Literature Review. *PLoS One* , *9* (2). https://doi.org/10.1371/journal.pone.0087683	Afghanistan, Bolivia, Ethiopia, Guatemala, Indonesia, Kenya, Kyrgyzstan, Nepal, Pakistan, Papua New Guinea and Tajikistan	Systematic Review	NGO, government	4130 articles	Family planning; reproductive health; maternal health; neonatal health	health care access			Task shifting, strengthened roles of CHWs and volunteers, mobile teams, and inclusive structured planning forums have proved effective.	health facility, societal/structural/policy

MH52	Devkota, H. R., Murray, E., Kett, M., & Groce, N. (2017). Healthcare provider's attitude towards disability and experience of women with disabilities in the use of maternal healthcare service in rural Nepal. *Reproductive Health* , *14* (1), 79. https://doi.org/10.1186/s12978-017-0330-5	Rupandehi district	Mixed methods	Healthcare providers providing maternal healthcare services Women with disabilities using maternal healthcare services at last pregnancy	396 healthcare providers 18 IDIs with women with disabilities using maternal healthcare services during last pregnancy	Maternal health	Health providers' attitudes towards disabilities in Nepal and women with disabilities' experiences seeking maternal healthcare	Type of provider (Nurses/auxiliary nurse midwives; general clinical health workers; Female Community Health Volunteers); Age; Urban/rural; Dalit vs. non-dalit; Previously providing services for women with disabilities vs. not; Receipt of disability training	Attitudes towards disability associated with provider type; age; rural/urban; and Dalit status. No variation by having previously provided services to women with disabilities or receipt of disability training. Women with disabilities had negative perceptions of providers' knowledge, attitudes, skills in providing services to those with disabiltiies	Health facility
MH33	Adhikari, R., Smith, P., Sharma, J. R., & Chand, O. B. (2018). New forms of development: branding innovative ideas and bidding for foreign aid in the maternal and child health service in Nepal. *Globalization and Health* , *14* (1), 33. https://doi.org/10.1186/s12992-018-0350-0	Nepal	Qual	NGO's		Maternal health	how NGO's obtain funding and the use of branding in that process		foreign aid for the provision of MCH services in Nepal is channeled increasingly to its beneficiaries, not through the Government system, but rather via various intermediary organisations, employing branding and bidding processes.	societal/structural/political
MH158	Neupane, S., & Nwaru, B. I. (2014). Impact of prenatal care utilization on infant care practices in Nepal: a national representative cross-sectional survey. *European Journal of Pediatrics* , *173* (1), 99–109. https://doi.org/10.1007/s00431-013-2136-y	National	Quantitative	women age 15–49 years old who had delivered within three years prior to the survey	4,136	Maternal health; neonatal health	Infant care practices	Prenatal care visits; having SBA at prenatal care	children of mothers with no prenatal care were at increased risk of neonatal death (OR = 2.03, 95 % CI = 1.28–3.23). Compared to women with no prenatal care, those with more than three visits were more likely to immunize their children (OR = 2.66, 95 % CI = 2.10–3.36) and more likely to initiate breastfeeding within 1 h after birth (OR = 1.25, 95 % CI = 1.02–1.54). Having skilled attendants at prenatal care and at birth was also associated with better infant care practices. Conclusion:Neonatal mortality is still high in Nepal. Adequate prenatal care utilization may represent a key preventative strategy, which, in the present study, was associated with improvement in neonatal mortality, higher likelihood of having immunization, and initiation of breastfeeding within 1 h after birth. Public health awareness programs and interventions are needed in Nepal to increase the utilization of prenatal care as well as delivery assisted by skilled attendants.	Individual; Facility
MH7	:Pandey S (2018) Women's knowledge about the conditional cash incentive program and its association with institutional delivery in Nepal. PLoS ONE 13(6):e0199230.https://doi.org/ 10.1371/journal.pone.0199230	Nepal	Quantitative	WRAs	4,036	Maternal Health	Institutional delivery	education, wealth, urban status, first birth, the number of antenatal care visits, and exposure to news media	The knowledge of the SDIP was associated with nearly three-fold increase in institutional delivery. Nearly 90% of the women who had delivered in the past five years knew about the SDIP.	Individual; household; community
MH9	Shahabuddin ASM, De Brouwere V, Adhikari R, et al. Determinants of institutional delivery among young married women in Nepal: Evidence from the Nepal Demographic and Health Survey, 2011. BMJ Open 2017;7:e012446. doi:10.1136/ bmjopen-2016-012446	Nepal	Quantitative	ever-married young women (15–24 years of age) who had had at least one birth in the 5 years	1662	Maternal health	Institutional delivery	decision-making autonomy, accessibility	inequality exists in the use of institutional delivery among young married women in Nepal. Several factors were associated with and influenced young women's use of institutional delivery. Among all factors, receipt of an adequate number (at least four) of ANC visits had a strong and positive association with the use of institutional delivery.	Individual; family; health facility
MH11	:Acharya P, AdhikariTB, Neupane D, Thapa K, Bhandari PM (2017) Correlates of institutionaldeliveries among teenageand nonteenage mothers in Nepal. PLoS ONE 12(10): e0185667.https://doi.org/10.1371/journal. pone.0185667	Nepal	Quantitative	Teenage mothers	381	Maternal health	Institutional delivery	Place of residence, occupation, socioeconomic status, and frequency of ANC visits	While the association of most of the background characteristics with institutional delivery was uniform for both teenage and non-teenage mothers, the association with educational status, parity, birth preparedness and women autonomy was significant only for non-teenage mothers.	Individual; household; community

MH45	Choulagai, B. P., Aryal, U. R., Shrestha, B., Vaidya, A., Onta, S., Petzold, M., & Krettek, A. (2015). Jhaukhel-Duwakot Health Demographic Surveillance Site, Nepal: 2012 follow-up survey and use of skilled birth attendants. *Glob Health Action* , *8* , 29396. https://doi.org/10.3402/gha.v8.29396	Bhaktapur - Jhaukhel-Duwakot Health Demographic Surveillance Site	Quant	Women who delivered baby in past 2 years	3505 HHs; 434 women delivering baby in past 2 years	Maternal health	Institutional delivery	ANC; use of transport to reach facility;	N/A	Women who accessed antenatal care and used transport (e.g. bus, taxi, motorcycle) to reach a health facility were more likely to access institutional delivery. Low adequate use of postnatal care	Health facility
MH49	Das, S., Alcock, G., Azad, K., Kuddus, A., Manandhar, D. S., Shrestha, B. P., … Osrin, D. (2016). Institutional delivery in public and private sectors in South Asia: a comparative analysis of prospective data from four demographic surveillance sites. *BMC PREGNANCY AND CHILDBIRTH* , *16* . https://doi.org/10.1186/s12884-016-1069-7	National - in demographic surveillance sites in Bangladesh, Nepal, and India	Quant	Pregnant women	52750 deliveries	Maternal health	Institutional delivery	household asset index, maternal schooling, maternal age, and parity	N/A	Institutional delivery increased with wealth and education; In Bangladesh and urban India, the proportion of deliveries in the private sector increased with wealth, maternal education, and age. The opposite was observed in rural India and Nepal.	Individual; household
MH55	Dhakal, P., Shrestha, M., Baral, D., & Pathak, S. (2018). Factors affecting the place of delivery among mothers residing in Jhorahat VDC, Morang, Nepal. *International Journal of Community Based Nursing and Midwifery* , *6* (1), 2–11.	Jhorahat VDC, Morang district, Nepal	Mixed methods	Mothers	93 mothers; 2 FGDs with decision-makers and FCHVs;	Maternal health	Institutional delivery	Socio-demographic factors; ease/convenience; safety		Ease/convenience associated with home delivery; safety associated with institutional delivery; "there was a significant association between caste, education of mothers, education of spouse, occupation of spouse, per capita income, time to reach the nearest health center, parity, previous place of delivery, number of antenatal visit, knowledge about place of delivery, planned place of delivery, and place of delivery."	Individual; couple; household; health facility
MH56	Dixit, P., Khan, J., Dwivedi, L. K., & Gupta, A. (2017). Dimensions of antenatal care service and the alacrity of mothers towards institutional delivery in South and South East Asia. *PloS One* , *12* (7), e0181793. https://doi.org/10.1371/journal.pone.0181793	National (DHS) - compares across south asia	Quantitative	Women having given birth		Maternal health	Institutional delivery	ANC visits (timing and # of visits; specific ANC procedures received)		Stronger association between specific ANC procedures received and institutional delivery than between timing/# of visits and institutional delivery (Across settings)	Individual
MH58	Ensor, T., Bhatt, H., & Tiwari, S. (2017). Incentivizing universal safe delivery in Nepal: 10 years of experience. *Health Policy and Planning* , *32* (8), 1185–1192. https://doi.org/10.1093/heapol/czx070	National (DHS)	Quantitative	Individuals having institutional deliveries		Maternal health	Institutional delivery	Incentive programs (financing initiatives)		The beneficial impact of maternal financing policies in Nepal is skewed towards areas and households that are geographically more accessible and wealthy.	Policy
MH61	Freidoony, L., Ranabhat, C. L., Kim, C.-B., Kim, C.-S., Ahn, D.-W., & Doh, Y. A. (2018). Predisposing, enabling, and need factors associated with utilization of institutional delivery services: A community-based cross-sectional study in far-western Nepal. *Women and Health* , *58* (1), 51–71. https://doi.org/10.1080/03630242.2016.1267689	Kailali district	Quantitative	Mothers giving birth in past 5 years	500	Maternal health	Institutional delivery	Socio-dem factors; health status; ANC visits;		Primiparity, having a secondary or higher education level, living in the Durgauli village, having husbands with occupations other than agriculture or professional/technical jobs, and having attended four or more antenatal care (ANC) visits had significantly increased use of institutional deliveries. Also, belonging to the richest 20% of the community and having experienced pregnancy complications were marginally significantly associated.	Individual; couple; community
MH70	Hodge, A., Byrne, A., Morgan, A., & Jimenez-Soto, E. (2014). Utilisation of Health Services and Geography: Deconstructing Regional Differences in Barriers to Facility-Based Delivery in Nepal. *Maternal and Child Health Journal* , *19* (3), 566–577. https://doi.org/10.1007/s10995-014-1540-x	Nepal	Quantitative	Community level		Maternal health	Institutional delivery	Factors that influence health behaviors; distance to facilities; mother's birth history		The mean coverage of facility-based deliveries was 18.6 and 36.3 % in the mountains region and the rest of Nepal, respectively. Between 54.8 and 74.1 % of the regional coverage gap was explained by differences in observed characteristics. Factors influencing health behaviours (proxied by mothers' education, TV viewership and tobacco use, and household wealth) and subjective distance to the health facility were the major factors, contributing between 52.9 and 62.5 % of the disparity. Mothers' birth history was also noteworthy.	Individual; community; health facility
MH73	Huda, T. M., Hayes, A., & Dibley, M. J. (2018). Examining horizontal inequity and social determinants of inequality in facility delivery services in three South Asian countries. *Journal of Global Health* , *8* (1), 10416. https://doi.org/10.7189/jogh.08.010416	Nepal and other countries	Quantitative	Women in DHS (and HH data)	Varies	Maternal health	Institutional delivery	Horizontal ineqiuities		The decomposition analysis revealed that facility delivery is driven mostly by the social determinants of health rather than the individual health risk. Household socioeconomic condition, parental education, place of residence and parity emerged as the most important factors.	Individual; household; community
MH75	Joseph, G., da Silva, I. C. M., Fink, G., Barros, A. J. D., & Victora, C. G. (2018). Absolute income is a better predictor of coverage by skilled birth attendance than relative wealth quintiles in a multicountry analysis: comparison of 100 low- and middle-income countries. *BMC PREGNANCY AND CHILDBIRTH* , *18* . https://doi.org/10.1186/s12884-018-1734-0	Nepal and other countries	Quantitative	Women	Varies	Maternal health	Institutional delivery	Absolute income vs. wealth		Information on income allowed identification of countries - such as Burkina Faso, Cambodia, Egypt, Nepal and Rwanda - which were well above what would be expected solely from changes in income. Conclusion: Absolute income is a better predictor of SBA and institutional delivery coverage than the relative measure of quintiles of wealth index and may help identify countries where increased coverage is likely due to interventions other than increased income.	household
MH77	Joshi, D., Baral, S. C., Giri, S., & Kumar, A. M. V. (2016). Universal institutional delivery among mothers in a remote mountain district of Nepal: what are the challenges? *Public Health Action* , *6* (4), 267–272. https://doi.org/10.5588/pha.16.0025	Mugu	Quantitative	Mothers	275	Maternal health	Institutional delivery	Access; media; parity; preferences; perceived quality of care		Multivariate logistic regression analysis showed that women who resided within 1 h distance from the birthing centre, had adequate mass media exposure or had only one child were more likely to deliver in hospital. Reasons for non-institutional delivery (n = 178) were related to geographical access (49%), personal preferences (18%) and perceived poor quality care (4%). Mothers who accessed institutional delivery (n = 97) also reported difficulties related to travel (60%), costs (28%), dysfunctional health system (18%) and unfriendly attitudes of the health-care providers (7%).	Individual; household; health facility
MH79	Karkee, R., Baral, O. B., Khanal, V., & Lee, A. H. (2014). The role of obstetric knowledge in utilization of delivery service in Nepal. *Health Education Research* , *29* (6), 1041–1048. https://doi.org/10.1093/her/cyu059	central hills district of Nepal	Quantitative	Pregnant women with more than 5 mo gestation	701	Maternal health	Institutional delivery	Knowledge of obstetrics; Birth Preparedness and Complication Readiness program;	Birth Preparedness and Complication Readiness program	In particular, women who acknowledged that unexpected problems could occur during pregnancy and childbirth were more likely (odds ratio [OR] 5.83, 95% confidence interval [CI] 2.95-11.52) to deliver at a health facility than others unaware of the possible consequences. Similarly, women who knew any antepartum danger sign (OR 2.16, 95% CI: 1.17-3.98), any intrapartum danger sign (OR 3.80, 95% CI: 2.07-6.96) and any postpartum danger sign (OR 3.47 95% CI: 1.93-6.25), tended to deliver at a health facility.	Individual
MH81	Karkee, R., Lee, A. H., & Khanal, V. (2014). Need factors for utilisation of institutional delivery services in Nepal: an analysis from Nepal Demographic and Health Survey, 2011. *BMJ Open* , *4* (3), e004372. https://doi.org/10.1136/bmjopen-2013-004372	Nepal	Quantitative	Subset of ever-married women	4079	Maternal health	Institutional delivery	antenatal care visits and birth preparedness activities;		low ANC; low facility delivery; low birth prep activities After adjusting for external, predisposing and enabling factors, women who made more than four antenatal care visits were five times more likely to deliver at a health facility when compared to those who paid no visit (adjusted OR 4.94, 95% CI 3.14 to 7.76). Similarly, the likelihood for facility delivery increased by 3.4-fold among women who prepared for at least two of the four activities compared to their counterparts who made no preparation (adjusted OR 3.41, 95% CI 2.01 to 5.58).	Individual

MH86	Khatri, R. B., Dangi, T. P., Gautam, R., Shrestha, K. N., & Homer, C. S. E. (2017). Barriers to utilization of childbirth services of a rural birthing center in Nepal: A qualitative study. *PloS One , 12* (5), e0177602. https://doi.org/10.1371/journal.pone.0177602	rural community of Rukum district, Nepal	Qualitative study	Pregnant women, their families, health workers at birthing centers	26 in-depth interviews with service users and providers, and three focus group discussions with community key informants in a rural community of Rukum district. The Adithya Cattamanchi logic model was used as a guiding framework for data analysis.	Maternal health	Institutional delivery	Quality of services, human resources, governance, health system challenges, geography, birth preparedness, cultural practices and traditions	Recommendation: awareness-raising activities, local resource mobilization, ensuring access to skilled providers and equipment and other long-term infrastructure development works could improve the quality and utilization of childbirth services in the rural birthing center.	Women did not use the services at rural birthing centers because of systematic and contextual barriers. Irregular and poor quality services, inadequate human and capital resources, and poor governance were health system challenges which prevented service delivery. Contextual barriers including difficult geography, poor birth preparedness practices, harmful culture practices and traditions and low level of trust were also found to contribute to underutilization of the birthing center.	Health facility; community; societal
MH98	Maru, S., Bangura, A. H., Mehta, P., Bista, D., Borgatta, L., Pande, S., … Maru, D. (2017). Impact of the roll out of comprehensive emergency obstetric care on institutional birth rate in rural Nepal. *BMC Pregnancy and Childbirth , 17* (1), 77. https://doi.org/10.1186/s12884-017-1267-y	Achham	Quantitative and qualitative	Postpartum women	2 groups - 77 and 133	Maternal health	Institutional delivery	Implementation of comprehensive emergency obstetric care; beliefs about safety; preferences; income		Institutional birth rates increased after comprehensive emergency obstetric care implementation (from 30 to 77%, OR 7.7) at both hospital (OR 2.5) and low-level facilities (OR 4.6, p < 0.01 for all). The logistic regression indicated that comprehensive emergency obstetric care availability (OR 5.6), belief that the hospital is the safest birth location (OR 44.8), safety prioritization in decision-making (OR 7.7), and higher income (OR 1.1) predict institutional birth (p </= 0.01 for all). Qualitative analysis revealed comprehensive emergency obstetric care awareness, increased social expectation for institutional birth, and birth planning as important factors.	Individual; household; health facility; societal
MH99	Maru, S., Rajeev, S., Pokhrel, R., Poudyal, A., Mehta, P., Bista, D., … Maru, D. (2016). Determinants of institutional birth among women in rural Nepal: a mixed-methods cross-sectional study. *BMC Pregnancy and Childbirth , 16* , 252. https://doi.org/10.1186/s12884-016-1022-9	Accham	Quantitative and qualitative	Postpartum women		Maternal health	Institutional delivery	Age, income, land ownership ; beliefs (safety, distance)		The institutional birth rate for the hospital's catchment area population was calculated to be 0.30 (54 home births, 23 facility births). Institutional birth was more likely as age decreased (ORs in the range of 0.20-0.28) and as income increased (ORs in the range of 1.38-1.45). Institutional birth among women who owned land was less likely (OR = 0.82 [0.71, 0.92]). Ninety percent of participants in the institutional birth group identified safety and good care as the most important factors determining location of birth, whereas 60 % of participants in the home birth group reported distance from hospital as a key determinant of location of birth. Qualitative analysis elucidated the importance of social support, financial resources, birth planning, awareness of services, perception of safety, and referral capacity in achieving an institutional birth. most said hospital safest, even if they didn't go	Individual; household; health facility
MH104	Shah, R., Rehfuess, E. A., Maskey, M. K., Fischer, R., Bhandari, P. B., & Delius, M. (2015). Factors affecting institutional delivery in rural Chitwan district of Nepal: a community-based cross-sectional study. BMC Pregnancy and Childbirth, 15, 27. https://doi.org/10.1186/s12884-015-0454-y	Chitwan, Nepal	Qualitative			Maternal health	Institutional delivery			With multiple incentives present, the decision to deliver in a health facility is affected by a complex interplay of socio-demographic, socio-cultural, and health service-related factors	Policy/structure
MH105	Shah, R., Rehfuess, E. A., Paudel, D., Maskey, M. K., & Delius, M. (2018). Barriers and facilitators to institutional delivery in rural areas of Chitwan district, Nepal: a qualitative study. Reproductive Health, 15(1), 110. https://doi.org/10.1186/s12978-018-0553-0	Nepal	Mixed	MWRAs, husband, CHW, HWs	-	Maternal health	Institutional delivery	access, decisions and support		Despite much progress in recent years, this study revealed some important barriers to the utilization of health services; while suggesting that a combination of upgrading birthing centres and strengthening the competencies of health personnel while embracing and addressing deeply rooted family values and traditions can improve existing programmes and further increase institutional delivery rates.	family; facility
MH154	Morrison, J., Basnet, M., Budhathoki, B., Adhikari, D., Tumbahangphe, K., Manandhar, D., … Groce, N. (2014). Disabled women's maternal and newborn health care in rural Nepal: A qualitative study. *Midwifery , 30* (11), 1132–1139. https://doi.org/10.1016/j.midw.2014.03.012	Makwanpur	Qualitative	Married women with disabiltiies recently delivering a baby (last 10 years); also health workers	27 interviews with disabled married women with disabiltiies	Maternal health	Institutional delivery	Quality; cost; lack of family support		married disabled women considered pregnancy and childbirth to be normal and preferred to deliver at home. Issues of quality, cost and lack of family support were as pertinent for disabled women as they were for their non-disabled peers. Health workers felt unprepared to meet the maternal health needs of disabled women. Key conclusions and implications for practice: integration of disability into existing Skilled Birth Attendant training curricula may improve maternal health care for disabled women. There is a need to monitor progress of interventions that encourage institutional delivery through the use of disaggregated data, to check that disabled women are benefiting equally in efforts to improve access to maternal health care.	Household; facility

MH156	Morrison, J., Thapa, R., Basnet, M., Budhathoki, B., Tumbahangphe, K., Manandhar, D., … Osrin, D. (2014). Exploring the first delay: a qualitative study of home deliveries in Makwanpur district Nepal. *BMC Pregnancy and Childbirth* , *14* , 89. https://doi.org/10.1186/1471-2393-14-89	Makwanpur	Qualitative	Women who had deliveredat home	33 interviews	Maternal health	Institutional delivery	Awareness; Family support; household position/roles; quality of health services		Many women were aware of the benefits of institutional delivery yet their status in the home restricted their access to health facilities. Often they did not wish to bring shame on their family by going against their wishes, or through showing their body in a health institution. They often felt unable to demand the organisation of transportation because this may cause financial problems for their family. Some felt that government incentives were insufficient. Often, a lack of family support at the time of delivery meant that women delivered at home. Past bad experience, and poor quality health services, also prevented women from having an institutional delivery.	Individual; household; facility
MH161	Pandey, S. (2018). Women's knowledge about the conditional cash incentive program and its association with institutional delivery in Nepal. *PloS One* , *13* (6), e0199230. https://doi.org/10.1371/journal.pone.0199230	National (DHS)	Quantitative	Women of reproductive age giving birth in past 5 years	4,036 had given births in the past five years	Maternal health	Institutional delivery	Knowledge of SDIP; healthcare seeking; educ; wealth; rural/urban; exposure to media	Safe Delivery Incentive Programme	Approximately 90% of the women knew about the SDIP. About 42% of the women who knew about the SDIP and 13% of the women who did not know about the SDIP had their most recent delivery at a health institution. The odds of institutional delivery increased nearly three-fold (OR = 2.70; CI: 1.59-4.59) among women who knew about the SDIP compared to women who did not know about the SDIP. Other factors that predicted institutional delivery included education, wealth, urban status, first birth, the number of antenatal care visits, and exposure to news media.	Individual; household; community
MH163	Pathak, P., Shrestha, S., Devkota, R., & Thapa, B. (2018). Factors Associated with the Utilization of Institutional Delivery Service among Mothers. *Journal of Nepal Health Research Council* , *15* (3), 228–234.	Chitwan	Quantitative	Mothers	129	Maternal health	Institutional delivery	Number of ANC		While ethnicity, educational level, parity were significantly asociated in bivariate models, But in the multivariable logistic regression analysis, no. of ANC visit (AOR = 10.03, 95 % CI = 1.02-98.29) was only independent factors affecting institutional delivery service utilization.	Individual
MH165	Paudel, G., Yadav, U. N., Thakuri, S. J., Singh, J. P., & Marahatta, S. B. (2016). Utilization of services for institutional deliveries in Gorkha District. *Journal of Nepal Health Research Council* , *14* (34), 202–206.	Gorkha (Palungtar)	Quantitative	Mothers with a child <2	180	Maternal health	Institutional delivery	Age of marriage; knowledge of delivery incentive; wait times; knowledge of maternal health		93.3% of the mother gave birth to their current child at health institution. The study variables like age at marriage, knowledge on delivery incentive, long waiting hours at health facility, Information on maternal health before current pregnancy, age at first pregnancy, gestational age at first ANC visit and women knowing differences between home and institutional delivery were independent factors influencing utilization of institutional delivery service. CONCLUSIONS: Promotion of information, education and communication on maternal health services and delivery incentives could result in utilization of institutional delivery services.	Individual; health facility
MH168	Mahato, P. K., van Teijlingen, E., Simkhada, P., Sheppard, Z. A., & Silwal, R. C. (2017). Factors related to choice of place of birth in a district in Nepal. *Sexual & Reproductive Healthcare : Official Journal of the Swedish Association of Midwives* , *13* , 91–96. https://doi.org/10.1016/j.srhc.2017.07.002	Nawalparasi	Quantitative	The inclusion criteria were women of reproductive age (15–49 years) having at least one child below 24 months of age at the time of survey	626	Maternal health	Institutional delivery	Distance, caste, access to certain material goods, DM, etc.		Women were significantly more likely to give birth at health care facilities compared to home if the distance was less than one hour, belonged to advantaged caste, had radio, television and motorbike/scooter, decision maker for place of birth was husband, reported their frequency of antenatal (ANC) visits at 4 or more and belonged to age group 15-19. CONCLUSION: The analysis indicates that husbands of women giving birth influence the choice of place of birth. The findings highlight importance of having four or more ANC visits to the health institutions and that it should be located within one-hour walking distance. Inequity in utilisation of childbirth services at health institutions exists as showed by low utilisation of such services by disadvantaged caste.	Individual; household; health system
MH111	Shrestha, S., Bell, J. S., & Marais, D. (2014). An analysis of factors linked to the decline in maternal mortality in Nepal. *PLoS One* , *9* (4), e93029. https://doi.org/10.1371/journal.pone.0093029	National (NDHS 96, 01, 06 & 11)	Quantitative	MWRAs	18,130	Maternal health	Institutional delivery; ANC	SBA, Access, age, education and CE group	NA	There was a significant increase from 72.5% to 83.5% in the proportion of women delivering between the ages of 20–30 years, with fewer women delivering at high risk ages (,20 and $35 years). Fertility dropped gradually significantly, proportion of women having attended at least secondary school increased nearly four-fold from 9.7% to 36.0%	Structural/policy
MH118	Bhatt, H., Tiwari, S., Ensor, T., Ghimire, D. R., & Gavidia, T. (2018). Contribution of Nepal's free delivery care policies in improving utilisation of maternal health services. *International Journal of Health Policy and Management* , *7* (7), 645–655. https://doi.org/10.15171/ijhpm.2018.01		Quant	NGO, government	16 837 births	Maternal health, neonatal health	Institutional delivery; ANC	Nepal Free Delivery Care Policies		Results from this study suggest that MIS and Aama policies have had a strong positive influence on the utilisation of 4 ANC visits and institutional deliveries in Nepa	Policy

MH119	Bhatta, D. N., & Aryal, U. R. (2015). Paternal factors and inequity associated with access to maternal health care service utilization in Nepal: A community based cross-sectional study. *PLoS ONE* , *10* (6). https://doi.org/10.1371/journal.pone.0130380 Khanal, V., Khanal, P., & Lee, A. H. (2015). Sustaining progress in maternal and child health in Nepal. *The Lancet* , *385* (9987), 2573. https://doi.org/10.1016/S0140-6736(15)60963-1	Nepal	Quant	NGO, government	2200	Maternal health, neonatal health Maternal health; child health	Institutional delivery; ANC Institutional delivery; Breastfeeding; Immunization	Earthquake	N/A	Results from this study suggest that MIS and Aama policies have had a strong positive influence on the utilisation of 4 ANC visits and institutional deliveries in NepaPaternal factors like age, household wealth, number of children, ethnicity, education, knowl- edge of danger sign during pregnancy, and husband's decision making for seeking mater- nal and child health care are crucial factors associated to maternal health service utilization. Results from this study suggest that MIS and Aama policies have had a strong positive influence on the utilisation of 4 ANC visits and institutional deliveries in Nepa" Correspondence highlighting importance of earthquake on influencing health servies and need to invest to ensure that women and children's access to services (maternal, immunization) are not affeted	couple, household, community, health facility Health facility; environmental
MH123	Khanal, V., Bhandari, R., Adhikari, M., Karkee, R., & Joshi, C. (2014). Utilization of maternal and child health services in western rural Nepal: a cross-sectional community-based study. *Indian Journal of Public Health* , *58* (1), 27–33. https://doi.org/10.4103/0019-557X.128162	Kapilvastu District of Nepal.	Quantitative - cross sectional survey	Mothers of children under 2 years	190 mothers having children of aged 12-23 months	Maternal health; child health	Institutional delivery; factors associated with utilization of maternal and child health services	Mothers's education, caste/community, geographical location, home or facility-based delivery	None decribed	The immunization program coverage was high, whereas maternal health service utilization remained poor; initiation of breastfeeding within an hour of birth was low (45.3%) and 63.2% had practiced exclusive breastfeeding; 69.5% of respondents delivered their child at home and 39.5% sought assistance from health workers; mothers who did not have any education, mothers from Dalit/Janjati and the Terai origin were less likely to deliver at the health facility and to seek the assistance of health workers during childbirth.	Individual, family, household level
MH122	Nonyane, B. A. S., K C, A., Callaghan-Koru, J. A., Guenther, T., Sitrin, D., Syed, U., … Baqui, A. H. (2016). Equity improvements in maternal and newborn care indicators: results from the Bardiya district of Nepal. *Health Policy and Planning* , *31* (4), 405–414. https://doi.org/10.1093/heapol/czv077	Bardiya	Quantitative	recently delivered mothers	630 respondents at baseline and endline	Maternal health	Institutional delivery; knowledge of danger signs; ANC; birth preparedness	changes in concentration indices (change in equity and changes in coverage)	Community Based Newborn Care Package Community mobilization and behaviour change activities included: (1) FM radio announcements of essential newborn messages; (2) street drama performances on newborn care messages by a professional art and music group 'Surdaya Saskritik Partisthan' (3) Billboards with newborn care messages; (4) television broadcasting at the Maternal Child Health clinic during clinic time; (5) FCHVs interacted with the community during a one-day social event, which was also broadcast live on the radio; (6) orientation of Health Facility Operation and	We observed statistically significant improvements in equity for facility delivery [CIndex: −0.15 (−0.24, −0.06)], knowledge of at least three newborn danger signs [−0.026(−0.06, −0.003)], breastfeeding within 1 h [−0.05(−0.11, −0.0001)], at least one antenatal visit with a skilled provider [−0.25(−0.04, −0.01)], at least four antenatal visits from any provider [−0.15(−0.19, −0.10)] and birth preparedness [−0.09(−0.12, −0.06)]. The largest increases in practices were observed for facility delivery (50%), immediate drying (34%) and delayed bathing (29%). These results and those of similar studies are evidence that community-based interventions delivered by female community health volunteers can be instrumental in improving equity in levels of facility delivery and other newborn care behaviours. We recommend that equity be evaluated in other similar settings within Nepal in order to determine if similar results are observed.	Community; facility (intervention worked at multiple levels)
MH97	Maru, D., Maru, S., Nirola, I., Gonzalez-Smith, J., Thoumi, A., Nepal, P., … McClellan, M. (2017). Accountable Care Reforms Improve Women's And Children's Health In Nepal. *Health Affairs (Project Hope)* , *36* (11), 1965–1972. https://doi.org/10.1377/hlthaff.2017.0579	Accham	Quantitatie	Pregnancies in the distrit during a period of time	541 at follow-up	Maternal health	Institutional delivery; Use of services - 4 ANC; institutional birth rate; PPFP	delivery of care via public-private partnership	Public-private partnership	we found an improvement in population-level indicators linked to reducing maternal and infant mortality: receipt of four antenatal care visits (83 percent to 90 percent), institutional birth rate (81 percent to 93 percent), and the prevalence of postpartum contraception (19 percent to 47 percent). The intervention cost $3.40 per capita (at the population level) and $185 total per pregnant woman who received services.	Health facility
MH36	Anand, E., Unisa, S., & Singh, J. (2017). INTIMATE PARTNER VIOLENCE AND UNINTENDED PREGNANCY AMONG ADOLESCENT AND YOUNG ADULT MARRIED WOMEN IN SOUTH ASIA. *JOURNAL OF BIOSOCIAL SCIENCE* , *49* (2), 206–221. https://doi.org/10.1017/S0021932016000286	Bangladesh and Nepal	Quant	NGO, government	9788	Maternal health	intimate partner violence	age and location		"The findings indicate that IPV is a risk factor for unintended pregnancy among adolescent and young adult married women."	couple, societal/structural/political

	Atteraya, M. S., Gnawali, S., & Song, I. H. (2015). Factors Associated With Intimate Partner Violence Against Married Women in Nepal. *JOURNAL OF INTERPERSONAL VIOLENCE* , *30* (7), 1226–1246. https://doi.org/10.1177/0886260514539845											
MH40		Nepal	quant	NGO, government	3373	Maternal health		intimate partner violence	female literacy, wealth, violent family history, lack of decision-making autonomy		"At the community level, women most at risk of IPV were those living in the Terai region, and women belonging to underprivileged castes and ethnic groups."	couple, societal/structural/political
	Kohrt, B. A., & Bourey, C. (2016). Culture and Comorbidity: Intimate Partner Violence as a Common Risk Factor for Maternal Mental Illness and Reproductive Health Problems among Former Child Soldiers in Nepal. *Medical Anthropology Quarterly* , *30* (4), 515–535. https://doi.org/10.1111/maq.12336	Nepal	Qualitative		13 female child soldiers	Maternal health		intimate partner violence	Culture influences internal (psychological), external (social), institutional (structural), and health care (medical) processes, which, taken together, create differential risk of comorbidity across contexts.	none described.	Twelve participants said they had remained silent, enduring violence, forgiving the husband. Twelve participants endorsed communication with one's husband. Only four participants sought family support, and three contacted police. Ultimately, 12 participants left the relationship, but the majority (nine) only left after the final IPV experience, which was preceded by prolonged psychological suffering and pregnancy endangerment. comorbidity risks are increased in cultural context that rely on individual or couples-only behavior, lack external social engagement, have weak law and justice institutions, and have limited health services.	individual, household, couples, family, society
MH87												
	Ashish, K. C., Wrammert, J., Ewald, U., Clark, R. B., Gautam, J., Baral, G., … Malqvist, M. (2016). Incidence of intrapartum stillbirth and associated risk factors in tertiary care setting of Nepal: a case-control study. *REPRODUCTIVE HEALTH* , *13* . https://doi.org/10.1186/s12978-016-0226-9											
MH39		Nepal	Quant	NGO, government	4476	Maternal health		intrapartum stillbirths	wealth		"Being born preterm with a small-for-gestation al age was associated with the highest risk for intrapartum stillbirth. Inadequate fetal heart rate mon itoring and partogram use are preventable risk factors associated with intrapartum stillbirth"	health facility, couple
	Henjum, S., Kjellevold, M., Ulak, M., Chandyo, R. K., Shrestha, P. S., Froyland, L., … Strand, T. A. (2016). Iodine Concentration in Breastmilk and Urine among LactatingWomen of Bhaktapur, Nepal. *NUTRIENTS* , *8* (5). https://doi.org/10.3390/nu8050255											
MH68		Bhaktapur	Quantitativ e	Lactating women	485	Maternal health		Iodine in breastmilk and urine	Descriptive		A large proportion of the women had adequate BMIC and UIC; however, a subset had high iodine concentrations. These findings emphasize the importance of carefully monitoring iodine intake to minimize the risk of iodine excess and subsequently preventing transient iodine-induced hypothyroidism in breastfed infants.	Biological; household
	Henjum, S., Manger, M., Skeie, E., Ulak, M., Thorne-Lyman, A. L., Chandyo, R., … Strand, T. A. (2014). Iron deficiency is uncommon among lactating women in urban Nepal, despite a high risk of inadequate dietary iron intake. *The British Journal of Nutrition* , *112* (1), 132–141. https://doi.org/10.1017/S0007114514000592											
MH69		Bhaktapur	Quantitativ e	Lactating women	500	Maternal health		Iron deficiency	Age of child; dietary Fe		In multiple regression analyses, there was a weak positive association between dietary Fe intake and body Fe (beta 0.03, 95% CI 0.014, 0.045). Among the women with children aged < 6 months, but not those with older infants, intake of Fe supplements in pregnancy for at least 6 months was positively associated with body Fe (P for interaction < 0.01). Due to a relatively high dietary intake of non-haem Fe combined with low bioavailability, a high proportion of the women in the present study were at the risk of inadequate intake of Fe. The low prevalence of anaemia and Fe deficiency may be explained by the majority of the women consuming Fe supplements in pregnancy.	Biological

MH54	Devkota, R., Khan, G. M., Alam, K., Sapkota, B., & Devkota, D. (2017). Impacts of counseling on knowledge, attitude and practice of medication use during pregnancy. *BMC Pregnancy and Childbirth* , *17* (1), 131. https://doi.org/10.1186/s12884-017-1316-6	Western Nepal (Manipal Teaching Hospital, Nepal)	Quantitative	Pregnant women presenting with complications (at least one)	275	Maternal health	KAP related to medication use for complications	Exposure to counseling on mediction use	Counseling intervention (interpersonal)	Significant increase in KAP after exposure to counseling.	Health facility
MH29	Acharya, D., Singh, J. K., Adhikari, S., & Jain, V. (2016). Association between sociodemographic characteristics of female community health volunteers and their knowledge and performance on maternal and child health services in rural Nepal. *Journal of Multidisciplinary Healthcare* , *9* , 111–120. https://doi.org/10.2147/JMDH.S98700	Dhanusha district, Southern Terai, Nepal	Quant	Female Community Health Volunteers	128	Maternal Health	knowledge and performance of Maternal and Neonatal care components	Social demographic charactheristics		consider educational level when selecting Female Community Health Volunteers	Community, Individual
MH132	Acharya, D., Paudel, R., Gautam, K., Gautam, S., & Upadhyaya, T. (2016). Knowledge of Maternal and Newborn Care Among Primary Level Health Workers in Kapilvastu District of Nepal. *Annals of Medical and Health Sciences Research* , *6* (1), 27–32. https://doi.org/10.4103/2141-9248.180266	Nepal	Quant	primary level health workers working on Maternal and Newborn Care	137	Maternal health; neonatal health	knowledge of Maternal and Neonatal care components	Knowledge of maternal and neonatal aspects (i.e. when to bath newborn, warning signs of danger in pregnancy, meaning of exclusive breast feeding)		Primary level health workers need additional education to improve knowledge gaps	health facility /
MH133	Acharya, D., & Paudel, R. (2016). Assessment of critical knowledge on maternal and newborn care services among primary level nurse mid-wives in Kapilvastu District of Nepal. *Kathmandu University Medical Journal* , *13* (52), 351–356.	Kapilvastu District of Nepal	Quant	knowledge of primary level nurse-midwives on maternal and newborn care	68	Maternal health; neonatal health	knowledge of Maternal and Neonatal care components	knowledge of how to stop post-partum haemorrhage, mother to child HIV transmission, and newborn care		nurse-midwives were found to have either poor or some level of knowledge in most of the components of maternal and newborn care services.	health facility /

MH151	Schumer, J. E., Bernell, S. L., Bovbjerg, V. E., & Long, M. L. (2014). Factors influencing maternal nutrition in rural Nepal: an exploratory research project. Health Care for Women International, 35(10), 1201–1215. https://doi.org/10.1080/07399332.2013.862792	Western region	Quanitative	Women of cildbaring age	2500	Nutrition; maternal health	Knowledge of micronutrients (folic acid, iron)	program participation	GNE education program - and micronutrients given to participants	High interest in learning about nutrition - positively associated with women's education We found that rural women are interested in learning about nutrition regardless of educational attainment and that level of education is strongly associated with interest in learning about nutrition (p <.001). Although the majority of women with no education expressed interest in learning about nutrition (71%), a substantial percentage (22%) were not interested. Education and the teaching of basic health messages may hold important benefits for improving maternal and child health.	Individual
MH136	Cunningham, K., Singh, A., Pandey Rana, P., Brye, L., Alayon, S., Lapping, K., … Klemm, R. D. W. (2017). Suaahara in Nepal: An at-scale, multi-sectoral nutrition program influences knowledge and practices while enhancing equity. *Maternal & Child Nutrition* , *13* (4).	Multiple districts across Nepal	Quant	HH-level data - process evaluation	480	Maternal health; neonatal health	levels of knowledge and practices related to health, nutrition, and water, sanitation, and hygiene (WASH)	Exposure to Suaahara; DAG status of household;	Suaahara had a specific focus on social behavior change and communication (SBCC) and gender and social inclusion (GESI), including the targeting of disadvantaged groups (DAGs), that is, those identified as being food insecure and vulnerable due to socioeconomic, cultural, or physical factors. Suaahara integrated its programming across nutrition, health services, family planning, WASH, and agriculture/homestead food production (HFP) with four key objectives: (a) to improve household nutrition, health, and	A higher proportion of DAG households in Suaahara areas reported exposure, were knowledgeable, and practiced optimal behaviors related to nearly all maternal and child health, nutrition, and WASH indicators than DAG households in non-Suaahara areas and sometimes even than non-DAG households in Suaahara areas. Moreover, differences in some of these indicators between DAG and non-DAG households were significantly smaller in Suaahara areas than in comparison areas. These results indicate that large-scale integrated interventions can influence nutrition-related knowledge and practices, while simultaneously reducing inequities.	HH
MH26	Mahumud, R. A., Sultana, M., & Sarker, A. R. (2017). Distribution and determinants of low birth weight in developing countries. *Journal of Preventive Medicine and Public Health* , *50* (1), 18–28. https://doi.org/10.3961/jpmph.16.087	Cambodia, Columbia, Indonesia, Jordan, Nepal, Pakistan, Tanzania, Uganda and Zimbabwe	Secondary analysis of DHS data (2010-2013)	mothers and infants	DHS national level household surveys	Family planning; reproductive health; maternal health; neonatal health	low birth rate	antenatal care, delayed coception, low body index, SES, literacy rate	N/A	Various factors such as advanced maternal age and literacy rates are determinants of low birth rates in developing countries		All
MH117	Bhaskar, R. K., Deo, K. K., Neupane, U., Chaudhary Bhaskar, S., Yadav, B. K., Pokharel, H. P., & Pokharel, P. K. (2015). A Case Control Study on Risk Factors Associated with Low Birth Weight Babies in Eastern Nepal. *International Journal of Pediatrics* , *2015* , 807373. https://doi.org/10.1155/2015/807373		Quant; case control	NGO, government	318	Maternal health, neonatal health	low birth weight	maternal blood group, BMI, age		maternal blood group AB, normal maternal BodyMass Index (BMI), mother's age of30 or more years, and starting ANCvisit earlier were found to be protective for LBW	individual, household, societal/structural/political
MH135	Budhathoki, S., Poudel, P., Bhatta, N. K., Singh, R. R., Shrivastava, M. K., Niraula, S. R., & Khanal, B. (2014). Clinico-epidemiological study of low birth weight newborns in the Eastern part of Nepal. *Nepal Medical College Journal : NMCJ* , *16* (2–4), 190–193.	Eastern Nepal	Quant	NGO, government	2587	Maternal health; neonatal health	low birth weight	Birth weight, gestational age, apnoea and mechanical ventilation		Incidence of LBW babies in our hospital was 14.45%, More than 4/5 (82.2%) baby's mother were primigravida	individual, health facility
MH149	Christian, P., Nanayakkara-Bind, A., Schulze, K., Wu, L., LeClerq, S. C., & Khatry, S. K. (2016). Antenatal micronutrient supplementation and third trimester cortisol and erythropoietin concentrations. *Maternal & Child Nutrition* , *12* (1), 64–73. https://doi.org/10.1111/mcn.12138	Sarlahi, Nepal	Quant	rural Nepalese women	737	Maternal health; nutrition	Low birth weight	Vitamin/nutrient supplementation	nutrition intervention	In adjusted analyses, third trimester EPO (supplementation) was associated with a reduction in low birthweight, whereas cortisol was negatively associated with length of gestation and higher risk of preterm birth. Iron and multiple micronutrient supplementation may enhance birth outcomes by reducing mediators of maternal stress and impaired erythropoiesis.	Individual (biological)

	Yargawa, J., & Leonardi-Bee, J. (2015). Male involvement and maternal health outcomes: systematic review and meta-analysis. *JOURNAL OF EPIDEMIOLOGY AND COMMUNITY HEALTH* , *69* (6), 604–612. https://doi.org/10.1136/jech-2014-204784										
MH116	Kozuki, N., Katz, J., LeClerq, S. C., Khatry, S. K., West, K. P. J., & Christian, P. (2015). Risk factors and neonatal/infant mortality risk of small-for-gestational-age and preterm birth in rural Nepal. *The Journal of Maternal-Fetal & Neonatal Medicine : The Official Journal of the European Association of Perinatal Medicine, the Federation of Asia and Oceania Perinatal Societies, the International Society of Perinatal Obstetricians* , *28* (9), 1019–1025. https://doi.org/10.3109/14767058.2014.941799	- Rural Nepal	Qualitative Analysis of existing data from maternal micronutrient supplementation trial	Men & Women aged 15-49 Mothers of newborns and neonates	- 4130	Maternal health Maternal health; neonatal health; nutrition	male involvement Maternal chronic and acute malnutrition and the associations between small-for-gestational-age (SGA)/preterm birth and neonatal/infant mortality	health outcomes risk factors for and mortality consequences of small-for-gestational-age (SGA) and preterm birth in rural Nepal.	none mentioned	Male involvement is associated with improved maternal health outcomes in developing countries. Maternal chronic and acute malnutrition appear to be associated with SGA outcomes. Because of high SGA prevalence in South Asia and the increased neonatal and infant mortality risk associated with SGA, there is an urgent need to intervene with effective interventions.	individual/family Individuals, household
MH146	Lama, S., & Krishna, A. K. I. (2014). Barriers in Utilization of Maternal Health Care Services: Perceptions of Rural Women in Eastern Nepal. *Kathmandu University Medical Journal (KUMJ)* , *12* (48), 253–258.	eastern Nepal	Qualitative. Exploratory study with FGDs and IDIs	Women of reproductive age, mothers		Maternal health	maternal health care service utilization		Not mentioned	The barriers to maternal health care service utilization were identified as social factors like family pressure, superstition, shyness, misconception, negligence, illiteracy, alcoholism, in addition to economic barriers and cultural practices.	individual, household, community, local government
MH91 MH152	Milne, L., van Teijlingen, E., Hundley, V., Simkhada, P., & Ireland, J. (2015). Staff perspectives of barriers to women accessing birthing services in Nepal: a qualitative study. *BMC Pregnancy and Childbirth* , *15* , 142. https://doi.org/10.1186/s12884-015-0564-6	Kathmandu valley	Qualitative	Staff at hospitals serving pregnant women	20 interviews and non-participant observation	Maternal health	maternal health care service utilization	Individual level; facility level; economic reasons (facilitating environment)		First Phase Delays are: 1) lack of awareness that the facility/services exist; 2) women being too busy to attend; 3) poor services; 4) embarrassment; and 5) financial issues. Themes for the second Phase of Delay are: 1) birthing on the way; and 2) by-passing the facility in favour of one further away. The final Phase involved: 1) absence of an enabling environment; and 2) disrespectful care.	Individual; health facility; household
MH100	Mehata, S., Paudel, Y. R., Dariang, M., Aryal, K. K., Lal, B. K., Khanal, M. N., & Thomas, D. (2017). Trends and Inequalities in Use of Maternal Health Care Services in Nepal: Strategy in the Search for Improvements. *BioMed Research International* , *2017* . https://doi.org/10.1155/2017/5079234	Nepal	Quantitative	Mothers giving birth 3-5 years prior to survey	Varies	Maternal health	Maternal healthcare utilization	SD factors		The percentage of mothers that received four antenatal care (ANC) consultations increased from 9% to 54%, the institutional delivery rate increased from 6% to 47%, and the cesarean section (C-section) rate increased from 1% in 1994 to 6% in 2011. Inequality reduced over time (based on wealth) All sociodemographic variables were significant predictors of use of maternal health services, out of which maternal education was the most powerful. (poverty, education, and rural/urban status significantly associated)	Individual; household; community
	Baron, E. C., Hanlon, C., Mall, S., Honikman, S., Breuer, E., Kathree, T., … Tomlinson, M. (2016). Maternal mental health in primary care in five low- and middle-income countries: a situational analysis. *BMC Health Services Research* , *16* , 53. https://doi.org/10.1186/s12913-016-1291-z										
MH41	Lee, Y. Q., Collins, C. E., Gordon, A., Rae, K. M., & Pringle, K. G. (2018). The Relationship between Maternal Nutrition during Pregnancy and Offspring Kidney Structure and Function in Humans: A Systematic Review. *NUTRIENTS* , *10* (2). https://doi.org/10.3390/nu10020241	Ethiopia, India, Nepal, South Africa and Uganda	situational analysis Systematic review	NGO, government Mothers, children,	10 studies	Maternal health Maternal health; neonatal health; nutrition	maternal mental health maternal nutrition during pregnancy and child health	relationship between maternal nutrition during pregnancy and offspring kidney structure and function in humans.	Not mentioned	It is difficult to anticipate demand for mental health care at district level in the five countries, given the lack of evidence on the prevalence and treatment coverage of women with maternal mental disorders. Limited Deficiencies in maternal folate, vitamin A, and total energy during pregnancy were associated with detrimental impacts on kidney structure and function, measured by kidney volume, proteinuria, eGFR(cystc) and mean creatinine clearance in the offspring. Additional experimental and longitudinal prospective studies are warranted to confirm this relationship, especially in Indigenous populations where the risk of renal disease is greater.	societal/structural/political Individual, family, facility level
MH147											

MH18	Puri, M., Regmi, S., Tamang, A., & Shrestha, P. (2014). Road map to scaling-up: translating operations research study's results into actions for expanding medical abortion services in rural health facilities in Nepal. Health Research Policy and Systems, 12. https://doi.org/10.1186/1478-4505-12-24	Rupandehi, Kailali	Quantitative	Women receiving MA services		Family Planning; maternal health	medical abortion	accessible and affordable services		This research provided further evidence and a road-map for expanding medical abortion services to rural areas by mid-level service providers in minimum clinical settings without the oversight of physicians, thus reducing complications and deaths due to unsafe abortion.	Policy/structure
MH42	Bhandari, G. P., Subedi, N., Thapa, J., Choulagai, B., Maskey, M. K., & Onta, S. R. (2014). A cluster randomized implementation trial to measure the effectiveness of an intervention package aiming to increase the utilization of skilled birth attendants by women for childbirth: Study protocol. *BMC Pregnancy and Childbirth* , *14* (1). https://doi.org/10.1186/1471-2393-14-109	Nepal	Quant	NGO, government	5000	Maternal health	medical visits during pregnancy			Paper describes an intervention that will take multiple measures to finance, mobilize, and ensure women give birth at health facilities	household, health facility
MH14	Amatya, A., & Dangal, G. (2017). Family Planning 2020 and Nepal's Pledge. *Journal of Nepal Health Research Council* , *15* (2), I–II.	Nepal - nationwide	Review / Position paper	NGO, government		Family planning; maternal health	meeting unmet need for family planning			"At the national level there is a dire need to multi-sectoral approach to reach our targets and for the implementation of CIP so that no one is left behind'	societal/structural/political
MH94	Mahato, P. K., van Teijlingen, E., Simkhada, P., Angell, C., & Ireland, J. (2018). Qualitative evaluation of mental health training of auxiliary nurse midwives in rural Nepal. *Nurse Education Today* , *66* , 44–50. https://doi.org/10.1016/j.nedt.2018.03.025	Nepal	Qualitative	auxillary nurse midwive(ANM)	15	Maternal health	mental health		Training as a way to raise awareness amd cange attitiudes about mental heatlh issues in pregnant women	The main three themes that emerged from the interviews include: 1) issues related to mental, such as importance of maternal mental health training health; 2) societal attitudes and Stigma and 3) support for women.	individual, health facility and societal/structural/policy
MH13	Acharya, P., Gautam, R., & Aro, A. R. (2016). FACTORS INFLUENCING MISTIMED AND UNWANTED PREGNANCIES AMONG NEPALI WOMEN. *Journal of Biosocial Science* , *48* (2), 249–266. https://doi.org/10.1017/S0021932015000073	Nepal - nationwide	Quant	Nepali women	5391	Family planning; maternal health	mistimed and unwanted last pregnancy	geographic location, husbands with paid jobs, socioeconomic status		Women from the hill region reported more untimely pregnancies and women from the Western development region reported more unwanted pregnancies.	household, individual
MH110	Shrestha, J. R., Manandhar, D. S., Manandhar, S. R., Adhikari, D., Rai, C., Rana, H., … Pradhan, A. (2015). Maternal and Neonatal Health Knowledge, Service Quality and Utilization: Findings from a Community Based Quasi-experimental Trial in Arghakhanchi District of Nepal. *Journal of Nepal Health Research Council* , *13* (29), 78–83.	Arghakhanchi	Quantitative	Mothers of child < 23 Mos, Health Facilities	Mothers of <23 mos child=340, Health facilities=5	Maternal health	MNC QI	Qualityof Care	NA	Along with all capacity building programs, support of essential newborn care equipment enabled the health facilities of intervention area to cater better MNC services.	Structural/policy

	McCauley, M. E., van den Broek, N., Dou, L., & Othman, M. (2015). Vitamin A supplementation during pregnancy for maternal and newborn outcomes. *The Cochrane Database of Systematic Reviews* , (10), CD008666. https://doi.org/10.1002/14651858.CD008666.pub3									The pooled results of three large trials in Nepal, Ghana and Bangladesh (with over 153,500 women) do not currently suggest a role for antenatal vitamin A supplementation to reduce maternal or perinatal mortality. However, the populations studied were probably different with regard to baseline vitamin A status and there were problems with follow-up of women. There is good evidence that antenatal vitamin A supplementation reduces maternal night blindness, maternal anaemia for women who live in areas where vitamin A deficiency is common or who are HIV-positive. In addition the available evidence suggests a reduction in maternal infection, but these data are not of a high quality.	
MH143	Kozuki, N., Mullany, L. C., Khatry, S. K., Ghimire, R. K., Paudel, S., Blakemore, K., … Katz, J. (2016). Accuracy of Home-Based Ultrasonographic Diagnosis of Obstetric Risk Factors by Primary-Level Health Care Workers in Rural Nepal. *Obstetrics and Gynecology* , *128* (3), 604–612. https://doi.org/10.1097/AOG.0000000000001558	Nepal and other countries	Quantitative - review	Pregnant women		Maternal health; neonatal health Maternal health	Night blindness; maternal mortality; other Not a behavioral study	Vitamin A supplementation	No SBCC	With limited training, primary-level health care workers in rural Nepal can accurately diagnose selected third-trimester obstetric risk factors using ultrasonography.	Individual; health system
MH89											
	Katz, J., Englund, J. A., Steinhoff, M. C., Khatry, S. K., Shrestha, L., Kuypers, J., … Tielsch, J. M. (2017). Nutritional status of infants at six months of age following maternal influenza immunization: A randomized placebo-controlled trial in rural Nepal. *Vaccine* , *35* (48 Pt B), 6743–6750. https://doi.org/10.1016/j.vaccine.2017.09.095	Sarlahi District, southern plains of Nepal,	Quantitative - A randomized placebo-controlled trial of year round maternal influenza immunization was conducted in two annual cohorts	Infants and mothers	3693 women and 3646 infants	Maternal health; neonatal health; child health	Not a behavioral study		Not a SBCC study	Although maternal immunization reduced low birth weight by 15%, only wasting at 6 months in the 2nd cohort was statistically significantly difference. However, the study was underpowered to detect reductions of public health importance.	
MH145											
MH2	nepal.unfpa.org	National	Quantitative	WRAs	Not clear	Maternal Health	obstetric fistula	Awareness, treatment and training		More than 2 million women in Asia and sub-Saharan Africa are living with fistula and each year between 50,000 to 100,000 women worldwide are affected by this condition	individual/family
	Lubon, A. J., Erchick, D. J., Khatry, S. K., LeClerq, S. C., Agrawal, N. K., Reynolds, M. A., … Mullany, L. C. (2018). Oral health knowledge, behavior, and care seeking among pregnant and recently-delivered women in rural Nepal: a qualitative study. *BMC ORAL HEALTH* , *18* . https://doi.org/10.1186/s12903-018-0564-9	Nepal	Qualitative	pregnant and recently delivered women	IDIs=16; FGDs= 3 groups of 23 participants	Maternal health	oral health diseases (importance of taking care of oral health during pregnancy)	SES	N/A	Women felt confident describing signs and symptoms of oral health diseases but did not have knowledge of where to seek care and relied heavily on their community as a source of information. Some women use toothbrush and toothpaste at least once a day while others use more traditional methods such as use of local shrubs or trees.	individual, household, community, health facility
MH93											
	Houweling, T. A. J., Morrison, J., Alcock, G., Azad, K., Das, S., Hossen, M., … Costello, A. (2016). Reaching the poor with health interventions: programme-incidence analysis of seven randomised trials of women's groups to reduce newborn mortality in Asia and Africa. *Journal of Epidemiology and Community Health* , *70* (1), 31–41. https://doi.org/10.1136/jech-2014-204685	Nepal and other countries (Nepal-Makwanpur, Nepal-Dhanusha)	Quantitative	Pregnancy data	70574 (not all in Nepal)	Maternal health	Participation in women's group meetings	SE and SD factors		Socioeconomic differences in women's group attendance were small, except for occasional lower attendance by elites. Sociodemographic differences were large, with lower attendance by young primigravid women in African as well as in South Asian sites. The intervention was considered relevant and interesting to all socioeconomic groups. Local facilitators ensured inclusion of poorer women. Embarrassment and family constraints on movement outside the home restricted attendance among primigravid women. Reproductive health discussions were perceived as inappropriate for them.	Individual; household
MH72											
	Chalise, M., Steenkamp, M., & Chalise, B. (2016). Factors enabling women with pelvic organ prolapse to seek surgery at mobile surgical camps in two remote districts in Nepal: a qualitative study. *WHO South-East Asia Journal of Public Health* , *5* (2), 141–148. https://doi.org/10.4103/2224-3151.206251	2 districts - 1 hilly, 1 himalaya	Qual	Women recruited in 2 week-long mobile surgical camps	21	Maternal health	Pelvic organ prolapse	Looking at factors affecting women's seeking of surgical treatment for pelvic organ prolapse	N/A	multilevel factors influenced uptake: Health system factors - accessibility and affordability; support of FCHVS sociocultural - being closer to end of reproductive years; having family support individual - symptoms, fear of cancer, etc.	Health facility / sociocultural / individual
MH27											
	Fitchett, J. R., Bhatta, S., Sherpa, T. Y., Malla, B. S., A Fitchett, E. J., Samen, A., & Kristensen, S. (2015). Non-surgical interventions for pelvic organ prolapse in rural Nepal: a prospective monitoring and evaluation study. *JRSM Open* , *6* (12), 2054270415608117. https://doi.org/10.1177/2054270415608117	Baglung	Quantitative	Women with pelvic organ prolapse symptoms 15-49 aged women pregnant within last five years and used maternal care services in public health facility	74 women	Maternal health	Pelvic organ prolapse	Socio-dem factors; kegels/rings given (non-surgical response to POP)		Univariate analyses identified age at screening, age at onset of symptoms, the duration of symptoms and an associated rectocele as factors associated with increasing POP severity ($p < 0.05$). Kegel exercises were taught to 25 (33.8%) women with POP and ring pessaries were offered to 47 (63.5%) women with POP.	Health facility
MH60											
	Devkota, H. R., Clarke, A., Murray, E., & Groce, N. (2017). Do experiences and perceptions about quality of care differ among social groups in Nepal? : A study of maternal healthcare experiences of women with and without disabilities, and Dalit and non-Dalit women. *PloS One* , *12* (12), e0188554. https://doi.org/10.1371/journal.pone.0188554	Rupandehi	Quant		343 women	Maternal health	Perceived quality of care	women with disabilities from both the non-Dalit population and Dalit population and their peers without disabilities from both non-Dalit and Dalit communities	N/A	Perceptions about the quality of care differed significantly by disability status but not by caste (except for a single dimension - cleanliness of services). All groups rated the quality of healthcare delivery, interpersonal and personal factors as well as access to services 'low.' Poor service user experiences and perceptions of quality of care undermine opportunities to translate increased healthcare coverage into improved access and outcomes.	health facility
MH51											

MH80	Karkee, R., Lee, A. H., & Binns, C. W. (2015). Bypassing birth centres for childbirth: an analysis of data from a community-based prospective cohort study in Nepal. *Health Policy and Planning* , *30* (1), 1–7. https://doi.org/10.1093/heapol/czt090	Kaski	Quantitative	pregnant women of 5 months or more gestation recruited from the community had access to local birth centres.	353	Maternal health	Place of delivery (bypassing birth centers)	Wealth; parity; complications; availability		Bypassers tended to be wealthy and have intrapartum complications, but the likelihood of bypassing apparently decreased by higher parity and frequent (four or more) antenatal care visits. Availability of operating facility, adequacy of medical supplies and equipment and competent health staff at the facility were the main reasons for their bypassing decision.	Individual; household; health facility
MH5	Khanal et al.: Factors associated with the utilisation of postnatal care services among the mothers of Nepal: analysis of Nepal Demographic and Health Survey 2011. BMC Women's Health 2014 14:19	Nepal	Qualitative	WRAs	4079	Maternal Health	PNC	Occupation, residence, place of delivery		43.2% reported attending postnatal care within the first six weeks of birth, while 40.9% reported attending immediate postnatal care	
MH6	Kunwar, D., Corey, E. K., Sharma, P., & Risal, A. (2015). Screening for postpartum depression and associated factors among women who deliver at a university hospital, Nepal. *Kathmandu University Medical Journal* , *13* (49), 44–48.	Bangladesh, Ghana, Kygyz Republic, and Nepal, Those who delivered at Dhulikel Hospital	Quantitative Quantitative	WRAs Postpartum women	- 100 postpartum women	Maternal Health Maternal health	PNC postpartum depression	timing of check-up, place of delivery sociodemographic and sociocultural factors, and mother-related, pregnancy-related, and child related factors	Recommended: mothers with high risk should be routinely screened for postpartum depression.	The most recent MICS round 6 and DHS phase 7 have both included a number of questions on the content of the first check within the first 2 days following birth, including cord examination, weight and temperature assessment, breastfeeding counseling and observation and counseling on symtpoms that cause a mother to take a newborn to health care. Postpartum depression is common among Nepalese women and can be detected early in the postpartum periods; and many psychosocial factors like pregnancy complications, infant's health problems and vaginal delivery are associated with it.	Policy
MH90											
MH59	Feldhaus, I., LeFevre, A. E., Rai, C., Bhattarai, J., Russo, D., Rawlins, B., … Thapa, K. (2016). Optimizing treatment for the prevention of pre-eclampsia/eclampsia in Nepal: is calcium supplementation during pregnancy cost-effective? *Cost Effectiveness and Resource Allocation : C/E* , *14* , 13. https://doi.org/10.1186/s12962-016-0062-3 Keasley, J., Blickwedel, J., & Quenby, S. (2017). Adverse effects of exposure to armed conflict on pregnancy: a systematic review. *BMJ Global Health* , *2* (4), e000377. https://doi.org/10.1136/bmjgh-2017-000377	Dailekh district mothers in armed conflict areas. Studies from Libya, Bosnia, Herzegovina, Israel, Palestine, Kosovo, Yugoslavia, Nepal, Somalia, Iraq, Kuwait and Afghanistan.	Quantitative - economic analysis Literature review	Policy makers (pregnant women) Mothers	N/A 13 studies	Maternal health Maternal health; neonatal health	Pre-eclampsia pregnancy outcomes.	Calcium supplementation during pregnancy impacts of exposure to armed conflicts on the pregnancy outcomes.	none mentioned	Calcium supplementation for pregnant mothers for prevention of PE/E provided with MgSO4 for treatment holds promise for the cost-effective reduction of maternal and neonatal morbidity and mortality associated with PE/E. evidence suggested an increase in the incidence of miscarriage, stillbirth, prematurity, congenital abnormalities, miscarriage and premature rupture of membranes among mothers exposed to armed conflict.	Health facility societal, environmental, policy
MH139											
MH53	Devkota, R., Khan, G. M., Alam, K., Regmi, A., & Sapkota, B. (2016). Medication utilization pattern for management of pregnancy complications: a study in Western Nepal. BMC Pregnancy and Childbirth, 16, 272. https://doi.org/10.1186/s12884-016-1068-8 Khanal, V., Zhao, Y., & Sauer, K. (2014). Role of antenatal care and iron supplementation during pregnancy in preventing low birth weight in Nepal: comparison of national surveys 2006 and 2011. *Archives of Public Health = Archives Belges de Sante Publique* , *72* (1), 4. https://doi.org/10.1186/2049-3258-72-4	Western Nepal (Manipal Teaching Hospital, Nepal) National level - Nepal	Quantitative Secondary analysis of data. Pooled data from the Nepal Demographic and Health Surveys (NDHS) of 2006 and 2011 were analysed and compared	Pregnant women presenting with complications (at least one) Newborns, mothers	275 2845 children (i.e. 923 children in 2006 and 1922 children in 2011, who had low birth weight recorded)	Maternal health Maternal health; neonatal health	Prescription of medications in response to complications Prevention of low birthweight of newborns	No predictors - descriptive antenal, care, iron supplmentation and geographical location were some of the socio-demographic and health related factors associated with low birth weight (LBW) of newborns	None described. Conclusion identified a need for targeted interventions aimed at decreasing the high rate of LBW through increasing antenatal care and consumption of iron supplementation during pregnancy.	Drugs prescribed to pregnant women said to be in keeping with safe prescriptions. Some teratogenic drugs prescribed Not attending antenatal care increased the odds of having a LBW infant by more than two times [OR 2.301; 95% CI (1.526-3.471)]. Mothers not consuming iron supplementation during their pregnancy were more likely to have LBW infants [OR 1.839; 95% CI (1.282-2.363)]. Residing in the Far-western and Eastern region were also significant risk factors for LBW in the pooled dataset and in 2011 survey.	Health facility individuals, couples, households, health facility
MH141											

MH153	Morgan, A., Jimenez Soto, E., Bhandari, G., & Kermode, M. (2014). Provider perspectives on the enabling environment required for skilled birth attendance: a qualitative study in western Nepal. *Tropical Medicine & International Health : TM & IH* , *19* (12), 1457–1465. https://doi.org/10.1111/tmi.12390	Palpa	Qualitative	Skilled birth attendants	22 SBAs; 1 FGD with 10 SBA trainees; 5 KIIs	Maternal health	Provision of maternal healthcare services	Facility level (enabling environment for SBAs)		Participants identified the essential components of an enabling environment as: relevant training; ongoing professional support; adequate infrastructure, equipment and drugs; and timely referral pathways. All SBAs who practised alone felt unable to manage obstetric complications because quality management of life-threatening complications requires the attention of more than one SBA. In Nepal, referral systems require strengthening, and the policy of posting SBAs alone, in remote clinics, needs to be reconsidered to achieve the goal of reducing maternal deaths through timely management of obstetric complications.	Health facility
MH160	Panday, S., Bissell, P., van Teijlingen, E., & Simkhada, P. (2017). The contribution of female community health volunteers (FCHVs) to maternity care in Nepal: a qualitative study. *BMC Health Services Research* , *17* (1), 623. https://doi.org/10.1186/s12913-017-2567-7	Dhading; Sarlahi	Qualitative	FCHVs; health providers	20 FCHVs, 11 health workers and 26 service users were purposefully selected and interviewed using semi-structured topic guides. In addition, four focus group discussions were held with 19 FCHVs	Maternal health	Provision of maternal healthcare services	Variations between hill/terai districts; looking at roles of FCHVs		All study participants acknowledged the contribution of FCHVs in maternity care. All FCHVs reported that they shared key health messages through regularly held mothers' group meetings and referred women for health checks. The main difference between the two study regions was the support available to FCHVs from the local health centres. With regular training and access to medical supplies, FCHVs in the hill villages reported activities such as assisting with childbirth, distributing medicines and administering pregnancy tests. They also reported use of innovative approaches to educate mothers. Such activities were not reported in Terai. In both regions, a lack of monetary incentives was reported as a major challenge for already overburdened volunteers followed by a lack of education for FCHVs.	Community
MH48	Clarke, K., Saville, N., Shrestha, B., Costello, A., King, M., Manandhar, D., … Prost, A. (2014). Predictors of psychological distress among postnatal mothers in rural Nepal: A cross-sectional community-based study. *J Affect Disord* , *156* , 76–86. https://doi.org/10.1016/j.jad.2013.11.018	Dhanusha	Quant	Mothers screened for distress after delivery	9078 mothers who were screened for distress using the 12 item General Health Questionnaire (GHQ-12) around six weeks after delivery	Maternal health	Psychological distress	Food insecurity, multiple births, C-section, perinatal health problems, education, ANC, parity, husband's education, age	N/A	Factors that predicted distress were severe food insecurity (L) 2.21 (95% confidence interval 143, 3.40)), having a multiple birth (2.28 (1.27, 4.10)), caesarean section (1.70 (0.29, 2.24)), perinatal health problems (1.58 (1.23, 2.02)), no schooling (1.37 (1.08, 1.73)), fevver assets (1.33 (1.10, 1.60)), five or more children (1.33 (1.09,1.61)), poor or no antenatal care (1.31 (1.15, 1.48)p <0001), having never had a son (1.31 (1.14, 149)), not staying in the parental home in the postnatal period (1.15 (1.02,1.30)), having a husband with 110 schooling (1.17 (0.96, 1.43)) and lower maternal age (0.99 (0.97, 1.00)). Socioeconomic disadvantage; healthcare-seeking/RH; gender-related factors and social norms linked with maternal distress	Individual; HH
MH44	Cederfeldt, J., Carlsson, J., Begley, C., & Berg, M. (2016). Quality of intra-partum care at a university hospital in Nepal: A prospective cross-sectional survey. *Sexual & Reproductive Healthcare : Official Journal of the Swedish Association of Midwives* , *7* , 52–57. https://doi.org/10.1016/j.srhc.2015.11.004	Nepal	Quant	NGO, government	292	Maternal health	quality of care			The management of care in normal birth could be improved in the studied setting, and there is a need for more research to support such improvement	health facility
MH16	Benson, J., Healy, J., Dijkerman, S., & Andersen, K. (2017). Improving health worker performance of abortion services: an assessment of post-training support to providers in India, Nepal and Nigeria. *Reproductive Health* , *14* (1), 154. https://doi.org/10.1186/s12978-017-0416-0	India, Nepal, Nigeria	Quant	NGO, government	3471	Family planning; maternal health	quality of care for abortions	following training intervention		1. Benson J, Healy J, Dijkerman S, Andersen K. Improving health worker performance of abortion services: an assessment of post-training support to providers in India, Nepal and Nigeria. Reprod Health [Internet]. 2017 Dec 21 [cited 2018 Jul 22];14(1):154. Available from: https://reproductive-health-journal.biomedcentral.com/articles/10.1186/s12978-017-0416-0	health facility
MH82	Karkee, R., Lee, A. H., & Pokharel, P. K. (2014). Women's perception of quality of maternity services: a longitudinal survey in Nepal. *BMC Pregnancy and Childbirth* , *14* , 45. https://doi.org/10.1186/1471-2393-14-45	Kaski	Quantitative	Pregnant women	701	Maternal health	Quality of services	Type of facility (priv vs. public)		Overall, perception of quality differed significantly by types of health facility used for delivery. They rated lowest the supplies and equipment in birth centres and the amenities and interpersonal aspects in the public hospital. Accordingly, attention to these aspects is needed to improve the quality. Mean scores of total quality and sub-scales health facility and health care delivery for women attending private hospital were higher ($p < 0.001$) than those using birth centre or public hospital. Mean score of the sub-scale interpersonal aspects for public hospital users was lower ($p < 0.001$) than those delivered at private hospital and birth centre. However, perception on interpersonal aspects by women using public hospital improved significantly after delivery ($p < 0.001$).	Health facility
MH57	Doane, J., Sherpa, A., Schoenhals, S. E., Lama, L., Bjella, K., Chambers, A., … Levy, D. (2018). BASELINE ASSESSMENT OF MATERNAL-NEONATAL HEALTHCARE QUALITY IN LOKHIM, NEPAL. *JOURNAL OF INVESTIGATIVE MEDICINE* , *66* (1), 187. https://doi.org/10.1136/jim-2017-000663.290	Solukhumbu district	Quantitative	Women giving birth in last 24 months	34	Maternal health	Receipt of maternal health services	Descriptive		74% had birth preparedness plan, most had blood pressure checked, but few had anemia or urinalysis; most were home deliveries (82%); only 9% had all four parts of essential newborn care as per WHO requirements; low receipt o check-up post-birth by health worker	Health facility

MH76	Joshi, C., Torvaldsen, S., Hodgson, R., & Hayen, A. (2014). Factors associated with the use and quality of antenatal care in Nepal: a population-based study using the demographic and health survey data. *BMC Pregnancy and Childbirth* , *14* , 94. https://doi.org/10.1186/1471-2393-14-94		Nepal	Quantitative	Mothers	4,079 mothers	Maternal health	Receiving 4 or more ANC; receiving quality ANC	SD factors; smoking; women's say in DM; husband's work outside of agriculture; media exposure; where getting ANC		Half the women had four or more ANC visits and 85% had at least one visit. Health education, iron supplementation, blood pressure measurement and tetanus toxoid were the more commonly received components of ANC. Older age, higher parity, and higher levels of education and household economic status of the women were predictors of both attendance at four or more visits and receipt of good quality ANC. Women who did not smoke, had a say in decision-making, whose husbands had higher levels of education and were involved in occupations other than agriculture were more likely to attend four or more visits. Other predictors of women's receipt of good quality ANC were receiving their ANC from a skilled provider, in a hospital, living in an urban area and being exposed to general media.	Individual; couple; household; health facility
MH120	Ahmed, S. M., Rawal, L. B., Chowdhury, S. A., Murray, J., Arscott-Mills, S., Jack, S., … Kuruvilla, S. (2016). Cross-country analysis of strategies for achieving progress towards global goals for women's and children's health. *Bulletin of the World Health Organization* , *94* (5), 351–361. https://doi.org/10.2471/BLT.15.168450			Systematic Review	10 low and middle income countries that met MDG's early		Maternal health; child health	reducing maternal and child mortality rates	consistent and coordinated policy and programs		Reducing maternal and child mortality in the 10 fast-track countries can be linked to consistent and coordinated policy and programme inputs across health and other sectors.	societal/structural/political
MH3	MOHP/UNFPA	National	Mixed	WRAs		4277	Maternal Health	RH Morbidities	Age, literacy and CE group		POP prevalence decreased from 10% in 2006 to 6.4% Still very high. Conservative management of POP needs to be prioritized equally to surgical management. • Need for focused strategy to increase awareness and identify women with OF.	Policy/structure
MH124	Lewis, S., Lee, A., & Simkhada, P. (2015). The role of husbands in maternal health and safe childbirth in rural Nepal: a qualitative study. *BMC Pregnancy and Childbirth* , *15* , 162. https://doi.org/10.1186/s12884-015-0599-8	hill villages in the Gorkha district of Nepal.	Qualitative	husbands, wives, pregnant women, mothers in law, health workers	Semi-structured, in-depth interviews were conducted with husbands (n = 17), wives (n = 15), mothers-in-law (n = 3), and health workers (n = 7)		Maternal health; child health	Role of husbands in maternal health	role of husbands in maternity care and safe childbirth, their perceptions of the needs of women and children, factors which influence or discourage their participation, and how women feel about male involvement around childbirth.	Recommendation: factors to be considered when health education for husbands is planned - Male involvement needs to be recognised and addressed in health education due to the potential benefits it may bring to both maternal and child health outcomes.	In rural Nepal, male involvement in maternal health and safe childbirth is complex and related to gradual and evolving changes in attitudes taking place. Traditional beliefs influence male involvement, including the central role of women in the domain of pregnancy and childbirth. Husbands have a role to play in maternity care - they may be the only person available when a woman goes into labour. Considerable interest for the involvement of husbands was expressed by both expectant mothers and fathers but their role is shaped by their availability, cultural beliefs, and traditions. Although complex, expectant fathers do have an important role in maternal health and safe childbirth.	Individuals, couples, households, society
MH64	Godha, D., Gage, A. J., Hotchkiss, D. R., & Cappa, C. (2016). Predicting Maternal Health Care Use by Age at Marriage in Multiple Countries. *The Journal of Adolescent Health : Official Publication of the Society for Adolescent Medicine* , *58* (5), 504–511. https://doi.org/10.1016/j.jadohealth.2016.01.001	Nepal (and other countries)	Quantitative	Pregnant women			Maternal health	service utilization	age of marriage		The results show a negative association between child marriage and maternal health care use in most study countries, and this association is more negative in rural areas and with higher orders of parity. However, the association between age at marriage and maternal health care use is not straightforward but depends on parity and area of residence and varies across countries. The marginal effects in use of delivery care services between women married at age 14 years or younger and those married at age 18 years or older are more than 10% and highly significant in Bangladesh, Burkina Faso, and Nepal.	Couple; societal
MH137	Gopalan, S. S., Das, A., & Howard, N. (2017). Maternal and neonatal service usage and determinants in fragile and conflict-affected situations: a systematic review of Asia and the Middle-East. *BMC Women's Health* , *17* (1), 20. https://doi.org/10.1186/s12905-017-0379-x	Nepal (and other countries)	Lit review	Women; neonatal; policy-makers			Maternal health; neonatal health	Service utilization	Demand and supply side		Systematic lit review, including 2 articles from Nepal. Demand-side determinants of service-usage were transportation, female education, autonomy, health awareness, and ability-to-pay. Supply-side determinants included service availability and quality, existence of community health-workers, costs, and informal payments in health facilities. Evidence is particularly sparse on MNH in acute crises, and remains limited in fragile situations generally.	Individual; household; health facility
MH10	Ghimire PR, AghoKE, Renzaho A, Christou A, Nisha MK, Dibley M, et al. (2017) Socio-economic predictors of stillbirths in Nepal (2001-2011). PLoS ONE 12(7): e0181332.https:// doi.org/10.1371/journal.pone.0181332	Nepal	Quantitative	WRAs having still birth		335	Maternal health	Still birth	ecological zone, occupation, schooling, open defecation		Access to antenatal care services and skilled birth attendants for women in the mountainous and hilly ecological zones of Nepal is needed to further reduce stillbirth and improved services should also focus on women with low levels of education	Policy

MH63	Ghimire, P. R., Agho, K. E., Renzaho, A., Christou, A., Nisha, M. K., Dibley, M., & Raynes-Greenow, C. (2017). Socio-economic predictors of stillbirths in Nepal (2001-2011). *PloS One* , *12* (7), e0181332. https://doi.org/10.1371/journal.pone.0181332	Nepal	Quantitative	Pregnancies at least 28 weeks gestation	18386	Maternal health	stillbirth	Socio-dem; health behaviors		Stillbirth increased significantly among women that lived in the hills ecological zones (aRR 1.38, 95% CI 1.02, 1.87) or in the mountains ecological zones (aRR 1.71, 95% CI 1.10, 2.66). Women with no schooling (aRR 1.72, 95% CI 1.10, 2.69), women with primary education (aRR 1.81, 95% CI 1.11, 2.97); open defecation (aRR 1.48, 95% CI 1.00, 2.18), and those whose major occupation was agriculture (aRR 1.80, 95% CI 1.16, 2.78) are more likely to report higher stillbirth.	Indivdual; Household; community
MH12	Self, J., Haardrfer, R., Stein, A., Pandey, P., Martorell, R., & Girard, A. W. (2015). How Does Homestead Food Production Improve Child Nutrition? Path Analysis of the AAMA Project in Nepal. *FASEB JOURNAL* , *29* (1).	Far west Nepal	Quantitative	Mothers with children 12-48 months	2614	Child health; maternal health	Stunting (height-for-age); maternal and child hemoglobin		HKI AAMA Project	Agricultural inputs had strongest path; some concerns about intervention fidelity mentioned (but it was an abstract…)	Household
MH65	Goyet, S., Tamang, L., Alvarez, V. B., Shrestha, I. D., & Bajracharya, K. (2017, February). Progress and challenges to introduce midwifery education in Nepal. *Lancet (London, England)* . England. https://doi.org/10.1016/S0140-6736(17)30341-0	Nepal	Comment	Health workforce	N/A	Maternal health	Training of midwives			Positive commentary on progress of training midwives to be SBA	Health facility
MH21	Malarcher, S., & Polis, C. B. (2014). Using measurements of unmet need to inform program investments for health service integration. *Studies in Family Planning* , *45* (2), 263–275. https://doi.org/10.1111/j.1728-4465.2014.00388.x	Nepal, Senegal and Uganda	Secondary analysis of DHS data (2010 or later)	married or cohabitating women of reproductive age	DHS national level household surveys	Family planning; reproductive health; maternal health	unmet need for contraception or FP		N/A	There might be missed opportunities to reach MWRA with unmet FP needs through integrated services such as prenatal care, postnatal checkups, vaccination appointments, etc.	individual, couple, houshold, health facility
MH166	Paudel, Y. R., Jha, T., & Mehata, S. (2017). Timing of First Antenatal Care (ANC) and Inequalities in Early Initiation of ANC in Nepal. *Frontiers in Public Health* , *5* , 242. https://doi.org/10.3389/fpubh.2017.00242	National (DHS)	Quantitative	4,148 women who had a live birth during 5 years preceding the survey	4,148 women who had a live birth during 5 years preceding the survey	Maternal health	Use of ANC - timing	Education, wealth, caste, pregnancy wantedness		Overall, 70% of the women had started their first ANC at 4 month or earlier. Among participants who had never attended school, just more than half (52%) received first ANC at 4 months or earlier, while majority of participants (97%) who had received higher education received first ANC at recommended time. Similarly, 89% of those from richest quintile and 48% of those from poorest quintile received first ANC at recommended time. In adjusted analysis, women from richest wealth quintile were significantly more likely to initiate ANC early (AOR: 3.74, 95% CI: 2.31-6.05) compared to the poorest. Similarly, women with higher level education were significantly more likely (AOR: 11.40, 95% CI: 5.05-25.73) to initiate ANC early compared to women who had never attended school. A significantly lower odds of early ANC take up was observed among madhesi other caste (AOR: 0.56, 95% CI: 0.35-0.90) compared to brahmin/chhetri women. Women whose pregnancy was unwanted were significantly less likely to attend first ANC at 4 months or early (AOR: 0.73, 95% CI: 0.58-0.93) in comparison to women whose pregnancy was wanted. CONCLUSION: The differences in the recommended timing of initiation of ANC were evident among women with different educational, economic levels, and caste/ethnic groups. Rural women were less likely to have checkups as per guidelines. The findings suggest to a need of interventions to raise female education and improve economic status of households. Targeted interventions suitable to local context and culture are equally important. Increasing access to	Household; individual
MH155	Morrison, J., Jacoby, C., Ghimire, S., & Oyloe, P. (2015). What affects Clean Delivery Kit utilization at birth in Nepal? A qualitative study. *Asia-Pacific Journal of Public Health* , *27* (2), NP1263-72. https://doi.org/10.1177/1010539512458950	6 districts	Qualtative	Clean delivery kit users and non-users; health providers; birth attendants; household Dmers; central level personnel	18 FGDs; 40 interviews	Maternal health; neonatal health	Use of clean delivery kit	Awareness; availability		CDK users were aware of its benefits, and utilization was largely compatible with birth practices. Utilization was prevented by lack of awareness about the benefits and lack of availability. Participants believed that CDKs were for home use. CONCLUSION: Poor promotion of CDK is related to the disjuncture of promoting CDK use, while encouraging institutional deliveries. If CDKs are made available and marketed for use in households and health institutions, utilization may increase.	Individual; health facility
MH71	Hotchkiss, D. R., Godha, D., & Do, M. (2014). Expansion in the private sector provision of institutional delivery services and horizontal equity: evidence from Nepal and Bangladesh. *Health Policy and Planning* , *29 Suppl 1* , i12-9. https://doi.org/10.1093/heapol/czt062	Nepal and Bangladesh	Quantitative	Pregnant women		Maternal health	Use of maternal health services	expansion of private sector		The results of the study suggest that the expansion of private sector supply of institutional-based delivery services in Nepal and Bangladesh has not led to increased horizontal inequity. In fact, in both countries, inequity was shown to have decreased over the study period. The study findings also suggest that the provision of government delivery services to the poor protects against increased wealth-related inequity in service use.	Community; Health facility
MH88	Kozuki, N., Katz, J., Khatry, S. K., Tielsch, J. M., LeClerq, S. C., & Mullany, L. C. (2016). Community survey on awareness and use of obstetric ultrasonography in rural Sarlahi District, Nepal. *International Journal of Gynaecology and Obstetrics: The Official Organ of the International Federation of Gynaecology and Obstetrics* , *134* (2), 126–130. https://doi.org/10.1016/j.ijgo.2016.01.015	rural Sarlahi District, Nepal	Quantitative	pregnant women and their husbands	6182 women	Maternal health	Use of ultrasonography during pregnancy	reproductive health, socioeconomic, and other characteristics that increased the likelihood of undergoing an obstetric ultrasonographic examination.	none mentioned	Utilization of obstetric ultrasonography in rural Nepal was very limited. Odds of receiving an ultrasonographic examination were higher among women with post-secondary education than among those with none; for those whose husbands had post secondary education than those with none; and odds were lower among women younger than 18years than among those aged 18-34years.	individuals, couples, facility

MH127	Singh, J. K., Kadel, R., Acharya, D., Lombard, D., Khanal, S., & Singh, S. P. (2018). "MATRI-SUMAN" a capacity building and text messaging intervention to enhance maternal and child health service utilization among pregnant women from rural Nepal: study protocol for a cluster randomised controlled trial. *BMC Health Services Research* , *18* (1), 447. https://doi.org/10.1186/s12913-018-3223-6		Dhanusha	Quantitative	pregnant women	66,000	Maternal health; child health	utilisation of MCH services.	promotion of health seeking behaviour	NA	Capacity development of health volunteers and text messaging to pregnant women through mobile phones have shown improved maternal and child health (MCH) outcomes and is associated with increased utilisation of MCH services. However, such interventions are uncommon in Nepal. We aim to carry out an intervention with the hypothesis that capacity building and text messaging intervention will increase the MCH service utilisation.	Societal/structural
MH34	Adhikari, R. (2016). Effect of Women's autonomy on maternal health service utilization in Nepal: a cross sectional study. *BMC Women's Health* , *16* , 26. https://doi.org/10.1186/s12905-016-0305-7		Nepal	Quant	Women	4,148	Maternal health	utilizing health services	woman autonomy		"This study found that many socio-demographic variables such as age of women, number of children born, level of education, ethnicity, place of residence and wealth index are predicators of utilizing the maternal health services of recent child. Notably, higher level autonomy was associated with higher use of maternal health services [adjusted odds ratio (aOR) =1.40; CI 1.18–1.65"	household, societal
MH43	Bhandari, T. R., Sarma, P. S., & Kutty, V. R. (2015). Utilization of maternal health care services in post-conflict Nepal. *International Journal of Women's Health* , *7* , 783–790. https://doi.org/10.2147/IJWH.S90556		Nepal	Quant	NGO, government	10,793 women in NDHS 2006 and 13,485 women in NDHS	Maternal health	utilizing maternal health services	conflict in Nepal		The utilization of maternal health care services tended to increase continuously during both the armed conflict and the post-conflict period in Nepal	individual, household, societal/structural/political
MH38	Arguello, M. A., Schulze, K. J., Wu, L. S., Dreyfuss, M. L., Khatry, S. K., Christian, P., & West, K. P. (2015). Circulating IGF-1 may mediate improvements in haemoglobin associated with vitamin A status during pregnancy in rural Nepalese women. *Asia Pacific Journal of Clinical Nutrition* , *24* (1), 128–137.		Nepal - rural areas	Quant	NGO, government	1186	Maternal health	Vit A levels	IGF-1, and Hb		"Increasing IGF-1 was likely one mechanism by which retinol improved circulating Hb in pregnant women of rural Nepal,"	health facility, societal/structural/policy
MH35	Aihara, Y., Shrestha, S., & Sharma, J. (2016). Household water insecurity, depression and quality of life among postnatal women living in urban Nepal. *JOURNAL OF WATER AND HEALTH* , *14* (2), 317–324. https://doi.org/10.2166/wh.2015.166		Urban Nepal	Quant	postnatal women living in urban Nepal	267	Maternal health	water insecurity, depression, and quality of life	levels of stress from water insecurity		Multiple regression models showed that women with high levels of stress derived from household water insecurity had greater odds of probable depression and lower physical HRQOL scores than did women with low HWIS scores.	community, household, individual

MH66	Gram, L., Skordis-Worrall, J., Manandhar, D. S., Strachan, D., Morrison, J., Saville, N., … Heys, M. (2018). The long-term impact of community mobilisation through participatory women's groups on women's agency in the household: A follow-up study to the Makwanpur trial. *PLOS ONE* , *13* (5). https://doi.org/10.1371/journal.pone.0197426	Makwanpur district	Quantitative	Mothers participating in a community randomized trial in 2001-3 who were recruited for follow-up in 2014	4030	Maternal health	Women's agency	Participation in a PLA intervention	PLA women's groups	In original trial: At the end of the trial, a 30% reduction in neonatal mortality and a 78% reduction in maternal mortality was observed in deliveries occurring in intervention compared to control clusters Found no association between participation and agency at long-term follow-up. Suggest that agency may be a pre-req not a consequence	Individual/Couple/household
MH22	Thapa, S. B., & Acharya, G. (2017). Women's health is not in focus in disaster zones: lessons from the Nepal earthquake. *JOURNAL OF FAMILY PLANNING AND REPRODUCTIVE HEALTH CARE* , *43* (2), 92–93. https://doi.org/10.1136/jfprhc-2016-101605	Nepal	Commentary	Women		Family planning; reproductive health; maternal health				Earthquake exacerbated health challenges for women; issues with access and existing vulnerabilities were worsened	Individual; community; societal
MH32	Adams, V., Craig, S., Samen, A., & Bhatta, S. (2016). It Takes More than a Village: Building a Network of Safety in Nepal's Mountain Communities. *Maternal and Child Health Journal* , *20* (12), 2424–2430. https://doi.org/10.1007/s10995-016-1993-1	Nepal - mountain communities	Theory / Description	NGO's working in MCH		Maternal health				"This report describes and analyzes successful efforts to reduce maternal and infant mortality in a culturally astute, durable, and integratedway,aswellasexamplesofinnovationand success experienced by enacting the network of safety model"	Community, Individual
MH74	John, A. (2015). Towards midwifery education and regulation in Nepal. *The Practising Midwife* , *18* (8), 24–26.	Nepal	Commentary	Midwives; policymakers		Maternal health				midwifery education, regulation, and professional associations are important for workforce strength in Nepal	Health facility
MH121	Dangal, G., & Bhandari, T. R. (2016). Updates on maternal and child health. *Kathmandu University Medical Journal* , *14* (54), 94–95.	National	Editorial			Maternal health; child health				Reductions in MMR; birth attendance by SBA increased; challenges in access to reproductive healthcare; improvements in reducing child mortality and improving measles immunization; reducing neonatal deaths a continued challenge calls to improve targets to be more inclusive of hardest to reach populations - sex, age, ethnicity, disability, geographic location	Societal
MH126	Samuels, F., Amaya, A. B., & Balabanova, D. (2017). Drivers of health system strengthening: Learning from implementation of maternal and child health programmes in Mozambique, Nepal and Rwanda. Health Policy and Planning, 32(7), 1015–1031. https://doi.org/10.1093/heapol/czx037	Nepal	Case study; literature review	Policy makers, donors and stakeholders - related to maternal and child health	N/A	Maternal health; child health				At the macro level, governance with effective and committed leaders was found to be vital for achieving positive health outcomes. This was underpinned by clear commitment from donors coupled by a significant increase in funding to the health sector. At the meso level, where policies are operationalized, inter-sectoral partnerships as well as decentralization and task-shifting emerged as critical. At micro (service interface) level, community-centred models and accessible and appropriately trained and incentivized local health providers play a central role in all study countries.	Societal/structural and policy; health facility;
MH138	Haver, J., Brieger, W., Zoungrana, J., Ansari, N., & Kagoma, J. (2015). Experiences engaging community health workers to provide maternal and newborn health services: Implementation of four programs. *International Journal of Gynecology and Obstetrics* , *130* (S2), S32–S39. https://doi.org/10.1016/j.ijgo.2015.03.006	Nepal and other countries	Case study	CHWs/program implementers		Maternal health; neonatal health				CHW interventions complementary to facility-based interventions; tasks in delivery of health promotion information and distribution of commodities were transitioned to CHWs to reach underserved populations. In Nepal, trained FCHVs on additional things (FCHVs received an additional seven days of training focused on the intervention, which involved identifying pregnant women in their catchment area, providing prenatal counseling, and distributing misoprostol to women who were eight months pregnant for self-administration at home births.) Results showed that of the 840 post-intervention survey respondents, 73.2% received misoprostol, and uterotonic coverage increased from 11.6% before the intervention to 74.2% after the intervention [44]. The most extensive improvements in uterotonic coverage were observed in the two lowest wealth strata. This successful pilot program added to the increasing body of evidence demonstrating that trained CHWs could effectively deliver misoprostol for self-	Health facility

Khanal, V., Karkee, R., Lee, A. H., & Binns, C. W. (2016). Adverse obstetric symptoms and rural-urban difference in cesarean delivery in Rupandehi district, Western Nepal: a cohort study. *REPRODUCTIVE HEALTH , 13* . https://doi.org/10.1186/s12978-016-0128-x	Rupandehi district, Western Nepal	Quantitative: A community-based cohort study	Postpartum mothers	735 mothers within one month postpartum	Maternal health; neonatal health	obstetric complications and rural-urban difference in cesarean delivery rate in Western Nepal.	none	About one in five mothers reported some adverse obstetric symptoms. Obstetric problems were more common in the rural areas, whereas cesarean delivery rate was much higher in the urban areas.

Health behavior of interest: SBA							
Socio-ecological level	**Reference number**	**Factor shown to be significantly associated with SBA**	**Location of study (specific district, region, or nationally)**	**Population where association found**	**Who not using services? Reasons not using services? Preferences for services? Trust in services?**	**How do culture, values, and norms influence health service utilization?**	**What SBC interventions really change behaviors**
Individual							
	MH162	Education, parity	National	Women giving birth	Socio-dem		

Health behavior of interest: SBA							
Socio-ecological level	**Reference number**	**Factor shown to be significantly associated with SBA**	**Location of study (specific district, region, or nationally)**	**Population where association found**	**Who not using services? Reasons not using services? Preferences for services? Trust in services?**	**How do culture, values, and norms influence health service utilization?**	**What SBC interventions really change behaviors**
Couple							
	MH162	Husband's occupation; GBV (only after controlling for HC access factors, not SD factors)	National	Women giving birth	Spousal characteristics	GBV associated once control for HC factors, but not once control for SD factors	

Health behavior of interest: SBA							
Socio-ecological level	**Reference number**	**Factor shown to be significantly associated with SBA**	**Location of study (specific district, region, or nationally)**	**Population where association found**	**Who not using services? Reasons not using services? Preferences for services? Trust in services?**	**How do culture, values, and norms influence health service utilization?**	**What SBC interventions really change behaviors**
Family or household							
	MH83	Women's autonomy in decision-making (healthcare, visiting friends or relatives, household purchases and spending earned money)	National	Women giving birth	Autonomy in decision-making		
	MH146	Community-level intervention (addressing family support)	Bajhang, Dailekh and Kanchanpur	Women giving birth	Family support		five-component intervention that addressed previously identified barriers to SBA services in mid- and worked with existing community groups and funds Family support; Financial assistance; Transport; Women-friendly environment at health facilities; SBA security
	MH162	Wealth	National	Women giving birth	Economic factors		

Health behavior of interest: SBA							
Socio-ecological level	**Reference number**	**Factor shown to be significantly associated with SBA**	**Location of study (specific district, region, or nationally)**	**Population where association found**	**Who not using services? Reasons not using services? Preferences for services? Trust in services?**	**How do culture, values, and norms influence health service utilization?**	**What SBC interventions really change behaviors**
Community							
	MH167	Road infrastructure	National	Women giving birth	Infrastructure		
	MH146	Community-level intervention (addressing family support; financial assistance; transport; women-friendly environment in health clinics, and SBA security)	Bajhang, Dailekh and Kanchanpur	Women giving birth	Transportation; safety		five-component intervention that addressed previously identified barriers to SBA services in mid- and worked with existing community groups and funds Family support; Financial assistance; Transport; Women-friendly environment at health facilities;
	MH164	community-based newborn care package (CBNCP)	National	Women giving birth	NOT SIGNIFICANT IMPACT		
	MH107	community-based health promotion intervention	Near Kathmandu	Women giving birth	NOT SIGNIFICANT IMPACT		

Health behavior of interest: SBA							
Socio-ecological level	**Reference number**	**Factor shown to be significantly associated with SBA**	**Location of study (specific district, region, or nationally)**	**Population where association found**	**Who not using services? Reasons not using services? Preferences for services? Trust in services?**	**How do culture, values, and norms influence health service utilization?**	**What SBC interventions really change behaviors**
Health facility or health system							
	MH146	Community-level intervention (addressing women-friendly environment in health clinics)	Bajhang, Dailekh and Kanchanpur	Women giving birth	Provider-level		five-component intervention that addressed previously identified barriers to SBA services in mid- and worked with existing community groups and funds Family support; Financial assistance; Transport; Women-friendly environment at health facilities;
	MH153	training; professional support; adequate infrastructure, equipment and drugs; and timely referral pathways; practicing alone in remote clinics	Palpa	SBAs	Provider-level; Availability; Policy		

Health behavior of interest: SBA							
Socio-ecological level	Reference number	Factor shown to be significantly associated with SBA	Location of study (specific district, region, or nationally)	Population where association found	Who not using services? Reasons not using services? Preferences for services? Trust in services?	How do culture, values, and norms influence health service utilization?	What SBC interventions really change behaviors
Societal, policy, structural, or environmental							
	MH142	Free birth delivery programme (short term, but not long term)	National	Women giving birth	Policy		free birth delivery programme
	MH167	Cash incentive	National	Women giving birth	Policy		User-fee exemption not any better than a cash incentive only, unless somewhere where road infrastructure was good.

Number	Title of publication	Geographical location(s)	Study type: Qualitative, quantitative, or mixed methods	Primary audience(s) or populations of interest	Sample sizes	Primary health areas of interest: Family planning and reproductive health; maternal health; neonatal health; child health; adolescent health; nutrition	Specific health behaviors	Primary predictors or explanatory variables of interest	Specific SBCC intervention component discussed/described (if any)	Major finding (Summarized in 1 sentence only)	Relevant level(s) of the socio-ecological model: individual, couple, household, community, health facility, or societal/structural/policy
MH7	Peer reviewed publication	Nepal	Quantitative	WRAs	4,036	Maternal Health	Institutional delivery	education, wealth, urban status, first birth, the number of antenatal care visits, and exposure to news media		The knowledge of the SDIP was associated with nearly three-fold increase in institutional delivery. Nearly 90% of the women who had delivered in the past five years knew about the SDIP.	Individual; household; community
MH9	Peer reviewed publication	Nepal	Quantitative	ever-married young women (15–24 years of age) who had had at least one birth in the 5 years	1662	Maternal health	Institutional delivery	decision-making autonomy, accessibility		inequality exists in the use of institutional delivery among young married women in Nepal. Several factors were associated with and influenced young women's use of institutional delivery. Among all factors, receipt of an adequate number (at least four) of ANC visits had a strong and positive association with the use of institutional delivery.	Individual; family; health facility
MH11	Peer reviewed publication	Nepal	Quantitative	Teenage mothers	381	Maternal health	Institutional delivery	Place of residence, occupation, socioeconomic status, and frequency of ANC visits		While the association of most of the background characteristics with institutional delivery was uniform for both teenage and non-teenage mothers, the association with educational status, parity, birth preparedness and women autonomy was significant only for non-	Individual; household; community
MH45		Duwakot Health Demographic Surveillance Site	Quant	who delivered baby in past	434 women delivering baby in past	Maternal health	Institutional delivery	ANC; use of transport to reach facility;	N/A	bus, taxi, motorcycle) to reach a health facility were more likely to access institutional delivery.	Health facility

MH49		National - in demographic surveillance sites in Bangladesh, Nepal, and India	Quant	Pregnant women	52750 deliveries	Maternal health	Institutional delivery	household asset index, maternal schooling, maternal age, and parity	N/A	Institutional delivery increased with wealth and education; In Bangladesh and urban India, the proportion of deliveries in the private sector increased with wealth, maternal education, and age. The opposite was observed in rural India and Nepal.	Individual; household
MH50		Eastern Nepal - Sunsari	Quant	Women delivering in last year	372 women	Maternal health	ANC	media, ethnicity, women's autonomy; wealth; knowledge	N/a	The study revealed that women exposed to media had higher chance of receiving four or more ANC visits with an adjusted odds ratio (aOR = 3.5, 95% CI: 1.2-10.1) in comparison to women who did not. Women from an advantaged ethnic group had more chance of having 4ANC visits than respondents from a disadvantaged ethnic group (aOR = 2.4, 95% CI: 2.1-6.9). Similarly, women having a higher level of autonomy were nearly three times more likely (aOR = 2.9, 95% CI: 1.5-5.6) and richer women were twice (aOR = 2.3, 95% CI: 1.1-5.3) as likely to have at least 4ANC visits compared to women who had a lower level of autonomy and were economically poor. CONCLUSION: Being from disadvantaged ethnicity, lower women's autonomy, poor knowledge of maternal health service and incentive upon completion of ANC, less media exposure related to maternal health service, and lower wealth rank were significantly associated with fewer than the recommended 4ANC visits. Thus, maternal health programs need to address such socio-cultural barriers for effective health care utilization.	Individual; household
MH55		Jhorahat VDC, Morang district, Nepal	Mixed methods	Mothers	93 mothers; 2 FGDs with decision-makers and FCHVs;	Maternal health	Institutional delivery	Socio-demographic factors; ease/convenience; safety		Ease/convenience associated with home delivery; safety associated with institutional delivery; "there was a significant association between caste, education of mothers, education of spouse, occupation of spouse, per capita income, time to reach the nearest health center, parity, previous place of delivery, number of antenatal visit, knowledge about place of delivery, planned place of delivery, and place of delivery."	Individual; couple; household; health facility
MH56		National (DHS) - compares across south asia	Quantitative	Women having given birth		Maternal health	Institutional delivery	ANC visits (timing and # of visits; specific ANC procedures received)		Stronger association between specific ANC procedures received and institutional delivery than between timing/# of visits and institutional delivery (Across settings)	Individual
MH58		National (DHS)	Quantitative	Individuals having institutional deliveries		Maternal health	Institutional delivery	Incentive programs (financing initiatives)		The beneficial impact of maternal financing policies in Nepal is skewed towards areas and households that are geographically more accessible and wealthy.	Policy

MH61		Kailali district	Quantitative	Mothers giving birth in past 5 years	500	Maternal health	Institutional delivery	Socio-dem factors; health status; ANC visits;		Primiparity, having a secondary or higher education level, living in the Durgauli village, having husbands with occupations other than agriculture or professional/technical jobs, and having attended four or more antenatal care (ANC) visits had significantly increased use of institutional deliveries. Also, belonging to the richest 20% of the community and having experienced pregnancy complications were marginally significantly associated.	Individual; couple; community
MH70		Nepal	Quantitative	Community level		Maternal health	Institutional delivery	Factors that influence health behaviors; distance to facilities; mother's birth history		The mean coverage of facility-based deliveries was 18.6 and 36.3 % in the mountains region and the rest of Nepal, respectively. Between 54.8 and 74.1 % of the regional coverage gap was explained by differences in observed characteristics. Factors influencing health behaviours (proxied by mothers' education, TV viewership and tobacco use, and household wealth) and subjective distance to the health facility were the major factors, contributing between 52.9 and 62.5 % of the disparity. Mothers' birth history was also noteworthy.	Individual; community; health facility
MH73		Nepal and other countries	Quantitative	Women in DHS (and HH data)	Varies	Maternal health	Institutional delivery	Horizontal ineqiuities		The decomposition analysis revealed that facility delivery is driven mostly by the social determinants of health rather than the individual health risk. Household socioeconomic condition, parental education, place of residence and parity emerged as the most important factors.	Individual; household; community
MH75		Nepal and other countries	Quantitative	Women	Varies	Maternal health	Institutional delivery	Absolute income vs. wealth		Information on income allowed identification of countries - such as Burkina Faso, Cambodia, Egypt, Nepal and Rwanda - which were well above what would be expected solely from changes in income. Conclusion: Absolute income is a better predictor of SBA and institutional delivery coverage than the relative measure of quintiles of wealth index and may help identify countries where increased coverage is likely due to interventions other than increased income.	household
MH77		Mugu	Quantitative	Mothers	275	Maternal health	Institutional delivery	Access; media; parity; preferences; perceived quality of care		Multivariate logistic regression analysis showed that women who resided within 1 h distance from the birthing centre, had adequate mass media exposure or had only one child were more likely to deliver in hospital. Reasons for non-institutional delivery (n = 178) were related to geographical access (49%), personal preferences (18%) and perceived poor quality care (4%). Mothers who accessed institutional delivery (n = 97) also reported difficulties related to travel (60%), costs (28%), dysfunctional health system (18%) and unfriendly attitudes of the health-care providers (7%).	Individual; household; health facility

MH79		central hills district of Nepal	Quantitative	Pregnant women with more than 5 mo gestation	701	Maternal health	Institutional delivery	Knowledge of obstetrics; Birth Preparedness and Complication Readiness program;	Birth Preparedness and Complication Readiness program	In particular, women who acknowledged that unexpected problems could occur during pregnancy and childbirth were more likely (odds ratio [OR] 5.83, 95% confidence interval [CI] 2.95-11.52) to deliver at a health facility than others unaware of the possible consequences. Similarly, women who knew any antepartum danger sign (OR 2.16, 95% CI: 1.17-3.98), any intrapartum danger sign (OR 3.80, 95% CI: 2.07-6.96) and any postpartum danger sign (OR 3.47 95% CI: 1.93-6.25), tended to deliver at a health facility.	Individual
MH80		Kaski	Quantitative	pregnant women of 5 months or more gestation recruited from the community had access to local birth centres.	353	Maternal health	Place of delivery (bypassing birth centers)	Wealth; parity; complications; availability		Bypassers tended to be wealthy and have intrapartum complications, but the likelihood of bypassing apparently decreased by higher parity and frequent (four or more) antenatal care visits. Availability of operating facility, adequacy of medical supplies and equipment and competent health staff at the facility were the main reasons for their bypassing decision.	Individual; household; health facility
MH81		Nepal	Quantitative	Subset of ever-married women	4079	Maternal health	Institutional delivery	antenatal care visits and birth preparedness activities;		low ANC; low facility delivery; low birth prep activities After adjusting for external, predisposing and enabling factors, women who made more than four antenatal care visits were five times more likely to deliver at a health facility when compared to those who paid no visit (adjusted OR 4.94, 95% CI 3.14 to 7.76). Similarly, the likelihood for facility delivery increased by 3.4-fold among women who prepared for at least two of the four activities compared to their counterparts who made no preparation (adjusted OR 3.41, 95% CI 2.01 to 5.58).	Individual

MH86	Barriers to utilization of childbirth services of a rural birthing center in Nepal: A qualitative study.	rural community of Rukum district, Nepal	Qualitative study	Pregnant women, their families, health workers at birthing centers	26 in-depth interviews with service users and providers, and three focus group discussions with community key informants in a rural community of Rukum district. The Adithya Cattamanchi logic model was used as a guiding framework for data analysis.	Maternal health	Institutional delivery	Quality of services, human resources, governance, health system challenges, geography, birth preparedness, cultural practices and traditions	Recommendation: awareness-raising activities, local resource mobilization, ensuring access to skilled providers and equipment and other long-term infrastructure development works could improve the quality and utilization of childbirth services in the rural birthing center.	Women did not use the services at rural birthing centers because of systematic and contextual barriers. Irregular and poor quality services, inadequate human and capital resources, and poor governance were health system challenges which prevented service delivery. Contextual barriers including difficult geography, poor birth preparedness practices, harmful culture practices and traditions and low level of trust were also found to contribute to underutilization of the birthing center.	Health facility; community; societal
MH98		Achham	Quantitative and qualitative	Postpartum women	2 groups - 77 and 133	Maternal health	Institutional delivery	Implementation of comprehensive emergency obstetric care; beliefs about safety; preferences; income		Institutional birth rates increased after comprehensive emergency obstetric care implementation (from 30 to 77%, OR 7.7) at both hospital (OR 2.5) and low-level facilities (OR 4.6, p < 0.01 for all). The logistic regression indicated that comprehensive emergency obstetric care availability (OR 5.6), belief that the hospital is the safest birth location (OR 44.8), safety prioritization in decision-making (OR 7.7), and higher income (OR 1.1) predict institutional birth (p </= 0.01 for all). Qualitative analysis revealed comprehensive emergency obstetric care awareness, increased social expectation for institutional birth, and birth planning as important factors.	Individual; household; health facility; societal
MH99		Accham	Quantitative and qualitative	Postpartum women		Maternal health	Institutional delivery	Age, income, land ownership ; beliefs (safety, distance)		The institutional birth rate for the hospital's catchment area population was calculated to be 0.30 (54 home births, 23 facility births). Institutional birth was more likely as age decreased (ORs in the range of 0.20-0.28) and as income increased (ORs in the range of 1.38-1.45). Institutional birth among women who owned land was less likely (OR = 0.82 [0.71, 0.92]). Ninety percent of participants in the institutional birth group identified safety and good care as the most important factors determining location of birth, whereas 60 % of participants in the home birth group reported distance from hospital as a key determinant of location of birth. Qualitative analysis elucidated the importance of social support, financial resources, birth planning, awareness of services, perception of safety, and referral capacity in achieving an institutional birth. most said hospital safest, even if they didn't go	Individual; household; health facility

MH104	Factors affecting institutional delivery in rural Chitwan district of Nepal: a community-based cross-sectional study.	Chitwan, Nepal	Qualitative			Maternal health	Institutional delivery			With multiple incentives present, the decision to deliver in a health facility is affected by a complex interplay of socio-demographic, socio-cultural, and health service-related factors	Policy/structure
MH105	Barriers and facilitators to institutional delivery in rural areas of Chitwan district, Nepal: a qualitative study	Nepal	Mixed	MWRAs, husband, CHW, HWs	-	Maternal health	Institutional delivery	access, decisions and support		Despite much progress in recent years, this study revealed some important barriers to the utilization of health services; while suggesting that a combination of upgrading birthing centres and strengthening the competencies of health personnel while embracing and addressing deeply rooted family values and traditions can improve existing programmes and further increase institutional delivery rates.	family; facility
MH111	An Analysis of Factors Linked to the Decline in Maternal Mortality in Nepal	National (NDHS 96, 01, 06 & 11)	Quantitative	MWRAs	18,130	Maternal health	Institutional delivery; ANC	SBA, Access, age, education and CE group	NA	There was a significant increase from 72.5% to 83.5% in the proportion of women delivering between the ages of 20–30 years, with fewer women delivering at high risk ages (,20 and $35 years). Fertility dropped gradually significantly, proportion of women having attended at least secondary school increased nearly four-fold from 9.7% to 36.0%	Structural/policy
MH118	Contribution of Nepal's Free Delivery Care Policies in Improving Utilisation of Maternal Health Services		Quant	NGO, government	16 837 births	Maternal health, neonatal health	Institutional delivery; ANC	Nepal Free Delivery Care Policies		Results from this study suggest that MIS and Aama policies have had a strong positive influence on the utilisation of 4 ANC visits and institutional deliveries in Nepa	Policy

MH119	Paternal Factors and Inequity Associated with Access to Maternal Health Care Service Utilization in Nepal: A Community Based Cross-Sectional Study	Nepal	Quant	NGO, government	2200	Maternal health, neonatal health	Institutional delivery; ANC			Results from this study suggest that MIS and Aama policies have had a strong positive influence on the utilisation of 4 ANC visits and institutional deliveries in NepaPaternal factors like age, household wealth, number of children, ethnicity, education, knowl- edge of danger sign during pregnancy, and husband's decision making for seeking mater- nal and child health care are crucial factors associated to maternal health service utilization. Results from this study suggest that MIS and Aama policies have had a strong positive influence on the utilisation of 4 ANC visits and institutional deliveries in Nepa"	couple, household, community, health facility
MH150	Effects of women's groups practising participatory learning and action on preventive and care-seeking behaviours to reduce neonatal mortality: A meta-analysis of cluster-randomised trials	India, Bangladesh, Nepal, Malawi	Qualitative	Woman's group	Ranging between 6,125 and 29,901 live births	Neonatal health; maternal health	ANC; home care behaviors			Women's groups practising PLA improve key behaviours on the pathway to neonatal mortality, with the strongest evidence for home care behaviours and practices during home deliveries.	Individual; household
MH114	Ecological and socio-demographic differences in maternal care services in Nepa	National	Quantitative	MWRAs (given birth within last 3 years)	7069	Maternal health	ANC, Safe delivery	Exposure to public messaging	Socio-economic status	socio-economic and demographic factors associated with ANC and safe delivery services across the three ecological zones in Nepal	Household; community
MH107	Measuring What Works: An Impact Evaluation of Women's Groups on Maternal Health Uptake in Rural Nepal				1,236	Maternal health	Institutional delivery; Antenatal care; Skilled birth attendant; Postnatal care	education, age and parity	community-based health promotion intervention	Health promotion intervention had a positive effect on the uptake of ANC (attending at least once), iron/folic acid intake and PNC, but not on institutional delivery.	Individual

MH123	Sustaining progress in maternal and child health in Nepal.					Maternal health; child health	Institutional delivery; Breastfeeding; Immunization	Earthquake	N/A	Correspondence highlighting importance of earthquake on influencing health servies and need to invest to ensure that women and children's access to services (maternal, immunization) are not affeted	Health facility; environmental
MH122	Utilization of maternal and child health services in western rural Nepal: a cross-sectional community-based study.	Kapilvastu District of Nepal.	Quantitative - cross sectional survey	Mothers of children under 2 years	190 mothers having children of aged 12-23 months	Maternal health; child health	Institutional delivery; factors associated with utilization of maternal and child health services	Mothers's education, caste/community, geographical location, home or facility-based delivery	None decribed	The immunization program coverage was high, whereas maternal health service utilization remained poor; initiation of breastfeeding within an hour of birth was low (45.3%) and 63.2% had practiced exclusive breastfeeding; 69.5% of respondents delivered their child at home and 39.5% sought assistance from health workers; mothers who did not have any education, mothers from Dalit/Janjati and the Terai origin were less likely to deliver at the health facility and to seek the assistance of health workers during childbirth.	Individual, family, household level
MH97		Accham	Quantitatie	Pregnancies in the distrit during a period of time	541 at follow-up	Maternal health	Institutional delivery; Use of services - 4 ANC; institutional birth rate; PPFP	delivery of care via public-private partnership	Public-private partnership	we found an improvement in population-level indicators linked to reducing maternal and infant mortality: receipt of four antenatal care visits (83 percent to 90 percent), institutional birth rate (81 percent to 93 percent), and the prevalence of postpartum contraception (19 percent to 47 percent). The intervention cost $3.40 per capita (at the population level) and $185 total per pregnant woman who received services.	Health facility

MH142	Impact evaluation of free delivery care on maternal health service utilisation and neonatal health in Nepal.	national level - Nepal	Secondary anaylsis of data	pregnant women, families, policy makers	4457 live-births reported between 2001 and 2008 from Nepal Demographic and Health Surveys for 2006 and 2011.	Maternal health; neonatal health	Intitutional delivery; SBA	Impact of free birth delivery programme on place of delivery, the presence of skilled birth attendants (SBAs) and neonatal mortality	none	Nepal introduced free delivery services for births in public facilities in 2005 in 25 districts with the intervention initially restricted to women with less than two living children and/or women with obstetric complications. After November 2007, eligibility conditions were relaxed to include all women, and the programme was later expanded to cover an additional 50 districts in December 2008. Programme effects on use of public facilities for births and deliveries attended by SBAs were not sustained over a longer exposure period. The results on neonatal mortality persisted with longer programme exposure, although the effects were smaller in magnitude.	policy makers, health facilities
MH37	Marital status and abortion among young women in Rupandehi, Nepal	Rupandehi, Nepal	Quant	NGO, government	600	Maternal health	Abortion	marital status		"Findings highlight the need for providing sexual and reproductive health care information and services to young women regardless of marital status"	societal/structural/political
MH113	Barriers and facilitators to the quality use of essential medicines for maternal health in low–resource countries: An Ishikawa framework	Mongolia, Nepal, Laos, DPRK, the Philippines, Vanuatu, the Solomon Island	Quantitative	MWRAs	7 reports	Maternal health	access to and use of essential medicines			The diagram highlighted the complexity between and within each health–system level that must function to ensure the availability, access, and appropriate use of medicines. The specific facilitators and barriers identified should guide the development of tailored intervention programs to improve and expand the use of these life–saving medicines.	Policy/structure

MH92	Reproductive health care and family planning among women in Nepal.	Nepal	Quantitative . two-part population-based, cross-sectional, cluster-randomized survey corroborated by a visual physical examination	Women or reproductive age, pregnant women	876 female interviewees were of reproductive age (12-50years).	Maternal health	access to care, contraceptive needs, access to surgical care, menstruation-related healthcare needs, and barriers to receiving reproductive health care	Maternal education was the strongest predictor of delivering exclusively in a healthcare facility. Odds of having a cesarean delivery were doubled by urban living. Predictor of using contraception was a history of having given birth	none	Reproductive healthcare disparities for women are manifold. Education for women appears to be a significant determinant of accessing reproductive health care.	individuals, health facilities
MH4	Peer reviewed publication	Nepal	Quantitative	WRAs	4079	Maternal Health	ANC	Older age, higher parity, and higher levels of education and household economic status		Half the women had four or more ANC visits and 85% had at least one visit. Health education, iron supplementation, blood pressure measurement and tetanus toxoid were the more commonly received components of ANC	Couple/household
MH95	Health care for women International	Nepal	Secondary analysis of DHS data	pregnant women	DHS national level household surveys (2011)	Maternal health	ANC	uptake of ANC (# of ANC visits), SES, geography	N/A	SES, geography and sociocultural factors have a direct impact on whether pregnant access ANC services	All

MH96	Global Health Action	Nepal	Secondary analysis of DHS (2001, 2006, 2011) and MICS5 (2014) data	pregnant women		Maternal health	ANC	SES	N/A	ANC attendance increased from 49% in 2011 to 88% in 2014 and the rate of facility delivery increased from 7% to 44%. However, SES still influences gap as lower SES women 6 times more likely to deliver without skilled attendance.	All
MH128	Influence of family members on utilization of maternal health care services among teen and adult pregnant women in Kathmandu, Nepal: a cross sectional study				315	Maternal health; child health	ANC	Age cohort		Both women and their husbands influenced the decision to utilize ANC and delivery care but husbands were more influential, especially in teens and young adults. Thus, husband's involvement is crucial as a strategy to improve maternal health care utilization in Nepa	Individual/family
MH103	Patterns and determinants of antenatal care utilization: analysis of national survey data in seven countdown countries	Bangladesh, Cambodia, Cameroon, Nepal, Peru, Senegal and Uganda	Quantitative	MWRAs	Not Clear (DHS data used)	Maternal health	ANC visits	Age, education, employment status, religion		Inequality in ANC utilization patterns among women of different wealth statuses, educational backgrounds and places of residence need to be considered at the policy– making level across most of the countries we studied.	Family/policy

MH46				Women delivering a baby in past 12 months	746 and 2098 eligible women in the intervention and control groups, respectively	Maternal health	ANC; SBA	Intervention ; intervention and control communities	five-component intervention that addressed previously identified barriers to SBA services in mid- and far-western Nepal (not sure if SBCC or not)	The 1-year intervention was effective in increasing the use of skilled birth care services (OR = 1.57; CI 1.19-2.08); however, the intervention had no effect on the utilization of ANC services. Calls for improved quality of care, longer interventions, mobilizing community groups more, having more human resources for the intervention	Health facility
MH84	Low compliance with iron-folate supplementation among postpartum mothers of Nepal: an analysis of Nepal Demographic and Health Survey 2011	National	Secondary analysis of Nepal DHS 2011	postpartum mothers and their families	4,148	Maternal health	Anemia prevention in the postnatal period	SD factors; ANC; facility delivery; receipt of postnatal care		Mothers who had higher and secondary education [adjusted Odd ratio (aOR) 3.101; 95% CI (2.268-4.240)]; had attended four or more antenatal care visits [aOR 9.406; 95% CI (5.552-15.938)]; lived in Far-western development region [aOR 1.822; 95% CI (1.387-2.395)]; delivered in health facility [aOR 1.335; 95% CI (1.057-1.687)]; and attended postnatal care [aOR 2.348; 95% CI (1.859-2.965)] were more likely to take iron for 45 days of postpartum.	Individual; community
MH28	Impact of mass media on the utilization of antenatal care services among women of rural community in Nepal	Dhanusha District Nepal	Quant	rural women of children under 1	205	Maternal Health	Antenatal Care	exposure to mass media campaign		Mass communication exposure was correlated with positive pre-natal behaviors	individual, societal
MH30	Correlates of institutional deliveries among teenage and non-teenage mothers in Nepal Pawan	Nepal nationwide	Quant	teenage mothers	5391	Maternal health	Intitutional delivery	socio-ecoonic status, teenage pregnancy, institutionalize delivery		Teenage mothers more likely to have institutionalized birth than non-teenage mothers. Socioeconomic factors had significant role in teenage mothers who were institutionalized during birth and those who weren't. Place of residence, occupation, socioeconomic status, and frequency of ANC visits were associated with institutional delivery in both the teenage and non-teenage mothers. However, educational status, parity, birth preparedness and women autonomy had statistically significant association with institutional delivery among the non-teenage mothers only.	individual, household; community

MH108	Factors associated with place of delivery in rural Nepal	Kavrepalanchowk(Meche, Chatrebanjh,Patlekhet VDC)	Quantitative	Mothers, who had delivered their child between 15 July 2010 and 14 July 2011	240	Maternal health	antenatal care visits during last pregnancy		NA	Antenatal care service utilization of four or more times was significantly associated with the practice of institutional delivery	Policy/structure
MH106	Antenatal Health Care Service Utilization in Slum Areas of Pokhara Sub-Metropolitan City, Nepal.	Pokhara	Quantitative	MWRAs	400	Maternal health	Antenatal Health Care Service Utilization	Planned pregnancy & Age	NA	Planned pregnancy and age group 20-34 had more ANC	Individual
MH112	Birth Preparedness and Complication Readiness (BPCR) interventions to reduce maternal and neonatal mortality in developing countries: systematic review and meta-analysis	NA	Quantitative	pregnant women received BPCR interventions in developing countries	14 randomized studies (292 256 live births)	Maternal health	antenatal, intrapartum, postpartum care and neonatal care	birth preparedness and complication readiness behaviours.	Home Visits, women Group sessions	exposure to BPCR interventions was associated with a statistically significant reduction of 18% in neonatal mortality risk (twelve studies, RR = 0.82; 95% CI: 0.74, 0.91) and a non-significant reduction of 28% in maternal mortality risk (seven studies, RR = 0.72; 95% CI: 0.46, 1.13)	Structural/policy

MH78		Kathmandu	Quantitative	Births	307 antepartum stillbirths.	Maternal health	Antepartum stillbirth	SD, previous stillbirth, ANC visits, poverty, maternal health		An association was found between the following risk factors and antepartum stillbirth: increasing maternal age (aOR 1.0, 95 % CI 1.0-1.1), less than five years of maternal education (aOR 2.4, 95 % CI 1.7-3.2), increasing parity (aOR 1.2, 95 % CI 1.0-1.3), previous stillbirth (aOR 2.6, 95 % CI 1.6-4.4), no antenatal care attendance (aOR 4.2, 95 % CI 3.2-5.4), belonging to the poorest family (aOR 1.3, 95 % CI 1.0-1.8), antepartum hemorrhage (aOR 3.7, 95 % CI 2.4-5.7), maternal hypertensive disorder during pregnancy (aOR 2.1, 95 % CI 1.5-3.1), and small weight-for-gestational age babies (aOR 1.5, 95 % CI 1.2-2.0).	Individual; household; health facility
MH83	Women's Autonomy and Skilled Attendance During Pregnancy and Delivery in Nepal.		Secondary analysis - 2011 Nepal DHS data	Pregnant women and skilled attendants	4148	Maternal health	association between women's autonomy and skilled attendance during pregnancy and delivery	Women's autonomy was assessed on the basis of four indicators of decision making: healthcare, visiting friends or relatives, household purchases and spending earned money.	none discussed but recommendation could be to look at improving women's autonomy	Women's autonomy was significantly associated with the maternal health care utilization by skilled attendants. This study will provide insights for policy makers to develop strategies in improving maternal health.	Policy/societal level
MH130	Construction and Validation of a Women's Autonomy Measurement Scale with Reference to Utilization of Maternal Health Care Services in Nepal		Quant; scale development	NGO, government	250	Family planning; reproductive health; maternal health	autonomy			The new 23 item scale is a reliable tool for assessing women's autonomy in developing countries	individual, couple, household, community
MH131	Safe delivery care practices in western Nepal: Does women's autonomy influence the utilization of skilled care at birth?	Nepal - Kapilvastu district	Quant	NGO, government	250	Family planning; reproductive health; maternal health	autonomy	giving birth at attended health facility		Stratified analysis showed that when the husband is educated, women's education seems to work partly through their autonomy in decision making.	individual, couple, household, community
MH8	Peer reviewed publication	nepal	Quantitative	WRAs	12,845	Maternal Health	Breastfeeding	mother's education		Mothers with higher education were more likely to initiate breastfeeding with the first hour of childbirth	Individual/family

MH115	Early initiation of breastfeeding: a systematic literature review of factors and barriers in South Asia	Bangladesh, India, Maldives, Nepal, Pakistan, Sri Lanka	Quantitative	MWRAs	1723 studies.	Maternal health	Breastfeeding	education of mother, occupation of mother, household wealth and family size and family type.	NA	Factors at geographical, socioeconomic, individual, and health-specific levels, such as residence, education, occupation, income, mother's age and newborn's gender, and ill health of mother and newborn at delivery, affect early or timely breastfeeding initiation in South Asia	Individual, family & Societal
MH129	Promotion and consumption of breastmilk substitutes and infant foods in Cambodia, Nepal, Senegal and Tanzania.	Cambodia, Nepal, Senegal, Tanzania	Mixed	Breast infants (Mother-infant pairs)		Maternal health; child health	Breastfeeding	breastmilk substitute		The study found that commercially produced complementary foods were promoted in half of the sampled stores in Dakar, but less than 10% of stores in Phnom Penh, Kathmandu Valley and Dar es Salaam. Point-of-sale promotions across all sites varied in content and form	Individual/family
MH23	Shaping the midwifery profession in Nepal: A qualitative study on facilitators and barriers between actors	Nepal	Qual	NGO, government	17	Family planning; reproductive health; maternal health; neonatal health	connections between actors establishing midwifery school			Actors promoting the profession connect through a set of facilitators and barriers, common goals and collaboration are critical for building a midwifery profession, and political priorities challenge the professional establishment	community, health facility, societal/structural/political

MH17	contraceptive knowledge and attitudes among women seeking induced abortion in Kathmandu, nepal	Kathmandu, nepal	Quant	NGO, government	153	Family planning; maternal health	contraception knowledge and attitude	Education and maternal history		Women seeking abortion in Kathmandu had shorter education and a history of more pregnancies and deliveries than women in the control group.	couple, household, health facility
MH20	PLOS One	Bangladesh, India, Nepal, Phillipines, Indonesia, and Vietnam	Secondary analysis of DHS data	women of maternal age, household	DHS national level household surveys	Family planning; reproductive health; maternal health	contraceptive use and induced abortion	total fertility rate	N/A	The majority of countries experience fertility decline over the period of the study despite diversity in economic development.	All
MH15	Emotional Variation and Fertility Behavior.			NGO, government	5271	Family planning; maternal health	cotraception usage	husband-wife emotional bond		the variance in levels ofhusband-wife emotional bond is significantly associated with their subsequent use of contraception to avert births	couple, societal/structural/political
MH24	Opportunities, challenges and strategies when building a midwifery profession. Findings from a qualitative study in Bangladesh and Nepal		Qual	NGO, government	33	Family planning; reproductive health; maternal health; neonatal health	Creating health facilities			This study demonstrated that building a midwifery profession requires a political comprehensive collaborative approach supported by a political commitment. Through	health facility, societal/structural/policy

MH109		Rural Nepal (anonymized)	Qualitative	Wome, men, health providers	five in-depth face-to-face interviews and 14 focus group discussions with mainly women, but also men and health service providers	Maternal health	Cultural beliefs around pregnancy and childbirth	Cultural beliefs		There were beliefs around (a) cord cutting & placenta rituals; (b) rest & seclusion; (c) purification, naming & weaning ceremonies and (d) nutrition and breastfeeding. - thee offered opportunities and barriers for health providers	Societal, environmental, policy
MH144	Maternal, Newborn, and Child Health After the 2015 Nepal Earthquakes: An Investigation of the Long-term Gendered Impacts of Disasters	Nepal	Qual	NGO, government	14	Maternal health; neonatal health; child health	dietary habits and medical center visits	earthquake victim		Though families were not channeling household funds away from health care expenses for pregnant and lactating women and children under five, the findings suggest that a delayed response by the Nepali government in administering funds for rebuild- ing combined with an ongoing fuel crisis were negatively impacting families' abilities to provide adequate shelter, warmth, cooking gas, and transportation for mothers and young children.	individual, household, health facility, societal/structural/political
MH19	Contraceptive discontinuation and pregnancy postabortion in Nepal: a longitudinal cohort study	Nepal	Quantitative	Women receiving MA services	654	Family Planning; maternal health	discontinuation of contraception	Wealth Index, full range of contraception knowledge		Increased availability of long-acting methods in Nepal and similar settings may help to prevent unwanted pregnancy and attendant maternal mortality and morbidities.	Policy/structure
MH47		Dhanusha	Qual	Mothers management of stress (among mothers identified as distressed according to the GHQ-12)	22 SSIs ; one with a local healther, 12 FGDs	Maternal health	Distress and care-seeking for physical health associated with distress/tension	Socio-cultural factors; lack of sons; gender norms; family dynamcs	N/A	Key perceived causes of distress were poor health, lack of sons, and fertility problems. Tension developed in a context of limited autonomy for women and perceived duty towards the family. Distressed mothers discussed several strategies to alleviate tension, including seeking treatment for perceived physical health problems and tension from doctors or dhamis, having repeated pregnancies until a son was delivered, manipulating social circumstances in the household, and deciding to accept their fate. Their ability to implement these strategies depended on whether they were able to negotiate with their in-laws or husbands for resources. ; sees vulnerability as manifesting itself as tension	HH; community
MH134	Not just a number: examining coverage and content of antenatal care in low-income and middle-income countries Lenka	10 Low or Middle Income Countries	Quant	NGO, government	between 2857 (Nepal) to 16 721 (Nigeria)	Maternal health; neonatal health	doctor visits	location		Our findings suggest that even among women with patterns of care that complied with global recommendations, the content of care was poor.	health facility

MH31	The effect of mother's educational status on early initiation of breastfeeding: further analysis of three consecutive Nepal Demographic and Health Surveys	Nepal - nationwide	Quant	Nepali mothers	12845	Maternal Health	early breastfeeding	mother's education		Maternal education was associated with a higher likelihood of early initiation of breastfeeding in each survey. Pooled	individual, health facility
MH125	Frontiers in Public Health	Bangladesh, India, Nepal, and Pakistan	Literature review of peer-reviewed and grey literature	young girls and women susceptible to early marriage	N/A	Maternal health; child health	early child bearing	fertility, access to health care, child nutrition, socio-cultural factors, etc.	N/A	Association of early marriage, education and SES found to influence public health outcomes.	All
MH148	Dietary intake patterns and nutritional status of women of reproductive age in Nepal: findings from a health survey	Mountain, Hill and Terai regions of Nepa	Quant	NGO, government	21,111	Maternal health; nutrition	eating habits and nutritional status	age, employment status, location		The nutritional status of women of reproductive age is still poor especially in Terai and the dietary intake pattern is not adequate. It	household, community
MH101		Dhulikhel and Kathmandu	Qualitative	Experience of violence during pregnancy and who utilized ANC	12 IDIs	Maternal health	experience of domestic violence	GBV		Experiences concealed due to fear of insults, discrimination, attitudes from providers; The women wished that the health care providers were compassionate and asked them about their experience, ensured confidentiality and privacy, and referred them to services that is free of cost.	Couple; health facility

MH102		Dhulikhel and Kathmandu	Quantitative	Pregnant women 12-28 weeks of gestation attening ANC	2004	Maternal health	experience of domestic violence	Socio-demographic factors; women's empowerment		more than 1/5 had experienced violence; less than 2% reported physical violence DURING pregnancy. Women of young age and low socio-economic status were more likely to have experienced DV. Women who reported having their own income and the autonomy to use it were at significantly lower risk of DV compared to women with no income. ; often experience of violencenot disclosed	Couple
MH67		Syangja	Quantitative	Pregnant women attending antenatal care	202	Maternal health	experience of GBV	Descriptive		91% reported GBV Most of the respondents (87%) faced economic violence followed by psychological (53.8%), sexual (41.8%), and physical (4.3%) violence. Women experienced: (1) psychological violence with most complaining of angry looks followed by jealousy or anger while talking with other men, insults using abusive language and neglect; (2) economic violence with most complaining of financial hardship, denial of basic needs and an insistence on knowing where respondents were and restricting them to parents' home or friends/relatives' houses (jealousy); (3) physical violence by slapping, pushing, shaking, or throwing something at her, twisting arm or pulling hair, and punching and kicking; and (4) sexual violence by physically forcing her to have sexual intercourse without consent, and hurting or causing injury to private parts. Most (100%) of the perpetrators were found to be husbands and mothers-in-law (10.7%) who violated them rarely.	Individual; household
MH85	Factors associated with the utilisation of postnatal care services among the mothers of Nepal: analysis of Nepal demographic and health survey 2011.	National	Secondary analysis - 2011 Nepal DHS data	Policy makers, Mothers	4079 mothers	Maternal health	Factors assocated with accessing postnatal care	Urban or Rural households, mother's education and occupation, partner's education and occupation, antenatal care visits, delivery at facility or home	None described but recommendation provided: Increasing utilisation of the recommended four or more antenatal visits, delivery at health facility and increasing awareness and access to services through community-based programs especially for the rural, poor, and less educated mothers may increase postnatal care attendance in Nepal.	The majority of postnatal mothers in Nepal did not seek postnatal care. Mothers who were from urban areas, from rich families, who were educated, whose partners were educated, who delivered in a health facility, who had attended a four or more antenatal visits, and whose delivery was attended by a skilled attendant were more likely to report attending immediate postnatal care and at least one postnatal care visit. On the other hand, mothers who reported agricultural occupation, and whose partners performed agricultural occupation were less likely to have attended immediate postnatal care or at least one postnatal care visit.	Individual, couple, facility
MH1	Peer reviewed publication	National	Quantitative	WRAs	different (mics, ndhs)	Maternal Health	FP, Maternal health	use of LARC, midwifery education		Delaying pregnancy is an important means of lowering maternal mortality: young girls' bodies are not ready to give birth.	Policy/structure

MH25	What Works? Strategies to Increase Reproductive, Maternal and Child Health in Difficult to Access Mountainous Locations: A Systematic Literature Review Abbey	Afghanistan, Bolivia, Ethiopia, Guatemala, Indonesia, Kenya, Kyrgyzstan, Nepal, Pakistan, Papua New Guinea and Tajikistan	Systematic Review	NGO, government	4130 articles	Family planning; reproductive health; maternal health; neonatal health	health care access			Task shifting, strengthened roles of CHWs and volunteers, mobile teams, and inclusive structured planning forums have proved effective.	health facility, societal/structural/policy
MH52		Rupandehi district	Mixed methods	Healthcare providers providing maternal healthcare services Women with disabilities using maternal healthcare services at last pregnancy	396 healthcare providers 18 IDIs with women with disabilities using maternal healthcare services during last pregnancy	Maternal health	Health providers' attitudes towards disabilities in Nepal and women with disabilities' experiences seeking maternal healthcare	Type of provider (Nurses/auxiliary nurse midwives; general clinical health workers; Female Community Health Volunteers); Age; Urban/rural; Dalit vs. non-dalit; Previously providing services for women with disabilities vs. not; Receipt of disability training		Attitudes towards disability associated with provider type; age; rural/urban; and Dalit status. No variation by having previously provided services to women with disabilities or receipt of disability training. Women with disabilities had negative perceptions of providers' knowledge, attitudes, skills in providing services to those with disabiltiies	Health facility
MH33	New forms of development: branding innovative ideas and bidding for foreign aid in the maternal and child health service in Nepal	Nepal	Qual	NGO's		Maternal health	how NGO's obtain funding and the use of branding in that process			foreign aid for the provision of MCH services in Nepal is channeled increasingly to its beneficiaries, not through the Government system, but rather via various intermediary organisations, employing branding and bidding processes.	societal/structural/political
MH36	INTIMATE PARTNER VIOLENCE AND UNINTENDED PREGNANCY AMONG ADOLESCENT AND YOUNG ADULT MARRIED WOMEN IN SOUTH ASIA ENU	Bangladesh and Nepal	Quant	NGO, government	9788	Maternal health	intimate partner violence	age and location		"The findings indicate that IPV is a risk factor for unintended pregnancy among adolescent and young adult married women."	couple, societal/structural/political

MH40	Factors Associated With Intimate Partner Violence Against Married Women in Nepal	Nepal	quant	NGO, government	3373	Maternal health	intimate partner violence	female literacy, wealth, violent family history, lack of decision-making autonomy		"At the community level, women most at risk of IPV were those living in the Terai region, and women belonging to underprivileged castes and ethnic groups."	couple, societal/structural/political
MH87	Culture and Comorbidity: Intimate Partner Violence as a Common Risk Factor for Maternal Mental Illness and Reproductive Health Problems among Former Child Soldiers in Nepal.	Nepal	Qualitative		13 female child soldiers	Maternal health	intimate partner violence	Culture influences internal (psychological), external (social), institutional (structural), and health care (medical) processes, which, taken together, create differential risk of comorbidity across contexts.	none described.	Twelve participants said they had remained silent, enduring violence, forgiving the husband. Twelve participants endorsed communication with one's husband. Only four participants sought family support, and three contacted police. Ultimately, 12 participants left the relationship, but the majority (nine) only left after the final IPV experience, which was preceded by prolonged psychological suffering and pregnancy endangerment. comorbidity risks are increased in cultural context that rely on individual or couples-only behavior, lack external social engagement, have weak law and justice institutions, and have limited health services.	individual, household, couples, family, society
MH39	Incidence of intrapartum stillbirth and associated risk factors in tertiary care setting of Nepal: a case-control study	Nepal	Quant	NGO, government	4476	Maternal health	intrapartum stillbirths	wealth		"Being born preterm with a small-for-gestation al age was associated with the highest risk for intrapartum stillbirth. Inadequate fetal heart rate mon itoring and partogram use are preventable risk factors associated with intrapartum stillbirth"	health facility, couple

MH68		Bhaktapur	Quantitative	Lactating women	485	Maternal health	Iodine in breastmilk and urine	Descriptive		A large proportion of the women had adequate BMIC and UIC; however, a subset had high iodine concentrations. These findings emphasize the importance of carefully monitoring iodine intake to minimize the risk of iodine excess and subsequently preventing transient iodine-induced hypothyroidism in breastfed infants.	Biological; household
MH69		Bhaktapur	Quantitative	Lactating women	500	Maternal health	Iron deficiency	Age of child; dietary Fe		In multiple regression analyses, there was a weak positive association between dietary Fe intake and body Fe (beta 0.03, 95% CI 0.014, 0.045). Among the women with children aged < 6 months, but not those with older infants, intake of Fe supplements in pregnancy for at least 6 months was positively associated with body Fe (P for interaction < 0.01). Due to a relatively high dietary intake of non-haem Fe combined with low bioavailability, a high proportion of the women in the present study were at the risk of inadequate intake of Fe. The low prevalence of anaemia and Fe deficiency may be explained by the majority of the women consuming Fe supplements in pregnancy.	Biological
MH54		Western Nepal (Manipal Teaching Hospital, Nepal)	Quantitative	Pregnant women presenting with complications (at least one)	275	Maternal health	KAP related to medication use for complications	Exposure to counseling on mediction use	Counseling intervention (interpersonal)	Significant increase in KAP after exposure to counseling.	Health facility
MH29	association between sociodemographic characteristics of female community health volunteers and their knowledge and performance on maternal and child health services in rural nepal	Dhanusha district, Southern Terai, Nepal	Quant	Female Community Health Volunteers	128	Maternal Health	knowledge and performance of Maternal and Neonatal care components	Social demographic charactheristics		consider educational level when selecting Female Community Health Volunteers	Community, Individual

MH132	Knowledge of Maternal and Newborn Care Among Primary Level Health Workers in Kapilvastu District of Nepal	Nepal	Quant	primary level health workers working on Maternal and Newborn Care	137	Maternal health; neonatal health	knowledge of Maternal and Neonatal care components	Knowledge of maternal and neonatal aspects (i.e. when to bath newborn, warning signs of danger in pregnancy, meaning of exclusive breast feeding)		Primary level health workers need additional education to improve knowledge gaps	health facility /
MH133	Assessment of Critical Knowledge on Maternal and Newborn care Services among Primary Level Nurse Mid-wives in Kapilvastu District of Nepal	Kapilvastu District of Nepal	Quant	knowledge of primary level nurse-midwives on maternal and newborn care	68	Maternal health; neonatal health	knowledge of Maternal and Neonatal care components	knowledge of how to stop post-partum haemorrhage, mother to child HIV transmission, and newborn care		nurse-midwives were found to have either poor or some level of knowledge in most of the components of maternal and newborn care services.	health facility /
MH151		Western region	Quanitative	Women of cildbaring age	2500	Nutrition; maternal health	Knowledge of micronutrients (folic acid, iron)	program participation	GNE education program - and micronutrients given to participants	High interest in learning about nutrition - positively associated with women's education We found that rural women are interested in learning about nutrition regardless of educational attainment and that level of education is strongly associated with interest in learning about nutrition ($p < .001$). Although the majority of women with no education expressed interest in learning about nutrition (71%), a substantial percentage (22%) were not interested. Education and the teaching of basic health messages may hold important benefits for improving maternal and child health.	Individual

MH136		Multiple districts across Nepal	Quant	HH-level data - process evaluation	480	Maternal health; neonatal health	levels of knowledge and practices related to health, nutrition, and water, sanitation, and hygiene (WASH)	Exposure to Suaahara; DAG status of household;	Suaahara Suaahara had a specific focus on social behavior change and communication (SBCC) and gender and social inclusion (GESI), including the targeting of disadvantaged groups (DAGs), that is, those identified as being food insecure and vulnerable due to socioeconomic, cultural, or physical factors. Suaahara integrated its programming across nutrition, health services, family planning, WASH, and agriculture/homestead food production (HFP) with four key objectives: (a) to improve household nutrition, health, and	A higher proportion of DAG households in Suaahara areas reported exposure, were knowledgeable, and practiced optimal behaviors related to nearly all maternal and child health, nutrition, and WASH indicators than DAG households in non-Suaahara areas and sometimes even than non-DAG households in Suaahara areas. Moreover, differences in some of these indicators between DAG and non-DAG households were significantly smaller in Suaahara areas than in comparison areas. These results indicate that large-scale integrated interventions can influence nutrition-related knowledge and practices, while simultaneously reducing inequities.	HH
MH26	Journal of Preventive Medicene & Public Health	Cambodia, Columbia, Indonesia, Jordan, Nepal, Pakistan, Tanzania, Uganda and Zimbabwe	Secondary analysis of DHS data (2010-2013)	mothers and infants	DHS national level household surveys	Family planning; reproductive health; maternal health; neonatal health	low birth rate	antenatal care, delayed coception, low body index, SES, literacy rate	N/A	Various factors such as advanced maternal age and literacy rates are determinants of low birth rates in developing countries	All
MH117	A Case Control Study on Risk Factors Associated with Low Birth Weight Babies in Eastern Nepal		Quant; case control	NGO, government	318	Maternal health, neonatal health	low birth weight	maternal blood group, BMI, age		maternal blood group AB, normal maternal BodyMass Index (BMI), mother's age of30 or more years, and starting ANCvisit earlier were found to be protective for LBW	individual, household, societal/structural/political

MH135	Clinico-epidemiological study of Low Birth weight Newborns at Eastern part of the Nepal	Eastern Nepal	Quant	NGO, government	2587	Maternal health; neonatal health	low birth weight	Birth weight, gestational age, apnoea and mechanical ventilation		Incidence of LBW babies in our hospital was 14.45%, More than 4/5 (82.2%) baby's mother were primigravida	individual, health facility
MH149		Sarlahi, Nepal	Quant	rural Nepalese women	737	Maternal health; nutrition	Low birth weight	Vitamin/nutrient supplementation	nutrition intervention	In adjusted analyses, third trimester EPO (supplementation) was associated with a reduction in low birthweight, whereas cortisol was negatively associated with length of gestation and higher risk of preterm birth. Iron and multiple micronutrient supplementation may enhance birth outcomes by reducing mediators of maternal stress and impaired erythropoiesis.	Individual (biological)
MH116	Male involvement and maternal health outcomes: systematic review and meta-analysis.	-	Qualitative	Men & Women aged 15-49	-	Maternal health	male involvement	health outcomes		Male involvement is associated with improved maternal health outcomes in developing countries.	individual/family
MH146	Risk factors and neonatal/infant mortality risk of small-for-gestational-age and preterm birth in rural Nepal	Rural Nepal	Analysis of existing data from maternal micronutrient supplementation trial	Mothers of newborns and neonates	4130	Maternal health; neonatal health; nutrition	Maternal chronic and acute malnutrition and the associations between small-for-gestational-age (SGA)/preterm birth and neonatal/infant mortality	risk factors for and mortality consequences of small-for-gestational-age (SGA) and preterm birth in rural Nepal.	none mentioned	Maternal chronic and acute malnutrition appear to be associated with SGA outcomes. Because of high SGA prevalence in South Asia and the increased neonatal and infant mortality risk associated with SGA, there is an urgent need to intervene with effective interventions.	Individuals, household

MH91	Barriers in Utilization of Maternal Health Care Services: Perceptions of Rural Women in Eastern Nepal.	eastern Nepal	Qualitative. Exploratory study with FGDs and IDIs	Women of reproductive age, mothers		Maternal health	maternal health care service utilization		Not mentioned	The barriers to maternal health care service utilization were identified as social factors like family pressure, superstition, shyness, misconception, negligence, illiteracy, alcoholism, in addition to economic barriers and cultural practices.	individual, household, community, local government
MH100		Nepal	Quantitative	Mothers giving birth 3-5 years prior to survey	Varies	Maternal health	Maternal healthcare utilization	SD factors		The percentage of mothers that received four antenatal care (ANC) consultations increased from 9% to 54%, the institutional delivery rate increased from 6% to 47%, and the cesarean section (C-section) rate increased from 1% in 1994 to 6% in 2011. Inequality reduced over time (based on wealth) All sociodemographic variables were significant predictors of use of maternal health services, out of which maternal education was the most powerful. (poverty, education, and rural/urban status significantly associated)	Individual; household; community
MH41	Maternal mental health in primary care in five low- and middle-income countries: a situational analysis	Ethiopia, India, Nepal, South Africa and Uganda	situational analysis	NGO, government		Maternal health	maternal mental health			It is difficult to anticipate demand for mental health care at district level in the five countries, given the lack of evidence on the prevalence and treatment coverage of women with maternal mental disorders. Limited	societal/structural/political

MH147	The Relationship between Maternal Nutrition during Pregnancy and Offspring Kidney Structure and Function in Humans: A Systematic Review.		Systemtatic review	Mothers, children,	10 studies	Maternal health; neonatal health; nutrition	maternal nutrition during pregnancy and child health	relationship between maternal nutrition during pregnancy and offspring kidney structure and function in humans.	Not mentioned	Deficiencies in maternal folate, vitamin A, and total energy during pregnancy were associated with detrimental impacts on kidney structure and function, measured by kidney volume, proteinuria, eGFR(cystc) and mean creatinine clearance in the offspring. Additional experimental and longitudinal prospective studies are warranted to confirm this relationship, especially in Indigenous populations where the risk of renal disease is greater.	Individual, family, facility level
MH18	Road map to scaling-up: translating operations research study's results into actions for expanding medical abortion services in rural health facilities in Nepal	Rupandehi, Kailali	Quantitative	Women receiving MA services		Family Planning; maternal health	medical abortion	accessible and affordable services		This research provided further evidence and a road-map for expanding medical abortion services to rural areas by mid-level service providers in minimum clinical settings without the oversight of physicians, thus reducing complications and deaths due to unsafe abortion.	Policy/structure
MH42	A cluster randomized implementation trial to measure the effectiveness of an intervention package aiming to increase the utilization of skilled birth attendants by women for childbirth: study protocol	Nepal	Quant	NGO, government	5000	Maternal health	medical visits during pregnancy			Paper describes an intervention that will take multiple measures to finance, mobilize, and ensure women give birth at health facilities	household, health facility
MH14	Family Planning 2020 and Nepal's Pledge	Nepal - nationwide	Review / Position paper	NGO, government		Family planning; maternal health	meeting unmet need for family planning			"At the national level there is a dire need to multi-sectoral approach to reach our targets and for the implementation of CIP so that no one is left behind'	societal/structural/political

MH94	Nurse Education Today	Nepal	Qualitative	auxillary nurse midwive(ANM)	15	Maternal health	mental health		Training as a way to raise awareness amd cange attitiudes about mental heatlh issues in pregnant women	The main three themes that emerged from the interviews include: 1) issues related to mental, such as importance of maternal mental health training health; 2) societal attitudes and Stigma and 3) support for women.	individual, health facility and societal/structural/policy
MH13	FACTORS INFLUENCING MISTIMED AND UNWANTED PREGNANCIES AMONG NEPALI WOMEN	Nepal - nationwide	Quant	Nepali women	5391	Family planning; maternal health	mistimed and unwanted last pregnancy	geographic location, husbands with paid jobs, socioeconomic status		Women from the hill region reported more untimely pregnancies and women from the Western development region reported more unwanted pregnancies.	household, individual
MH110	Maternal and Neonatal Health Knowledge, Service Quality and Utilization: Findings from a Community Based Quasi-experimental Trial in Arghakhanchi District of Nepal	Arghakhanchi	Quantitative	Mothers of child < 23 Mos, Health Facilities	Mothers of <23 mos child=340, Health facilities=5	Maternal health	MNC QI	Qualityof Care	NA	Along with all capacity building programs, support of essential newborn care equipment enabled the health facilities of intervention area to cater better MNC services.	Structural/policy
MH143		Nepal and other countries	Quantitative - review	Pregnant women		Maternal health; neonatal health	Night blindness; maternal mortality; other	Vitamin A supplementation		The pooled results of three large trials in Nepal, Ghana and Bangladesh (with over 153,500 women) do not currently suggest a role for antenatal vitamin A supplementation to reduce maternal or perinatal mortality. However, the populations studied were probably different with regard to baseline vitamin A status and there were problems with follow-up of women. There is good evidence that antenatal vitamin A supplementation reduces maternal night blindness, maternal anaemia for women who live in areas where vitamin A deficiency is common or who are HIV-positive. In addition the available evidence suggests a reduction in maternal infection, but these data are not of a high quality.	Individual; health system

MH89	Accuracy of Home-Based Ultrasonographic Diagnosis of Obstetric Risk Factors by Primary-Level Health Care Workers in Rural Nepal.					Maternal health	Not a behavioral study		No SBCC	With limited training, primary-level health care workers in rural Nepal can accurately diagnose selected third-trimester obstetric risk factors using ultrasonography.	
MH145	Nutritional status of infants at six months of age following maternal influenza immunization: A randomized placebo-controlled trial in rural Nepal.	Sarlahi District, southern plains of Nepal,	Quantitative - A randomized placebo-controlled trial of year round maternal influenza immunization was conducted in two annual cohorts	Infants and mothers	3693 women and 3646 infants	Maternal health; neonatal health; child health	Not a behavioral study		Not a SBCC study	Although maternal immunization reduced low birth weight by 15%, only wasting at 6 months in the 2nd cohort was statistically significantly difference. However, the study was underpowered to detect reductions of public health importance.	
MH2	Peer reviewed publication	National	Quantitative	WRAs	Not clear	Maternal Health	obstetric fistula	Awareness, treatment and training		More than 2 million women in Asia and sub-Saharan Africa are living with fistula and each year between 50,000 to 100,000 women worldwide are affected by this condition	individual/family
MH93	BMC Oral Health	Nepal	Qualitative	pregnant and recently delivered women	IDIs=16; FGDs= 3 groups of 23 participants	Maternal health	oral health diseases (importance of taking care of oral health during pregnancy)	SES	N/A	Women felt confident describing signs and symptoms of oral health diseases but did not have knowledge of where to seek care and relied heavily on their community as a source of information. Some women use toothbrush and toothpaste at least once a day while others use more traditional methods such as use of local shrubs or trees.	individual, household, community, health facility

MH72		Nepal and other countries (Nepal-Makwanpur, Nepal-Dhanusha)	Quantitative	Pregnancy data	70574 (not all in Nepal)	Maternal health	Participation in women's group meetings	SE and SD factors		Socioeconomic differences in women's group attendance were small, except for occasional lower attendance by elites. Sociodemographic differences were large, with lower attendance by young primigravid women in African as well as in South Asian sites. The intervention was considered relevant and interesting to all socioeconomic groups. Local facilitators ensured inclusion of poorer women. Embarrassment and family constraints on movement outside the home restricted attendance among primigravid women. Reproductive health discussions were perceived as inappropriate for them.	Individual; household
MH27		2 districts - 1 hilly, 1 himalaya	Qual	Women recruited in 2 week-long mobile surgical camps	21	Maternal health	Pelvic organ prolapse	Looking at factors affecting women's seeking of surgical treatment for pelvic organ prolapse	N/A	multilevel factors influenced uptake: Health system factors - accessibility and affordability; support of FCHVS sociocultural - being closer to end of reproductive years; having family support individual - symptoms, fear of cancer, etc.	Health facility / sociocultural / individual
MH60		Baglung	Quantitative	Women with pelvic organ prolapse symptoms	74 women	Maternal health	Pelvic organ prolapse	Socio-dem factors; kegels/rings given (non-surgical response to POP)		Univariate analyses identified age at screening, age at onset of symptoms, the duration of symptoms and an associated rectocele as factors associated with increasing POP severity ($p < 0.05$). Kegel exercises were taught to 25 (33.8%) women with POP and ring pessaries were offered to 47 (63.5%) women with POP.	Health facility
MH51		Rupandehi	Quant	15-49 aged women pregnant within last five years and used maternal care services in public health facility	343 women	Maternal health	Perceived quality of care	women with disabilities from both the non-Dalit population and Dalit population and their peers without disabilities from both non-Dalit and Dalit communities	N/A	Perceptions about the quality of care differed significantly by disability status but not by caste (except for a single dimension - cleanliness of services). All groups rated the quality of healthcare delivery, interpersonal and personal factors as well as access to services 'low.' Poor service user experiences and perceptions of quality of care undermine opportunities to translate increased healthcare coverage into improved access and outcomes.	health facility
MH5	Peer reviewed publication	Nepal	Qualitative	WRAs	4079	Maternal Health	PNC	Occupation, residence, place of delivery		43.2% reported attending postnatal care within the first six weeks of birth, while 40.9% reported attending immediate postnatal care	
MH6	Peer reviewed publication	Bangladesh, Ghana, Kygyz Republic, and Nepal,	Quantitative	WRAs	-	Maternal Health	PNC	timing of check-up, place of delivery		The most recent MICS round 6 and DHS phase 7 have both included a number of questions on the content of the first check within the first 2 days following birth, including cord examination, weight and temperature assessment, breastfeeding counseling and observation and counseling on symtpoms that cause a mother to take a newborn to health care.	Policy

MH90	Screening for postpartum depression and associated factors among women who deliver at a university hospital, Nepal	Those who delivered at Dhulikel Hospital	Quantitative	Postpartum women	100 postpartum women	Maternal health	postpartum depression	sociodemographic and sociocultural factors, and mother-related, pregnancy-related, and child related factors	Recommended: mothers with high risk should be routinely screened for postpartum depression.	Postpartum depression is common among Nepalese women and can be detected early in the postpartum periods; and many psychosocial factors like pregnancy complications, infant's health problems and vaginal delivery are associated with it.	
MH59		Dailekh district	Quantitative - economic analysis	Policy makers (pregnant women)	N/A	Maternal health	Pre-eclampsia	Calcium supplementation during pregnancy		Calcium supplementation for pregnant mothers for prevention of PE/E provided with MgSO4 for treatment holds promise for the cost-effective reduction of maternal and neonatal morbidity and mortality associated with PE/E.	Health facility
MH139	Adverse effects of exposure to armed conflict on pregnancy: a systematic review.	mothers in armed conflict areas. Studies from Libya, Bosnia, Herzegovina, Israel, Palestine, Kosovo, Yugoslavia, Nepal, Somalia, Iraq, Kuwait and Afghanistan.	Literature review	Mothers	13 studies	Maternal health; neonatal health	pregnancy outcomes.	impacts of exposure to armed conflicts on the pregnancy outcomes.	none mentioned	evidence suggested an increase in the incidence of miscarriage, stillbirth, prematurity, congenital abnormalities, miscarriage and premature rupture of membranes among mothers exposed to armed conflict.	societal, environmental, policy
MH53		Western Nepal (Manipal Teaching Hospital, Nepal)	Quantitative	Pregnant women presenting with complications (at least one)	275	Maternal health	Prescription of medications in response to complications	No predictors - descriptive		Drugs prescribed to pregnant women said to be in keeping with safe prescriptions. Some teratogenic drugs prescribed	Health facility

MH141	Role of antenatal care and iron supplementation during pregnancy in preventing low birth weight in Nepal: comparison of national surveys 2006 and 2011.	National level - Nepal	Secondary analysis of data. Pooled data from the Nepal Demographic and Health Surveys (NDHS) of 2006 and 2011 were analysed and compared	Newborns, mothers	2845 children (i.e. 923 children in 2006 and 1922 children in 2011, who had low birth weight recorded)	Maternal health; neonatal health	Prevention of low birthweight of newborns	antenal, care, iron supplmentation and geographical location were some of the socio-demographic and health related factors associated with low birth weight (LBW) of newborns	None described. Conclusion identified a need for targeted interventions aimed at decreasing the high rate of LBW through increasing antenatal care and consumption of iron supplementation during pregnancy.	Not attending antenatal care increased the odds of having a LBW infant by more than two times [OR 2.301; 95% CI (1.526-3.471)]. Mothers not consuming iron supplementation during their pregnancy were more likely to have LBW infants [OR 1.839; 95% CI (1.282-2.363)]. Residing in the Far-western and Eastern region were also significant risk factors for LBW in the pooled dataset and in 2011 survey.	individuals, couples, households, health facility
MH48		Dhanusha	Quant	Mothers screened for distress after delivery	9078 mothers who were screened for distress using the 12 item General Health Questionnaire (GHQ-12) around six weeks after delivery	Maternal health	Psychological distress	Food insecurity, multiple births, C-section, perinatal health problems, education, ANC, parity, husband's education, age	N/A	Factors that predicted distress were severe food insecurity (L) 2.21 (95% confidence interval 143, 3.40)), having a multiple birth (2.28 (1.27, 4.10)), caesarean section (1.70 (0.29, 2.24)), perinatal health problems (1.58 (1.23, 2.02)), no schooling (1.37 (1.08, 1.73)), fevver assets (1.33 (1.10, 1.60)), five or more children (1.33 (1.09,1.61)), poor or no antenatal care (1.31 (1.15, 1.48)p <0001), having never had a son (1.31 (1.14, 149)), not staying in the parental home in the postnatal period (1.15 (1.02,1.30)), having a husband with 110 schooling (1.17 (0.96, 1.43)) and lower maternal age (0.99 (0.97, 1.00)). Socioeconomic disadvantage; healthcare-seeking/RH; gender-related factors and social norms linked with maternal distress	Individual; HH
MH44	Quality of intra-partum care at a university hospital in Nepal: A prospective cross-sectional survey	Nepal	Quant	NGO, government	292	Maternal health	quality of care			The management of care in normal birth could be improved in the studied setting, and there is a need for more research to support such improvement	health facility
MH16	Improving health worker performance of abortion services: an assessment of post- training support to providers in India, Nepal and Nigeria	India, Nepal, Nigeria	Quant	NGO, government	3471	Family planning; maternal health	quality of care for abortions	following training intervention		1. Benson J, Healy J, Dijkerman S, Andersen K. Improving health worker performance of abortion services: an assessment of post-training support to providers in India, Nepal and Nigeria. Reprod Health [Internet]. 2017 Dec 21 [cited 2018 Jul 22];14(1):154. Available from: https://reproductive-health-journal.biomedcentral.com/articles/10.1186/s12978-017-0416-0	health facility

MH82		Kaski	Quantitative	Pregnant women	701	Maternal health	Quality of services	Type of facility (priv vs. public)		Overall, perception of quality differed significantly by types of health facility used for delivery. They rated lowest the supplies and equipment in birth centres and the amenities and interpersonal aspects in the public hospital. Accordingly, attention to these aspects is needed to improve the quality. Mean scores of total quality and sub-scales health facility and health care delivery for women attending private hospital were higher ($p < 0.001$) than those using birth centre or public hospital. Mean score of the sub-scale interpersonal aspects for public hospital users was lower ($p < 0.001$) than those delivered at private hospital and birth centre. However, perception on interpersonal aspects by women using public hospital improved significantly after delivery ($p < 0.001$).	Health facility
MH57		Solukhumbu district	Quantitative	Women giving birth in last 24 months	34	Maternal health	Receipt of maternal health services	Descriptive		74% had birth preparedness plan, most had blood pressure checked, but few had anemia or urinalysis; most were home deliveries (82%); only 9% had all four parts of essential newborn care as per WHO requirements; low receipt o check-up post-birth by health worker	Health facility
MH76		Nepal	Quantitative	Mothers	4,079 mothers	Maternal health	Receiving 4 or more ANC; receiving quality ANC	SD factors; smoking; women's say in DM; husband's work outside of agriculture; media exposure; where getting ANC		Half the women had four or more ANC visits and 85% had at least one visit. Health education, iron supplementation, blood pressure measurement and tetanus toxoid were the more commonly received components of ANC. Older age, higher parity, and higher levels of education and household economic status of the women were predictors of both attendance at four or more visits and receipt of good quality ANC. Women who did not smoke, had a say in decision-making, whose husbands had higher levels of education and were involved in occupations other than agriculture were more likely to attend four or more visits. Other predictors of women's receipt of good quality ANC were receiving their ANC from a skilled provider, in a hospital, living in an urban area and being exposed to general media.	Individual; couple; household; health facility
MH62		Nepal	Quantitative	Women giving birth within past 5 years and completing GBV module	1375 (weighted)	Maternal health	Recipt of skilled maternity care across pregnancy/early postnatal OR any skilled care in pregnancy, childbirth, or postpartum	Spousal violence; socio-dem; healthcare accessibility		Violence associated after controlling for HC access, but not once controlling for socio-dem factors. Better-educated women, women whose husbands were professionals or skilled workers and women from well-off households were more likely to receive skilled maternity care either across the pregnancy continuum or at recommended points during or after pregnancy.	Individual; couple; community; health facility
MH120	Cross-country analysis of strategies for achieving progress towards global goals for women's and children's health		Systematic Review	10 low and middle income countries that met MDG's early		Maternal health; child health	reducing maternal and child mortality rates	consistent and coordinated policy and programs		Reducing maternal and child mortality in the 10 fast-track countries can be linked to consistent and coordinated policy and programme inputs across health and other sectors.	societal/structural/political
MH3	Peer reviewed publication	National	Mixed	WRAs	4277	Maternal Health	RH Morbidities	Age, literacy and CE group		POP prevalence decreased from 10% in 2006 to 6.4% Still very high. Conservative management of POP needs to be prioritized equally to surgical management. • Need for focused strategy to increase awareness and identify women with OF.	Policy/structure

MH124	The role of husbands in maternal health and safe childbirth in rural Nepal: a qualitative study.	hill villages in the Gorkha district of Nepal.	Qualitative	husbands, wives, pregnant women, mothers in law, health workers	Semi-structured, in-depth interviews were conducted with husbands (n = 17), wives (n = 15), mothers-in-law (n = 3), and health workers (n = 7)	Maternal health; child health	Role of husbands in maternal health	role of husbands in maternity care and safe childbirth, their perceptions of the needs of women and children, factors which influence or discourage their participation, and how women feel about male involvement around childbirth.	Recommendation: factors to be considered when health education for husbands is planned - Male involvement needs to be recognised and addressed in health education due to the potential benefits it may bring to both maternal and child health outcomes.	In rural Nepal, male involvement in maternal health and safe childbirth is complex and related to gradual and evolving changes in attitudes taking place. Traditional beliefs influence male nvolvement, including the central role of women in the domain of pregnancy and childbirth. Husbands have a role to play in maternity care - they may be the only person available when a woman goes into labour. Considerable interest for the involvement of husbands was expressed by both expectant mothers and fathers but their role is shaped by their availability, cultural beliefs, and traditions. Although complex, expectant fathers do have an important role in maternal health and safe childbirth.	Individuals, couples, households, society
MH64		Nepal (and other countries)	Quantitative	Pregnant women		Maternal health	service utilization	age of marriage		The results show a negative association between child marriage and maternal health care use in most study countries, and this association is more negative in rural areas and with higher orders of parity. However, the association between age at marriage and maternal health care use is not straightforward but depends on parity and area of residence and varies across countries. The marginal effects in use of delivery care services between women married at age 14 years or younger and those married at age 18 years or older are more than 10% and highly significant in Bangladesh, Burkina Faso, and Nepal.	Couple; societal
MH137		Nepal (and other countries)	Lit review	Women; neonatal; policy-makers		Maternal health; neonatal health	Service utilization	Demand and supply side		Systematic lit review, including 2 articles from Nepal. Demand-side determinants of service-usage were transportation, female education, autonomy, health awareness, and ability-to-pay. Supply-side determinants included service availability and quality, existence of community health-workers, costs, and informal payments in health facilities. Evidence is particularly sparse on MNH in acute crises, and remains limited in fragile situations generally.	Individual; household; health facility
MH10	Peer reviewed publication	Nepal	Quantitative	WRAs having still birth	335	Maternal health	Still birth	ecological zone, occupation, schooling, open defecation		Access to antenatal care services and skilled birth attendants for women in the mountainous and hilly ecological zones of Nepal is needed to further reduce stillbirth and improved services should also focus on women with low levels of education	Policy

MH63		Nepal	Quantitative	Pregnancies - at least 28 weeks gestation	18386	Maternal health	stillbirth	Socio-dem; health behaviors		Stillbirth increased significantly among women that lived in the hills ecological zones (aRR 1.38, 95% CI 1.02, 1.87) or in the mountains ecological zones (aRR 1.71, 95% CI 1.10, 2.66). Women with no schooling (aRR 1.72, 95% CI 1.10, 2.69), women with primary education (aRR 1.81, 95% CI 1.11, 2.97); open defecation (aRR 1.48, 95% CI 1.00, 2.18), and those whose major occupation was agriculture (aRR 1.80, 95% CI 1.16, 2.78) are more likely to report higher stillbirth.	Indivdual; Household; community
MH12		Far west Nepal	Quantitative	Mothers with children 12-48 months	2614	Child health; maternal health	Stuting (height-for-age); maternal and child hemoglobin		HKI AAMA Project	Agricultural inputs had strongest path; some concerns about intervention fidelity mentioned (but it was an abstract…)	Household
MH65		Nepal	Comment	Health workforce	N/A	Maternal health	Training of midwives			Positive commentary on progress of training midwives to be SBA	Health facility
MH21	Studies in Family Planning	Nepal, Senegal and Uganda	Secondary analysis of DHS data (2010 or later)	married or cohabitating women of reproductive age	DHS national level household surveys	Family planning; reproductive health; maternal health	unmet need for contraception or FP		N/A	There might be missed opportunities to reach MWRA with unmet FP needs through integrated services such as prenatal care, postnatal checkups, vaccination appointments, etc.	individual, couple, houshold, health facility

MH71		Nepal and Bangladesh	Quantitative	Pregnant women		Maternal health	Use of maternal health services	expansion of private sector		The results of the study suggest that the expansion of private sector supply of institutional-based delivery services in Nepal and Bangladesh has not led to increased horizontal inequity. In fact, in both countries, inequity was shown to have decreased over the study period. The study findings also suggest that the provision of government delivery services to the poor protects against increased wealth-related inequity in service use.	Community; Health facility
MH88	Community survey on awareness and use of obstetric ultrasonography in rural Sarlahi District, Nepal.	rural Sarlahi District, Nepal	Quantitative	pregnant women and their husbands	6182 women	Maternal health	Use of ultrasonography during pregnancy	reproductive health, socioeconomic, and other characteristics that increased the likelihood of undergoing an obstetric ultrasonographic examination.	none mentioned	Utilization of obstetric ultrasonography in rural Nepal was very limited. Odds of receiving an ultrasonographic examination were higher among women with post-secondary education than among those with none; for those whose husbands had post secondary education than those with none; and odds were lower among women younger than 18years than among those aged 18-34years.	individuals, couples, facility
MH127	MATRI-SUMAN' a capacity building and text messaging intervention to enhance maternal and child health service utilization among pregnant women from rural Nepal: study protocol for a cluster randomised controlled trial	Dhanusha	Quantitative	pregnant women	66,000	Maternal health; child health	utilisation of MCH services.	promotion of health seeking behaviour	NA	Capacity development of health volunteers and text messaging to pregnant women through mobile phones have shown improved maternal and child health (MCH) outcomes and is associated with increased utilisation of MCH services. However, such interventions are uncommon in Nepal. We aim to carry out an intervention with the hypothesis that capacity building and text messaging intervention will increase the MCH service utilisation.	Societal/structural
MH34	Effect of Women's autonomy on maternal health service utilization in Nepal: a cross sectional study	Nepal	Quant	Women	4,148	Maternal health	utilizing health services	woman autonomy		"This study found that many socio-demographic variables such as age of women, number of children born, level of education, ethnicity, place of residence and wealth index are predicators of utilizing the maternal health services of recent child. Notably, higher level autonomy was associated with higher use of maternal health services [adjusted odds ratio (aOR) =1.40; CI 1.18–1.65"	household, societal

MH43	Utilization of maternal health care services in post-conflict Nepal	Nepal	Quant	NGO, government	10,793 women in NDHS 2006 and 13,485 women in NDHS	Maternal health	utilizing maternal health services	conflict in Nepal		The utilization of maternal health care services tended to increase continuously during both the armed conflict and the post-conflict period in Nepal	individual, household, societal/structural/political
MH38	Circulating IGF-1 may mediate improvements in haemoglobin associated with vitamin A status during pregnancy in rural Nepalese women Margia	Nepal - rural areas	Quant	NGO, government	1186	Maternal health	Vit A levels	IGF-1, and Hb		"Increasing IGF-1 was likely one mechanism by which retinol improved circulating Hb in pregnant women of rural Nepal,"	health facility, societal/structural/policy
MH35	Household water insecurity, depression and quality of life among postnatal women living in urban Nepal	Urban Nepal	Quant	postnatal women living in urban Nepal	267	Maternal health	water insecurity, depression, and quality of life	levels of stress from water insecurity		Multiple regression models showed that women with high levels of stress derived from household water insecurity had greater odds of probable depression and lower physical HRQOL scores than did women with low HWIS scores.	community, household, individual
MH66		Makwanpur district	Quantitative	Mothers participating in a community randomized trial in 2001-3 who were recruited for follow-up in 2014	4030	Maternal health	Women's agency	Participation in a PLA intervention	PLA women's groups	In original trial: At the end of the trial, a 30% reduction in neonatal mortality and a 78% reduction in maternal mortality was observed in deliveries occurring in intervention compared to control clusters Found no association between participation and agency at long-term follow-up. Suggest that agency may be a pre-req not a consequence	Individual/Couple/household
MH22		Nepal	Commentary	Women		Family planning; reproductive health; maternal health				Earthquake exacerbated health challenges for women; issues with access and existing vulnerabilities were worsened	Individual; community; societal

MH32	It Takes More than a Village: Building a Network of Safety in Nepal's Mountain Communities	Nepal - mountain communities	Theory / Description	NGO's working in MCH		Maternal health				"This report describes and analyzes successful efforts to reduce maternal and infant mortality in a culturally astute, durable, and integratedway,aswellasexamplesofinnovationand success experienced by enacting the network of safety model"	Community, Individual
MH74		Nepal	Commentary	Midwives; policymakers		Maternal health				midwifery education, regulation, and professional associations are important for workforce strength in Nepal	Health facility
MH121		National	Editorial			Maternal health; child health				Reductions in MMR; birth attendance by SBA increased; challenges in access to reproductive healthcare; improvements in reducing child mortality and improving measles immunization; reducing neonatal deaths a continued challenge calls to improve targets to be more inclusive of hardest to reach populations - sex, age, ethnicity, disability, geographic location	Societal
MH126		Nepal	Case study; literature review	Policy makers, donors and stakeholders - related to maternal and child health	N/A	Maternal health; child health				At the macro level, governance with effective and committed leaders was found to be vital for achieving positive health outcomes. This was underpinned by clear commitment from donors coupled by a significant increase in funding to the health sector. At the meso level, where policies are operationalized, inter-sectoral partnerships as well as decentralization and task-shifting emerged as critical. At micro (service interface) level, community-centred models and accessible and appropriately trained and incentivized local health providers play a central role in all study countries.	Societal/structural and policy; health facility;

MH138		Nepal and other countries	Case study	CHWs/program implementers		Maternal health; neonatal health				CHW interventions complementary to facility-based interventions; tasks in delivery of health promotion information and distribution of commodities were transitioned to CHWs to reach underserved populations. In Nepal, trained FCHVs on additional things (FCHVs received an additional seven days of training focused on the intervention, which involved identifying pregnant women in their catchment area, providing prenatal counseling, and distributing misoprostol to women who were eight months pregnant for self-administration at home births.) Results showed that of the 840 post-intervention survey respondents, 73.2% received misoprostol, and uterotonic coverage increased from 11.6% before the intervention to 74.2% after the intervention [44]. The most extensive improvements in uterotonic coverage were observed in the two lowest wealth strata. This successful pilot program added to the increasing body of evidence demonstrating that trained CHWs could effectively deliver misoprostol for self-	Health facility
MH140	Adverse obstetric symptoms and rural-urban difference in cesarean delivery in Rupandehi district, Western Nepal: a cohort study	Rupandehi district, Western Nepal	Quantitative: A community-based cohort study	Postpartum mothers	735 mothers within one month postpartum	Maternal health; neonatal health		obstetric complications and rural-urban difference in cesarean delivery rate in Western Nepal.	none	About one in five mothers reported some adverse obstetric symptoms. Obstetric problems were more common in the rural areas, whereas cesarean delivery rate was much higher in the urban areas.	
MH152		Kathmandu valley	Qualitative	Staff at hospitals serving pregnant women	20 interviews and non-participant observation	Maternal health	maternal health care service utilization	Individual level; facility level; economic reasons (facilitating environment)		First Phase Delays are: 1) lack of awareness that the facility/services exist; 2) women being too busy to attend; 3) poor services; 4) embarrassment; and 5) financial issues. Themes for the second Phase of Delay are: 1) birthing on the way; and 2) by-passing the facility in favour of one further away. The final Phase involved: 1) absence of an enabling environment; and 2) disrespectful care.	Individual; health facility; household
MH153		Palpa	Qualitative	Skilled birth attendants	22 SBAs; 1 FGD with 10 SBA trainees; 5 KIIs	Maternal health	Provision of maternal healthcare services	Facility level (enabling environment for SBAs)		Participants identified the essential components of an enabling environment as: relevant training; ongoing professional support; adequate infrastructure, equipment and drugs; and timely referral pathways. All SBAs who practised alone felt unable to manage obstetric complications because quality management of life-threatening complications requires the attention of more than one SBA. In Nepal, referral systems require strengthening, and the policy of posting SBAs alone, in remote clinics, needs to be reconsidered to achieve the goal of reducing maternal deaths through timely management of obstetric complications.	Health facility

MH154		Makwanpur	Qualitative	Married women with disabiltiies recently delivering a baby (last 10 years); also health workers	27 interviews with disabled married women with disabiltiies	Maternal health	Institutional delivery	Quality; cost; lack of family support		married disabled women considered pregnancy and childbirth to be normal and preferred to deliver at home. Issues of quality, cost and lack of family support were as pertinent for disabled women as they were for their non-disabled peers. Health workers felt unprepared to meet the maternal health needs of disabled women. Key conclusions and implications for practice: integration of disability into existing Skilled Birth Attendant training curricula may improve maternal health care for disabled women. There is a need to monitor progress of interventions that encourage institutional delivery through the use of disaggregated data, to check that disabled women are benefiting equally in efforts to improve access to maternal health care.	Household; facility
MH155		6 districts	Qualtative	Clean delivery kit users and non-users; health providers; birth attendants; household Dmers; central level personnel	18 FGDs; 40 interviews	Maternal health; neonatal health	Use of clean delivery kit	Awareness; availability		CDK users were aware of its benefits, and utilization was largely compatible with birth practices. Utilization was prevented by lack of awareness about the benefits and lack of availability. Participants believed that CDKs were for home use. CONCLUSION: Poor promotion of CDK is related to the disjuncture of promoting CDK use, while encouraging institutional deliveries. If CDKs are made available and marketed for use in households and health institutions, utilization may increase.	Individual; health facility
MH156		Makwanpur	Qualitative	Women who had deliveredat home	33 interviews	Maternal health	Institutional delivery	Awareness; Family support; household position/roles; quality of health services		Many women were aware of the benefits of institutional delivery yet their status in the home restricted their access to health facilities. Often they did not wish to bring shame on their family by going against their wishes, or through showing their body in a health institution. They often felt unable to demand the organisation of transportation because this may cause financial problems for their family. Some felt that government incentives were insufficient. Often, a lack of family support at the time of delivery meant that women delivered at home. Past bad experience, and poor quality health services, also prevented women from having an institutional delivery.	Individual; household; facility
MH157		Dhanusha and other countries (india, Bangladesh)	Quantitative	Cesarean births	45,327 births across study areas	Maternal health	Cesarean section	Location of birth/type of faility; socio-dem factors		Institutional delivery rates varied widely between settings, from 21% in rural India to 90% in urban India. The proportion of private and charitable facility births delivered by caesarean section was 73% in Bangladesh, 30% in rural Nepal, 18% in urban India and 5% in rural India. The odds of caesarean section were greater in private and charitable health facilities than in public facilities in three of four study locations, even when adjusted for pregnancy and delivery characteristics, maternal characteristics and year of delivery (Bangladesh: adjusted OR (AOR) 5.91, 95% CI 5.15 to 6.78; Nepal: AOR 2.37, 95% CI 1.62 to 3.44; urban India: AOR 1.22, 95% CI 1.09 to 1.38). We found that highly educated women were particularly likely to deliver by caesarean in private facilities in urban India (AOR 2.10; 95% CI 1.61 to 2.75) and also in rural Bangladesh (AOR 11.09, 95% CI 6.28 to 19.57). CONCLUSIONS Our results lend support to the hypothesis that increased caesarean section rates in these South Asian countries may be driven in part by the private sector. They also suggest that preferences for caesarean delivery may be higher among highly educated women, and that individual-level and provider-level factors interact in driving caesarean rates higher. Rates of caesarean section in the private sector, and their maternal and neonatal health outcomes, require close monitoring.	Individual; household; facility

MH158		National	Quantitative	women age 15–49 years old who had delivered within three years prior to the survey	4,136	Maternal health; neonatal health	Infant care practices	Prenatal care visits; having SBA at prenatal care		children of mothers with no prenatal care were at increased risk of neonatal death (OR = 2.03, 95 % CI = 1.28–3.23). Compared to women with no prenatal care, those with more than three visits were more likely to immunize their children (OR = 2.66, 95 % CI = 2.10–3.36) and more likely to initiate breastfeeding within 1 h after birth (OR = 1.25, 95 % CI = 1.02–1.54). Having skilled attendants at prenatal care and at birth was also associated with better infant care practices. Conclusion:Neonatal mortality is still high in Nepal. Adequate prenatal care utilization may represent a key preventative strategy, which, in the present study, was associated with improvement in neonatal mortality, higher likelihood of having immunization, and initiation of breastfeeding within 1 h after birth. Public health awareness programs and interventions are needed in Nepal to increase the utilization of prenatal care as well as delivery assisted by skilled attendants.	Individual; Facility
MH159		Bardiya	Quantitative	recently delivered mothers	630 respondents at baseline and endline	Maternal health	Institutional delivery; knowledge of danger signs; ANC; birth preparedness	changes in concentration indices (change in equity and changes in coverage)	Community Based Newborn Care Package Community mobilization and behaviour change activities included: (1) FM radio announcements of essential newborn messages; (2) street drama performances on newborn care messages by a professional art and music group 'Surdaya Saskritik Partisthan' (3) Billboards with newborn care messages; (4) television broadcasting at the Maternal Child Health clinic during clinic time; (5) FCHVs interacted with the community during a one-day social event, which was also broadcast live on the radio; (6) orientation of Health Facility Operation and	We observed statistically significant improvements in equity for facility delivery [CIndex: −0.15 (−0.24, −0.06)], knowledge of at least three newborn danger signs [−0.026(−0.06, −0.003)], breastfeeding within 1 h [−0.05(−0.11, −0.0001)], at least one antenatal visit with a skilled provider [−0.25(−0.04, −0.01)], at least four antenatal visits from any provider [−0.15(−0.19, −0.10)] and birth preparedness [−0.09(−0.12, −0.06)]. The largest increases in practices were observed for facility delivery (50%), immediate drying (34%) and delayed bathing (29%). These results and those of similar studies are evidence that community-based interventions delivered by female community health volunteers can be instrumental in improving equity in levels of facility delivery and other newborn care behaviours. We recommend that equity be evaluated in other similar settings within Nepal in order to determine if similar results are observed.	Community; facility (intervention worked at multiple levels)
MH160		Dhading; Sarlahi	Qualitative	FCHVs; health providers	20 FCHVs, 11 health workers and 26 service users were purposefully selected and interviewed using semi-structured topic guides. In addition, four focus group discussions were held with 19 FCHVs	Maternal health	Provision of maternal healthcare services	Variations between hill/terai districts; looking at roles of FCHVs		All study participants acknowledged the contribution of FCHVs in maternity care. All FCHVs reported that they shared key health messages through regularly held mothers' group meetings and referred women for health checks. The main difference between the two study regions was the support available to FCHVs from the local health centres. With regular training and access to medical supplies, FCHVs in the hill villages reported activities such as assisting with childbirth, distributing medicines and administering pregnancy tests. They also reported use of innovative approaches to educate mothers. Such activities were not reported in Terai. In both regions, a lack of monetary incentives was reported as a major challenge for already overburdened volunteers followed by a lack of education for FCHVs.	Community
MH161		National (DHS)	Quantitative	Women of reproductive age giving birth in past 5 years	4,036 had given births in the past five years	Maternal health	Institutional delivery	Knowledge of SDIP; healthcare seeking; educ; wealth; rural/urban; exposure to media	Safe Delivery Incentive Programme	Approximately 90% of the women knew about the SDIP. About 42% of the women who knew about the SDIP and 13% of the women who did not know about the SDIP had their most recent delivery at a health institution. The odds of institutional delivery increased nearly three-fold (OR = 2.70; CI: 1.59-4.59) among women who knew about the SDIP compared to women who did not know about the SDIP. Other factors that predicted institutional delivery included education, wealth, urban status, first birth, the number of antenatal care visits, and exposure to news media.	Individual; household; community

MH162		Makwanpur	Quantitative	married women aged between 15-49 years, who had delivered their babies within one year	216	Maternal health	ANC	Age, education, income, family type; knowledge		More than half of the women were not aware of the consequences of lack of antenatal care. Age, education, income, type of family (caste, religion), type of work (service vs. agricultural work); parity; were strongly associated with the attendance at antenatal care service.	Individual; household
MH163		Chitwan	Quantitative	Mothers	129	Maternal health	Institutional delivery	Number of ANC		While ethnicity, educational level, parity were significantly asociated in bivariate models, But in the multivariable logistic regression analysis, no. of ANC visit (AOR = 10.03, 95 % CI = 1.02-98.29) was only independent factors affecting institutional delivery service utilization.	Individual
MH164		10 pilot districts - had pilot districts and comparison districts	Quantitative	Recent births	Varied between pre/post and between HMIS and DHS data	Maternal health; neonatal health	birth preparedness, antenatal care seeking, antenatal care quality, delivery by skilled birth attendant, immediate newborn care and postnatal care within 48 hours	Impact of program	community-based newborn care package (CBNCP)	Changes over time in intervention and comparison areas were similar in difference-in-differences analysis of DHS and HMIS data. Logistic regression of DHS data also did not reveal any significant improvement in combined outcomes: birth preparedness, adjusted OR (aOR)=0.8 (95% CI 0.4 to 1.7); antenatal care seeking, aOR=1.0 (0.6 to 1.5); antenatal care quality, aOR=1.4 (0.9 to 2.1); delivery by skilled birth attendant, aOR=1.5 (1.0 to 2.3); immediate newborn care, aOR=1.1 (0.7 to 1.9); postnatal care, aOR=1.3 (0.9 to 1.9). Health providers' knowledge and skills in intervention districts were fair but showed much variation between different providers and districts. CONCLUSIONS This study, while representing an early assessment of impact, did not identify significant improvements in newborn care practices and raises concerns regarding CBNCP implementation. It has contributed to revisions of the package and it being merged with the Integrated Management of Neonatal and Childhood Illness programme. This is now being implemented in 35 districts and carefully monitored for quality and impact. The study also highlights general challenges in evaluating the impacts of a complex health intervention under 'real life' conditions.	Individual
MH165		Gorkha (Palungtar)	Quantitative	Mothers with a child <2	180	Maternal health	Institutional delivery	Age of marriage; knowledge of delivery incentive; wait times; knowledge of maternal health		93.3% of the mother gave birth to their current child at health institution. The study variables like age at marriage, knowledge on delivery incentive, long waiting hours at health facility, Information on maternal health before current pregnancy, age at first pregnancy, gestational age at first ANC visit and women knowing differences between home and institutional delivery were independent factors influencing utilization of institutional delivery service. CONCLUSIONS: Promotion of information, education and communication on maternal health services and delivery incentives could result in utilization of institutional delivery services.	Individual; health facility

MH166		National (DHS)	Quantitative	4,148 women who had a live birth during 5 years preceding the survey	4,148 women who had a live birth during 5 years preceding the survey	Maternal health	Use of ANC - timing	Education, wealth, caste, pregnancy wantedness		Overall, 70% of the women had started their first ANC at 4 month or earlier. Among participants who had never attended school, just more than half (52%) received first ANC at 4 months or earlier, while majority of participants (97%) who had received higher education received first ANC at recommended time. Similarly, 89% of those from richest quintile and 48% of those from poorest quintile received first ANC at recommended time. In adjusted analysis, women from richest wealth quintile were significantly more likely to initiate ANC early (AOR: 3.74, 95% CI: 2.31-6.05) compared to the poorest. Similarly, women with higher level education were significantly more likely (AOR: 11.40, 95% CI: 5.05-25.73) to initiate ANC early compared to women who had never attended school. A significantly lower odds of early ANC take up was observed among madhesi other caste (AOR: 0.56, 95% CI: 0.35-0.90) compared to brahmin/chhetri women. Women whose pregnancy was unwanted were significantly less likely to attend first ANC at 4 months or early (AOR: 0.73, 95% CI: 0.58-0.93) in comparison to women whose pregnancy was wanted. CONCLUSION: The differences in the recommended timing of initiation of ANC were evident among women with different educational, economic levels, and caste/ethnic groups. Rural women were less likely to have checkups as per guidelines. The findings suggest to a need of interventions to raise female education and improve economic status of households. Targeted interventions suitable to local context and culture are equally important.	Household; individual
MH167		National (DHS)	Quantitative	8,785 children born between July 2005 and December 2008, obtained from the nationally representative Demographic and Health Surveys, 2006 and 2011.	8,785 children born between July 2005 and December 2008, obtained from the nationally representative Demographic and Health Surveys, 2006 and 2011.	Maternal health	SBA	copayment exemption compared to a cash incentive on increasing skilled birth attendance (i.e., birth attended by a skilled health worker) in Nepal.; road networks		Skilled birth attendance in districts with both interventions was no higher on average than in districts with only the cash incentive. In areas with adequate road networks, however, significantly higher skilled birth attendance was observed in districts with both interventions compared to those with only the cash incentive. CONCLUSIONS: The added incentive of the user-fee exemption did not significantly increase skilled birth attendance relative to the presence of the cash incentive. User-fee exemptions may not be effective in areas with inadequate road infrastructure.	Health facility; community/structural
MH168		Nawalparasi	Quantitative	The inclusion criteria were women of reproductive age (15–49 years) having at least one child below 24 months of age at the time of survey	626	Maternal health	Institutional delivery	Distance, caste, access to certain material goods, DM, etc.		Women were significantly more likely to give birth at health care facilities compared to home if the distance was less than one hour, belonged to advantaged caste, had radio, television and motorbike/scooter, decision maker for place of birth was husband, reported their frequency of antenatal (ANC) visits at 4 or more and belonged to age group 15-19. CONCLUSION: The analysis indicates that husbands of women giving birth influence the choice of place of birth. The findings highlight importance of having four or more ANC visits to the health institutions and that it should be located within one-hour walking distance. Inequity in utilisation of childbirth services at health institutions exists as showed by low utilisation of such services by disadvantaged caste.	Individual; household; health system

Health behavior of interest: Delivery							
Socio-ecological level	**Reference number**	**Factor shown to be significantly associated with institutional delivery**	**Location of study (specific district, region, or nationally)**	**Population where association found**	**Who not using services? Reasons not using services? Preferences for services? Trust in services?**	**How do culture, values, and norms influence health service utilization?**	**What SBC interventions really change behaviors**
Individual	MH11	Occupation; frequency of ANC	National	Mothers	Socio-demographic; use of healthcare services		
	MH11	Educational status; parity; birth preparedness	National	Non-teenage mothers	Socio-demographic; birth preparation		
	MH49	Educational status	National	Mothers	Socio-demographic		
	MH55	Education; parity; previous place of delivery; number of antenatal visits; knowledge about place of delivery; planned place of delivery; ease/convenience	Morang		Socio-demographic; knowledge; previous experience; preferences; use of healthcare services; birth preparation		
	MH61	Parity; education; pregnancy experience (complications); attending 4 ANC	Kailali	Mothers giving birth in past 5 years	Socio-demographic; previous experiece; use of healthcare services		
	MH70	Television viewership; tobacco use; education; birth history	National	Community-level	Media exposure; risky health behaviors; previous experience; socio-demographic		

	MH73	Parity	National (and other countries)	Mothers giving birth in past 5 years	Socio-demographic		
	MH77	Adequate mass media exposure; parity; personal preferences	Mugu	Mothers	Media exposure; socio-demographic; preferences		
	MH79	Awareness of unexpected problems; knowledge of danger signs	Central hill	Mothers	Knowledge		
	MH81	4 ANC; birth preparation	National	Mothers	Use of healthcare services; birth preparation		
	MH98	Awareness of comprehensive emergency obstetric care; Belief that the hospital is the safest birth location; Preferences (safety prioritization in decision-making)	Achham	Mothers	Knowledge; preferences		
	MH99	Age; birth planning; awareness of services; perception of safety	Accham	Mothers	Socio-demographic; birth preparation; perceptions; knowledge		

	MH107	Education, age and parity	Near Kathmandu	Mothers	Socio-demographic		PLA did not have an association with changes in institutional delivery
	MH122	Education	Kapilvastu		Socio-demographic		
	MH9	4 ANC; age; education	National	Mothers	Socio-demographic; use of healthcare services		
	MH7	Knowledge of a conditional cash incentive program (Safe Delivery Incentive Programme (SDIP)); exposure to news media; education, first birth, the number of antenatal care visits	National	Mothers	Knowledge; media exposure; socio-demographic; use of healthcare services		
	MH45	ANC	Bhaktapur - Jhaukhel-Duwakot	Mothers	Use of healthcare services		
	MH56	Specific ANC procedures received (rather than # or timing of ANC)	National (and other countries)	Mothers	Use of healthcare services		
	MH86	poor birth preparedness practices	Rukum	Providers; community	Birth preparation		

	MH104	Birth preparations, complications during the most recent pregnancy/delivery, perceptions that skilled health workers are always available; not knowing about the adequacy of physical facilities	Chitwan	Mothers	Birth preparation; previous experience; perceptions; knowledge		
	MH119	ANC	National	Mothers	Use of healthcare services		
	MH156	Knowledge of institutional delivery benefits; Previous bad experience in health facility	Makwanpur	Women who delivered at home	Previous experience; knowledge		
	MH161	Knowledge of the Safe Delivery Incentive Programme; education; first birth, the number of antenatal care visits, and exposure to news media	National	Mothers	Knowledge; socio-demographic; use of healthcare services; media exposure		
	MH163	Number of ANC visits	Chitwan	Mothers	Use of healthcare services		

	MH165	age at marriage; knowledge on delivery incentive, information on maternal health before current pregnancy, age at first pregnancy, gestational age at first ANC visit and knowledge of differences between home and institutional delivery	Gorkha	Mothers	Knowledge; socio-demographic		
	MH168	Frequency of antenatal (ANC) visits at 4 or more; age group (15-19)	Nawalparasi	Mothers	Use of healthcare services; socio-demographic		
	MH30	Age; Occupation, frequency of ANC visits (both the teenage and non-teenage mothers); educational status, parity, birth preparedness (non-teenage mothers only)	National	Mothers giving birth in past 5 years	Socio-demographic; birth preparation; use of healthcare services		
	MH108	Antenatal care practice, adverse pregnancy outcome	Kavrepalanchowk	Mothers giving birth between july 2010-july 2011	Previous experience; use of healthcare services		

	MH152	lack of awareness that the facility/services exist; busy; embarrassment; birthing on the way; by-passing the facility in favour of one further away	Kathmandu Valley	Staff at hospitals serving pregnant women	Knowledge; perceptions/ preferences; birth experiences		

Health behavior of interest: Delivery							
Socio-ecological level	**Reference number**	**Factor shown to be significantly associated with institutional delivery**	**Location of study (specific district, region, or nationally)**	**Population where association found**	**Who not using services? Reasons not using services? Preferences for services? Trust in services?**	**How do culture, values, and norms influence health service utilization?**	**What SBC interventions really change behaviors**
Couple	MH55	Husband's education; husband's occupation	Morang	Mothers	Spousal characteristics		
	MH61	husband's occupation (other than agriculture or professional /technical jobs)	Kailali	Mothers giving birth in past 5 years	Spousal characteristics		
	MH104	Support for institutional delivery by the husband	Chitwan	Mothers	Spousal support		
	MH168	decision maker for place of birth was husband	Nawalparasi	Mothers	Decision-making		

Health behavior of interest: Delivery							
Socio-ecological level	**Reference number**	**Factor shown to be significantly associated with institutional delivery**	**Location of study (specific district, region, or nationally)**	**Population where association found**	**Who not using services? Reasons not using services? Preferences for services? Trust in services?**	**How do culture, values, and norms influence health service utilization?**	**What SBC interventions really change behaviors**
Family or household	MH11	SES	National	Mothers	Economic factors		
	MH11	women autonomy	National	Non-teenage mothers	Gender		
	MH49	Wealth	National	Mothers	Economic factors		
	MH55	Caste; income	Morang	Mothers	Ethnicity; economic factors		
	MH61	Wealth	Kailali	Mothers giving birth in past 5 years	Economic factors		
	MH70	Wealth	National	Community-level	Economic factors		
	MH73	Household socioeconomic condition, parental education	National (and other countries)	Mothers	Economic factors; family characteristics		
	MH75	Absolute income	National (and other countries)	Mothers	Economic factors		
	MH77	Cost	Mugu	Mothers	Economic factors		
	MH98	Income	Achham	Mothers	Economic factors		

	MH99	Women's land ownership; income	Achham	Mothers	Gender; Economic factors		
	MH105	Embracing and addressing deeply rooted family values and traditions	National	Mothers	Family values, support, and traditions		
	MH122	Dalit/Janjati	Kapilvastu	Mothers	Ethnicity		
	MH9	Wealth; religion, ethnicity	National	Mothers	Economic factors; ethnicity; religion		
	MH7	Wealth	National	Mothers	Economic factors		
	MH104	Caste/ethnicity, decision-making (the decision on place of delivery taken jointly by women and family members or by family members alone)	Chitwan	Mothers	Ethnicity; Gender		
	MH119	Income	National	Mothers	Economic factors		

	MH54	Lack of family support	Makwanpur	Women with disabilities; providers providing services for women with disabilities	Family values, support, and traditions		
	MH156	Status in home (did not want to bring shame or go against family;); lack of family support; financial constraints	Makwanpur	Women who delivered at home	Gender; family values, support, and traditions; econoimc factors		
	MH161	Wealth	National	Mothers	Economic factors		
	MH168	Wealth (household ownership); caste; decision maker for place of birth was husband	Nawalparasi	Mothers	Gender; economic factors		

	MH30	Socioeconomic status (both the teenage and non-teenage mothers); women autonomy (non-teenage mothers only)	National	Mothers giving birth in past 5 years	Economic factors; gender		
	MH108	Ethnicity	Kavrepalanchowk	Mothers giving birth 2010-2011	Ethnicity		
	MH107	Wealth	Near Kathmandu	Mothers	Socio-demographic		
	MH152	financial	Kathmandu valley	Staff serving pregnant women	Economic factors		

Health behavior of interest: Delivery							
Socio-ecological level	**Reference number**	**Factor shown to be significantly associated with institutional delivery**	**Location of study (specific district, region, or nationally)**	**Population where association found**	**Who not using services? Reasons not using services? Preferences for services? Trust in services?**	**How do culture, values, and norms influence health service utilization?**	**What SBC interventions really change behaviors**
Community	MH11	Place of residence	National	Mothers	Location		
	MH61	Place of residence (which village)	Kailali	Mothers giving birth in past 5 years	Location		
	MH73	Place of residence	National (and other countries)	Mothers	Location		
	MH99	Social support	Achham	Mothers	Social support		
	MH122	Terai	Kapilvastu	Mothers	Location		
	MH9	Rural; ecological zone	National	Mothers	Location		
	MH7	Urban status	National	Mothers	Location		
	MH86	Geography	Rukum	Providers; community	Location		
	MH159	Community Based Newborn Care Package	Bardiya	Mothers	Community mobilization		Community Based Newborn Care Package
	MH161	Urban status	National	Mothers	Location		
	MH30	Place of residence (rural/urban)	National	Mothers giving birth in past 5 years	Location		

Health behavior of interest: Delivery							
Socio-ecological level	**Reference number**	**Factor shown to be significantly associated with institutional delivery**	**Location of study (specific district, region, or nationally)**	**Population where association found**	**Who not using services? Reasons not using services? Preferences for services? Trust in services?**	**How do culture, values, and norms influence health service utilization?**	**What SBC interventions really change behaviors**
Health facility or health system	MH55	Time to reach the nearest health center; safety	Morang	Mothers	Access; Quality of care		
	MH70	Distance to health facility	National	Community-level	Access		
	MH77	Distance to health facility; quality; attitudes of providers; healthcare system dysfunction	Mugu	Mothers	Access; provider-level; system		
	MH98	Service availability (comprehensive emergency obstetric care	Achham	Mothers	Availability		
	MH99	Referral capacity	Achham	Mothers	Provider-lvel		
	MH105	Upgrading birthing centres and strengthening the competencies of health personnel	National	Mothers	Quality of care; provider-level		
	MH45	Use of transport (e.g. bus, taxi, motorcycle) to reach a health facility;	Bhaktapur - Jhaukhel-Duwakot	Mothers	Access		

	MH86	Poor quality; inadequate human and capital resources, poor governance; low level of trust	Rukum	Providers; community	Quality of care; provider-level; system		
	MH104	Birthing facility located within one hour's travelling distance	Chitwan	Mothers	Access		
	MH123	Earthquake distruptions to services	National	General	Availability		
	MH154	Quality; HWs considered selves unprepared for clients' specific needs	Makwanpur	Women with disabilities; providers providing services for women with disabilities	Quality of care; provider-level		
	MH156	Poor quality	Makwanpur	Women who delivered at home	Quality of care		
	MH159	Community Based Newborn Care Package	Bardiya	Mothers	Provider-level; system		Community Based Newborn Care Package
	MH165	long waiting hours at health facility	Gorkha	Mothers	Access		
	MH168	Distance to health facility	Nawalparasi	Mothers	Access		
	MH108	Time taken to reach the health institution	Kavrepalanchowk	Mothers giving birth 2010-2011	Access		
	MH152	poor services; absence of an enabling environment(avail of services); disrespectful care	Kathmandu valley	Staff serving pregnant women	Quality of care; availability		

Health behavior of interest: Delivery							
Socio-ecological level	Reference number	Factor shown to be significantly associated with institutional delivery	Location of study (specific district, region, or nationally)	Population where association found	Who not using services? Reasons not using services? Preferences for services? Trust in services?	How do culture, values, and norms influence health service utilization?	What SBC interventions really change behaviors
Societal, policy, structural, or environmental	MH98	Social expectation for institutional birth	Achham	Mothers	Enabling social norms		
	MH58	Incentive programs (financing initiatives)	National	Mothers	Incentives		Incentive programs (financing initiatives) skewed towards more accessible, wealthy areas
	MH86	Harmful culture practices and traditions	Rukum	Providers; community	Harmful cultural norms	Harmful culture/norms reducing institutional delivery	
	MH118	Maternity Incentive Scheme (MIS); Aama program	National	Mothers	Incentives		
	MH123	Earthquake	National	Mothers	Environmental		
	MH97	delivery of care via public-private partnership	Accham	Mothers	Public-private		Cost-effectiveness of public-private partnership
	MH142	Free birth delivery programme (long-term effects on use of public facilitiesnot sustained)	National	Mothers	Incentives		

Reference number	Reference	Geographical location(s)	Primary audience(s) or populations of interest	Primary health areas of interest: Family planning and reproductive health; maternal health; neonatal health; child health; adolescent health; nutrition
FP43	Devkota, H. R., Clarke, A., Shrish, S., & Bhatta, D. N. (2018). Does women's caste make a significant contribution to adolescent pregnancy in Nepal? A study of Dalit and non-Dalit adolescents and young adults in Rupandehi district. *BMC Women's Health* , *18* (1), 23. https://doi.org/10.1186/s12905-018-0513-4	Rupandehi	Women 14-24	Family planning; reproductive health
FP53	Bhandari, T. R., Dangal, G., Sarma, P. S., & Kutty, V. (2014). Construction and Validation of a Women's Autonomy Measurement Scale with Reference to Utilization of Maternal Health Care Services in Nepal. *Journal of the Nepal Medical Association* , *52* (195).	Rupandehi & Kapilvastu	MWRAs	Maternal health; family planning; reproductive health
FP7	Karkee, R., & Khanal, V. (2016). Postnatal and neonatal care after home birth: A community-based study in Nepal. *Women and Birth : Journal of the Australian College of Midwives* , *29* (3), e39-43. https://doi.org/10.1016/j.wombi.2015.10.003	Kaski	Pregnant women	Family planning
FP48	Bogren, M. U., Berg, M., Edgren, L., van Teijlingen, E., & Wigert, H. (2016). Shaping the midwifery profession in Nepal - Uncovering actors' connections using a Complex Adaptive Systems framework. *Sexual & Reproductive Healthcare : Official Journal of the Swedish Association of Midwives* , *10* , 48–55. https://doi.org/10.1016/j.srhc.2016.09.008	Nepal	NGO, government	Family planning; reproductive health; maternal health; neonatal health

FP33	Berin, E., Sundell, M., Karki, C., Brynhildsen, J., & Hammar, M. (2014). Contraceptive knowledge and attitudes among women seeking induced abortion in Kathmandu, Nepal. *Int J Womens Health* , *6* , 335–341. https://doi.org/10.2147/ijwh.s57370	Kathmandu, nepal	WRAs	Family planning; maternal health
FP6	Dhungana, A., Nanthamongkolchai, S., & Pitikultang, S. (2016). Factors Related to Intention to Undergo Female Sterilization Among Married Women in Rural Kathmandu, Nepal. *Nepal Journal of Epidemiology* , *6* (1), 539–547. https://doi.org/10.3126/nje.v6i1.14736	rural Kathmandu (central hill region)	Married women with a child	Family planning
FP1	United States Agency for International Development, Fertility Awareness for Community Transformation	41 interventions	WRAs	Family planning
FP2	Wasti SP, Simmons R, Limbu N, Chipanta S, Haile L, Velcoff J et al. USide-Effects and Social Norms Influencing Family Planning Use in Nepal Kathmandu Univ Med J. 2017;59(3):222-9. ns R, Limbu N, Chipanta S,Haile L,Velcoff J,Shattuck D, Side-Effects and Social Norms Influencing Family Planning Use in Nepal	Nepal	WRAs	Family planning
FP3	Contraceptive Method Skew and Shifts in Method Mix In Low- and Middle-Income Countries	109 countries	Healtrh facilities	Family planning
FP5	"Associations of women's position in the household and food insecurity with family planning use in Nepal "	nepal	WRAs	Family planning
FP10	Mehata, S., Paudel, Y. R., Dotel, B. R., Singh, D. R., Poudel, P., & Barnett, S. (2014). Inequalities in the Use of Family Planning in Rural Nepal. *Biomed Res Int* , *2014* .	Nepal	MWRA	Family planning
FP12	Miller, G., & Valente, C. (2016). Population Policy: Abortion and Modern Contraception Are Substitutes. *Demography* , *53* (4), 979–1009. https://doi.org/10.1007/s13524-016-0492-8	Nepal	Fertil-aged women	Family planning
FP13	Mishra, S. R., Joshi, M. P., & Khanal, V. (2014). Family planning knowledge and practice among people living with HIV in Nepal. *PLoS One* , *9* (2), e88663. https://doi.org/10.1371/journal.pone.0088663	Kaski	PLHIVs	Family planning

FP15	Padmadas, S. S., Lyons-Amos, M., & Thapa, S. (2014). Contraceptive behavior among women after abortion in Nepal. *International Journal of Gynaecology and Obstetrics: The Official Organ of the International Federation of Gynaecology and Obstetrics* , *127* (2), 132–137. https://doi.org/10.1016/j.ijgo.2014.05.012	Nepal	Women after birth or abortion	Family planning
FP20	Sapkota, D., Adhikari, S. R., Bajracharya, T., & Sapkota, V. P. (2016). Designing evidence-based family planning programs for the marginalized community: An example of Muslim community in Nepal. Frontiers in Public Health, 4(122), 1–10. https://doi.org/10.3389/fpubh.2016.00122	Kapilvastu	MWRAs	Family planning
FP23	Shrestha, A., Kayastha, B., Manandhar, S., & Chawla, C. D. (2014). Acceptance of family planning amongst patients attending Dhulikhel hospital obstetrics and gynecology department. *Kathmandu University Medical Journal (KUMJ)* , *12* (47), 198–201.	KU, Dhulikhel Hospital (Kavrepalanchowk)	Couples	Family planning

FP25	Thapa, S., Paudel, I. S., Bhattarai, S., Joshi, R., & Thapa, K. (2015). Factors affecting IUCD discontinuation in Nepal: a nested case-control study. *Asia-Pacific Journal of Public Health* , *27* (2), NP1280-7. https://doi.org/10.1177/1010539512458522	Kathmandu		Family planning
FP28	Yamamoto, Y., & Matsumoto, K. (2017). Choice of contraceptive methods by women's status: Evidence from large-scale microdata in Nepal. *Sexual & Reproductive Healthcare : Official Journal of the Swedish Association of Midwives* , *14* , 48–54. https://doi.org/10.1016/j.srhc.2017.09.005	Nepal	Women aged 15–49 years	Family planning
FP31	Axinn, W. G., Ghimire, D. J., & Smith-Greenaway, E. (2017). Emotional Variation and Fertility Behavior. *Demography* , *54* (2), 437–458. https://doi.org/10.1007/s13524-017-0555-5	Chitwan	WRAs and spouces	Family planning; maternal health
FP35	Puri, M., Henderson, J. T., Harper, C. C., Blum, M., Joshi, D., & Rocca, C. H. (2015). Contraceptive discontinuation and pregnancy postabortion in Nepal: a longitudinal cohort study. Contraception, 91(4), 301–307. https://doi.org/10.1016/j.contraception.2014.12.011	Kathmandu and Terai	Women receiving MA services	Family Planning; maternal health
FP41	Craig, S. R., Childs, G., & Beall, C. M. (2016). Closing the Womb Door: Contraception Use and Fertility Transition Among Culturally Tibetan Women in Highland Nepal. *Maternal and Child Health Journal* , *20* (12), 2437–2450. https://doi.org/10.1007/s10995-016-2017-x	highland Nepal - Gorkha and Mustang	Women who used contraception - Tibetan women	Family planning; reproductive health
FP45	Majumder, N., & Ram, F. (2015). Explaining the role of proximate determinants on fertility decline among poor and non-poor in Asian countries. *PLoS ONE* , *10* (2). https://doi.org/10.1371/journal.pone.0115441	Bangladesh, India, Nepal, Phillipines, Indonesia, and Vietnam	WRA	Family planning; reproductive health; maternal health

FP19	Rocca, C. H., Puri, M., Harper, C. C., Blum, M., Dulal, B., & Henderson, J. T. (2014). Postabortion contraception a decade after legalization of abortion in Nepal. *Int J Gynaecol Obstet* , *126* (2), 170–174. https://doi.org/10.1016/j.ijgo.2014.02.020	Western and eastern regions - Kathmandu and terai	Women getting abortions	Family planning
FP22	Sharma, B., & Nam, E. W. (2018). Condom Use at Last Sexual Intercourse and Its Correlates among Males and Females Aged 15-49 Years in Nepal. *INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH* , *15* (3). https://doi.org/10.3390/ijerph15030535	Nepal	Men & Women aged 15-49	Family planning
FP21	Sapkota, S., Rajbhandary, R., & Lohani, S. (2017). The Impact of Balanced Counseling on Contraceptive Method Choice and Determinants of Long Acting and Reversible Contraceptive Continuation in Nepal. Maternal and Child Health Journal, 21(9), 1713–1723. https://doi.org/10.1007/s10995-016-1920-5	Marie stopes across Nepal	MWRA getting treated in Marie Stopes facilities	Family planning
FP26	Wang, L.-F., Puri, M., Rocca, C. H., Blum, M., & Henderson, J. T. (2016). Service provider perspectives on post-abortion contraception in Nepal. *Culture, Health & Sexuality* , *18* (2), 223–235. https://doi.org/10.1080/13691058.2015.1073358	Kathmandu and one terai district, Nepal	IDIs with servie providers/administrators on post-abortion FP service provision	Family planning
FP14	Padmadas, S. S., Amoako Johnson, F., Leone, T., & Dahal, G. P. (2014). Do mobile family planning clinics facilitate vasectomy use in Nepal? Contraception, 89(6), 557–563. https://doi.org/10.1016/j.contraception.2014.01.019	Nepal	MWRAS	Family planning
FP16	Paudel, I. S. (2014). Fertility desire and family planning need among people living with HIV in far western Nepal. *INTERNATIONAL JOURNAL OF INFECTIOUS DISEASES* , *21* (1), 120. https://doi.org/10.1016/j.ijid.2014.03.676	Nepal (not specified)	420 males and females people living with HIV/AIDS (PLHA) under anti-retroviral treatment (ART)	Family planning

FP49	Bogren, M., & Erlandsson, K. (2018). Opportunities, challenges and strategies when building a midwifery profession. Findings from a qualitative study in Bangladesh and Nepal. *Sexual & Reproductive Healthcare : Official Journal of the Swedish Association of Midwives* , *16* , 45–49. https://doi.org/10.1016/j.srhc.2018.02.003		NGO, government	Family planning; reproductive health; maternal health; neonatal health
FP42	Dalal, K., Wang, S., & Svanstrom, L. (2014). Intimate partner violence against women in Nepal: an analysis through individual, empowerment, family and societal level factors. *Journal of Research in Health Sciences* , *14* (4), 251–257.	National	WRA	Family planning; reproductive health
FP38	Catling, C. J., Medley, N., Foureur, M., Ryan, C., Leap, N., Teate, A., & Homer, C. S. E. (2015). Group versus conventional antenatal care for women. *COCHRANE DATABASE OF SYSTEMATIC REVIEWS* , (2). https://doi.org/10.1002/14651858.CD007622.pub3		WRAs	Family planning; reproductive health
FP8	McKay, K. (2017). Planning Families in Nepal. *MEDICAL ANTHROPOLOGY QUARTERLY* , *31* (2). https://doi.org/10.1111/maq.12344	Nepal - outside of Kathmandu	MWRA	Family planning
FP50	Byrne, A., Hodge, A., Jimenez-Soto, E., & Morgan, A. (2014). What Works? Strategies to Increase Reproductive, Maternal and Child Health in Difficult to Access Mountainous Locations: A Systematic Literature Review. *PLoS One* , *9* (2). https://doi.org/10.1371/journal.pone.0087683	Afghanistan, Bolivia, Ethiopia, Guatemala, Indonesia, Kenya, Kyrgyzstan, Nepal, Pakistan, Papua New Guinea and Tajikistan	NGO, government	Family planning; reproductive health; maternal health; neonatal health
FP37	Canning, D., Shah, I. H., Pearson, E., Pradhan, E., Karra, M., Senderowicz, L., … Langer, A. (2016). Institutionalizing postpartum intrauterine device (IUD) services in Sri Lanka, Tanzania, and Nepal: study protocol for a cluster-randomized stepped-wedge trial. *BMC Pregnancy and Childbirth* , *16* (1), 362. https://doi.org/10.1186/s12884-016-1160-0	Sri Lanka, Tanzania, and Nepal	NGO, government	Family planning; reproductive health

FP40	Chakraborty, N. M., Murphy, C., Paudel, M., & Sharma, S. (2015). Knowledge and perceptions of the intrauterine device among family planning providers in Nepal: a cross-sectional analysis by cadre and sector. *BMC Health Services Research* , *15* , 39. https://doi.org/10.1186/s12913-015-0701-y	Nepal	NGO, government	Family planning; reproductive health
FP51	Mahumud, R. A., Sultana, M., & Sarker, A. R. (2017). Distribution and determinants of low birth weight in developing countries. *Journal of Preventive Medicine and Public Health* , *50* (1), 18–28. https://doi.org/10.3961/jpmph.16.087	Cambodia, Columbia, Indonesia, Jordan, Nepal, Pakistan, Tanzania, Uganda and Zimbabwe	mothers and infants	Family planning; reproductive health; maternal health; neonatal health
FP18	Raj, A., McDougal, L., Reed, E., & Silverman, J. G. (2015). Associations of marital violence with different forms of contraception: cross-sectional findings from South Asia. International Journal of Gynaecology and Obstetrics: The Official Organ of the International Federation of Gynaecology and Obstetrics, 130 Suppl, E56-61. https://doi.org/10.1016/j.ijgo.2015.03.013	Bangladesh, India, Nepal	MWRAs	Family planning
FP34	Puri, M., Regmi, S., Tamang, A., & Shrestha, P. (2014). Road map to scaling-up: translating operations research study's results into actions for expanding medical abortion services in rural health facilities in Nepal. Health Research Policy and Systems, 12. https://doi.org/10.1186/1478-4505-12-24	Rupandehi, Kailali	Women receiving MA services	Family Planning; maternal health
FP30	Amatya, A., & Dangal, G. (2017). Family Planning 2020 and Nepal's Pledge. *Journal of Nepal Health Research Council* , *15* (2), I–II.	Nepal - nationwide	NGO, government	Family planning; maternal health
FP27	Yakub, M., Schulze, K. J., Khatry, S. K., Stewart, C. P., Christian, P., & West, K. P. (2014). High plasma homocysteine increases risk of metabolic syndrome in 6 to 8 year old children in rural Nepal. *Nutrients* , *6* (4), 1649–1661. https://doi.org/10.3390/nu6041649	NA	Children of 6 to 9 years	Family planning
FP29	Acharya, P., Gautam, R., & Aro, A. R. (2016). FACTORS INFLUENCING MISTIMED AND UNWANTED PREGNANCIES AMONG NEPALI WOMEN. *Journal of Biosocial Science* , *48* (2), 249–266. https://doi.org/10.1017/S0021932015000073	Nepal - nationwide	Nepali women	Family planning; maternal health
FP39	Chakrabarti, A. (2018). Female Land Ownership and Fertility in Nepal. *JOURNAL OF DEVELOPMENT STUDIES* , *54* (9), 1698–1715. https://doi.org/10.1080/00220388.2017.1400017	Nepal	NGO, government	Family planning; reproductive health
FP4	Rocca CH et al., Postabortion contraception a decade after legalization of abortion in Nepal, International Journal of Gynecology & Obstetrics, 2014, 126(2):170–174			Family planning

FP9	Mehata, S., Paudel, Y. R., Mehta, R., Dariang, M., Poudel, P., & Barnett, S. (2014). Unmet need for family planning in nepal during the first two years postpartum. *BioMed Research International* , *2014* . https://doi.org/10.1155/2014/649567	Nepal	Postpartum women (using child-level data) giving birth in last 5 years	Family planning
FP44	Jennings, E. A., & Pierotti, R. S. (2016). The influence of wives' and husbands' fertility preferences on progression to a third birth in Nepal, 1997–2009. *Population Studies* , *70* (1), 115–133. https://doi.org/https://doi.org/10.1080/00324728.2016.1140806	Chitwan	Husbands and wives	Family planning; reproductive health
FP24	Spring, H., Datta, S., & Sapkota, S. (2016). Using Behavioral Science to Design a Peer Comparison Intervention for Postabortion Family Planning in Nepal. *Frontiers in Public Health* , *4* , 123. https://doi.org/10.3389/fpubh.2016.00123	National	clients during various stages of the abortion and family planning & service providers/counselors	Family planning
FP32	Benson, J., Healy, J., Dijkerman, S., & Andersen, K. (2017). Improving health worker performance of abortion services: an assessment of post-training support to providers in India, Nepal and Nigeria. *Reproductive Health* , *14* (1), 154. https://doi.org/10.1186/s12978-017-0416-0	India, Nepal, Nigeria	NGO, government	Family planning; maternal health
FP52	Brainerd, E., & Menon, N. (2015). Religion and Health in Early Childhood: Evidence from South Asia. *POPULATION AND DEVELOPMENT REVIEW* , *41* (3), 439+. https://doi.org/10.1111/j.1728-4457.2015.00067.x	India, Bangladesh, and Nepa	NGO, government	Family planning; reproductive health; neonatal health
FP54	Bhandari, T. R., Kutty, V. R., Sarma, P. S., & Dangal, G. (2017). Safe delivery care practices in western Nepal: Does women's autonomy influence the utilization of skilled care at birth? *PloS One* , *12* (8), e0182485. https://doi.org/10.1371/journal.pone.0182485	Nepal - Kapilvastu district	WRAs	Maternal health; family planning; reproductive health
FP17	Raj, A., & McDougal, L. (2015). Associations of intimate partner violence with unintended pregnancy and pre-pregnancy contraceptive use in South Asia. *Contraception* , *91* (6), 456–463. https://doi.org/10.1016/j.contraception.2015.03.008	Bangladesh, India, Nepal, Pakistan	MWRAs	Family planning
FP46	Malarcher, S., & Polis, C. B. (2014). Using measurements of unmet need to inform program investments for health service integration. *Studies in Family Planning* , *45* (2), 263–275. https://doi.org/10.1111/j.1728-4465.2014.00388.x	Nepal, Senegal and Uganda	married or cohabitating women of reproductive age	Family planning; reproductive health; maternal health
FP47	Thapa, S. B., & Acharya, G. (2017). Women's health is not in focus in disaster zones: lessons from the Nepal earthquake. *JOURNAL OF FAMILY PLANNING AND REPRODUCTIVE HEALTH CARE* , *43* (2), 92–93. https://doi.org/10.1136/jfprhc-2016-101605	Nepal	Women	Family planning; reproductive health; maternal health

RH31	Sharma, J., & Tiwari, S. (2015). Intravenous Iron Sucrose Therapy in Iron Deficiency Anemia in Antenatal and Postnatal Patients. *JNMA; Journal of the Nepal Medical Association* , *53* (198), 104–107.	Kathmandu Hospital	Antenatal and postnatal patients	Reproductive health
RH3	Abortion Incidence and Unintended Pregnancy in Nepal Author(s): Mahesh Puri, Susheela Singh, Aparna Sundaram, Rubina Hussain, Anand Tamang and Marjorie Crowell	27 districts	Health Workers	Reproductive health
RH21	Puri, M., Singh, S., Sundaram, A., Hussain, R., Tamang, A., & Crowell, M. (2016). Abortion Incidence and Unintended Pregnancy in Nepal. *International Perspectives on Sexual and Reproductive Health* , *42* (4), 197–209. https://doi.org/10.1363/42e2116	Nepal	Women receiving MA services	Reproductive health
RH48	Valente, C. y. (2014). Access to abortion, investments in neonatal health, and sex-selection: Evidence from Nepal. *JOURNAL OF DEVELOPMENT ECONOMICS* , *107* , 225–243. https://doi.org/10.1016/j.jdeveco.2013.12.002	National	MWRAs	Reproductive health
RH16	Haviland, M. J., Shrestha, A., Decker, M. R., Kohrt, B. A., Kafle, H. M., Lohani, S., … Surkan, P. J. (2014). Barriers to sexual and reproductive health care among widows in Nepal. *International Journal of Gynecology & Obstetrics* , *125* (2), 129–133. https://doi.org/10.1016/j.ijgo.2013.10.021	Kathmandu; Kavre; Chitwan	Widows	Reproductive health
RH6	Dr. E Kennedy, A. Tamang, Dinesh Dhunghel, Romi Giri, Achala Shrestha, The Qualitative Study on Assessing Supply Side Constraints Affecting the Quality of AdolescentFriendly Health Services and the Barriers for Service Utilization in Nepal	12 districts	Adolescents, health workers, gate keepers	Reproductive health; adolescent health
RH35	Simkhada, B., Van Teijlingen, E. R., Porter, M., Simkhada, P., & Wasti, S. P. (2014). Why do costs act as a barrier in maternity care for some, but not all women? A qualitative study in rural Nepal. *International Journal of Social Economics* , *41* (8), 705–713. https://doi.org/10.1108/IJSE-03-2013-0072	NA	ANC users and non-users	Reproductive health
RH34	Shrestha, M., Shrestha, S., & Shrestha, B. (2016). Domestic violence among antenatal attendees in a Kathmandu hospital and its associated factors: a cross-sectional study. *BMC Pregnancy and Childbirth* , *16* (1), 360. https://doi.org/10.1186/s12884-016-1166-7	Kathmandu	pregnant women coming to TUTH for their antenatal check-up (third trimester)	Reproductive health
RH1	http://countryoffice.unfpa.org/nepal/drive/FacilitybasedassessmentforRHCS_August2014.pdf	39 dist	Health facilities	Reproductive health

RH26	Ranjit, E., Raghubanshi, B. R., Maskey, S., & Parajuli, P. (2018). Prevalence of Bacterial Vaginosis and Its Association with Risk Factors among Nonpregnant Women: A Hospital Based Study. International Journal of Microbiology, 2018, 8349601. https://doi.org/10.1155/2018/8349601	Lalitpur	nonpregnant wome	Reproductive health
RH36	Singh, A., Singh, A., & Thapa, S. (2015). Adverse consequences of unintended pregnancy for maternal and child health in Nepal. *Asia-Pacific Journal of Public Health* , *27* (2), NP1481-91. https://doi.org/10.1177/1010539513498769	Nepal	women aged 15 to 49 years	Reproductive health
RH28	Samdal, L. J., Steinsvik, K. R., Pun, P., Dani, P., Roald, B., Stray-Pedersen, B., & Bohler, E. (2016). Indications for Cesarean Sections in Rural Nepal. Journal of Obstetrics and Gynaecology of India, 66(Suppl 1), 284–288. https://doi.org/10.1007/s13224-016-0890-2	Nepal	WRAs	Reproductive health
RH47	Tran, N. T., Harker, K., Yameogo, W. M. E., Kouanda, S., Millogo, T., Menna, E. D., … Krause, S. (2017). Clinical outreach refresher trainings in crisis settings (S-CORT): clinical management of sexual violence survivors and manual vacuum aspiration in Burkina Faso, Nepal, and South Sudan. *Reproductive Health Matters* , *25* (51), 103–113. https://doi.org/10.1080/09688080.2017.1405678	Nepal, South Sudan	Trainers	Reproductive health
RH46	Thapa, S. (2016). A new wave in the quiet revolution in contraceptive use in Nepal: the rise of emergency contraception. *Reproductive Health* , *13* (1), 49. https://doi.org/10.1186/s12978-016-0155-7	Pokhara	ECP users	Reproductive health
RH29	Sarkar, A., Chandra-Mouli, V., Jain, K., Behera, J., Mishra, S. K., & Mehra, S. (2015). Community based reproductive health interventions for young married couples in resource-constrained settings: a systematic review. BMC Public Health, 15, 1037. https://doi.org/10.1186/s12889-015-2352-7			Reproductive Health
RH49	Campbell, R. K., Talegawkar, S. A., Christian, P., LeClerq, S. C., Khatry, S. K., Wu, L. S. F., & West, K. P. J. (2014). Seasonal dietary intakes and socioeconomic status among women in the Terai of Nepal. *Journal of Health, Population, and Nutrition* , *32* (2), 198–216.	Nepal - Terai	MWRA	Reproductive health; nutrition
RH9	Bhatta, D. N. (2014). Shadow of domestic violence and extramarital sex cohesive with spousal communication among males in Nepal. *Reproductive Health* , *11* (1), 44. https://doi.org/doi: 10.1186/1742-4755-11-44.	Nepal	WRAs	Reproductive health
RH5	Ramchandra Gaihre, Sabitri Sapkota, Ruchita Rajbhandary, Shilpa Lohani, Sexual and Reproductive Health among Young Persons' with Disability in six districts of Nepal , 2015	Kathmandu, Lalitpur, Bhaktapur, Kaski, Parsa and Morang	Young PWDs	Reproductive health; adolescent health

RH24	Rai, P., Paudel, I. S., Ghimire, A., Pokharel, P. K., Rijal, R., & Niraula, S. R. (2014). Effect of gender preference on fertility: cross-sectional study among women of Tharu community from rural area of eastern region of Nepal. *Reprod Health* , *11* (1), 15.	Sonapur VDC, Sunsari	MWRAs having one child	Reproductive health
RH37	Dhakal, L., Berg-Beckhoff, G., & Aro, A. R. (2014). Intimate partner violence (physical and sexual) and sexually transmitted infection: results from Nepal Demographic Health Survey 2011. *International Journal of Women's Health* , *6* , 75–82. https://doi.org/10.2147/IJWH.S54609	National (DHS)	MWRA 15-49	Reproductive health
RH14	Chowdhury, S. R., Bohara, A. K., & Horn, B. P. (2018). Balance of Power, Domestic Violence, and Health Injuries: Evidence from Demographic and Health Survey of Nepal. *WORLD DEVELOPMENT* , *102* , 18–29. https://doi.org/10.1016/j.worlddev.2017.09.009	National - Nepal DHS	MWRA randomly sampled for GBV module	Reproductive health
RH10	Bishwajit, G., Sarker, S., & Yaya, S. (2016). Socio-cultural aspects of gender-based violence and its impacts on women's health in South Asia [version 1; referees: 1 approved with reservations]. *F1000Research* , *5* . https://doi.org/10.12688/F1000RESEARCH.8633.1	(Bangladesh, India, Nepal, Pakistan, Sri Lanka	WRAs	Reproductive health
RH8	Reaching adolescents with health services in Nepal. (2017, February). *Bulletin of the World Health Organization* . Switzerland. https://doi.org/10.2471/BLT.17.020217	-	Adolescents	Adolescent health; reproductive health
RH17	Johnson, D. C., Bhatta, M. P., Gurung, S., Aryal, S., Lhaki, P., & Shrestha, S. (2014). Knowledge and awareness of human papillomavirus (HPV), cervical cancer and HPV vaccine among women in two distinct Nepali communities. *Asian Pacific Journal of Cancer Prevention : APJCP* , *15* (19), 8287–8293.	Khokana, a traditional Newari village in the Lalitpur District about eight kilometers south of Kathmandu, and Sanphebagar, a village development committee within Achham District in rural Far-Western Nepal	Women of reproductive age	Reproductive health
RH30	Saville, N. M., Shrestha, B. P., Style, S., Harris-Fry, H., Beard, B. J., Sen, A., … Costello, A. (2018). Impact on birth weight and child growth of Participatory Learning and Action women's groups with and without transfers of food or cash during pregnancy: Findings of the low birth weight South Asia cluster-randomised controlled trial (LBWSAT) in Nepal. PloS One, 13(5), e0194064. https://doi.org/10.1371/journal.pone.0194064	Dhanusa, Mahottari, Nepal	Married women aged 10–49 years	Reproductive Health

RH22	Puri, M., Tamang, A., Shrestha, P., & Joshi, D. (2015). The role of auxiliary nurse-midwives and community health volunteers in expanding access to medical abortion in rural Nepal. Reproductive Health Matters, 22(44 Suppl 1), 94–103. https://doi.org/10.1016/S0968-8080(14)43784-4	Rupandehi, Kailali	ANM and FCHV	Reproductive health
RH44	Tamang, A., Shah, I. H., Shrestha, P., Warriner, I. K., Wang, D., Thapa, K., … Meirik, O. (2017). Comparative satisfaction of receiving medical abortion service from nurses and auxiliary nurse-midwives or doctors in Nepal: results of a randomized trial. *Reproductive Health* , *14* (1), 176. https://doi.org/10.1186/s12978-017-0438-7			Reproductive health
RH11	Budhathoki, S. S., Bhattachan, M., Castro-Sánchez, E., Sagtani, R. A., Rayamajhi, R. B., Rai, P., & Sharma, G. (2018). Menstrual hygiene management among women and adolescent girls in the aftermath of the earthquake in Nepal. *BMC Women's Health* , *18* (1). https://doi.org/10.1186/s12905-018-0527-y	Nepal - three villages of Sindhupalchowk district	NGO, government	Reproductive health
RH12	Budhathoki, S. S., Bhattachan, M., Pokharel, P. K., Bhadra, M., & van Teijlingen, E. (2017). Reusable sanitary towels: promoting menstrual hygiene in post-earthquake Nepal. *The Journal of Family Planning and Reproductive Health Care* , *43* (2), 157–159. https://doi.org/10.1136/jfprhc-2016-101481	Nepal	NGO, government	Reproductive health
RH43	Tamang, A., Puri, M., Lama, K., & Shrestha, P. (2015). Pharmacy workers in Nepal can provide the correct information about using mifepristone and misoprostol to women seeking medication to induce abortion. *REPRODUCTIVE HEALTH MATTERS* , *22* (44, S), 104–115. https://doi.org/10.1016/S0968-8080(14)43785-6	Jhapa & Morang dist	Pharmacy workers	Reproductive health
RH13	Chaudhary, P., Vallese, G., Thapa, M., Alvarez, V. B., Pradhan, L. M., Bajracharya, K., … Goyet, S. (2017). Humanitarian response to reproductive and sexual health needs in a disaster: the Nepal Earthquake 2015 case study. *Reproductive Health Matters* , *25* (51), 25–39. https://doi.org/10.1080/09688080.2017.1405664	National level - Nepal	Adolescent girls affected by earthquake in 2015	Reproductive health

RH42	Singh, J. K., Evans-Lacko, S., Acharya, D., Kadel, R., & Gautam, S. (2018). Intimate partner violence during pregnancy and use of antenatal care among rural women in southern Terai of Nepal. *Women and Birth* , *31* (2), 96–102. https://doi.org/10.1016/j.wombi.2017.07.009	Dhanusha	Pregnant	Reproductive health
RH2	MOHP/UNFPA	11 districts	WRAs	Reproductive health
RH45	Thapa, K., Sanghvi, H., Rawlins, B., Karki, Y. B., Regmi, K., Aryal, S., … Suhowatsky, S. (2016). Coverage, compliance, acceptability and feasibility of a program to prevent pre-eclampsia and eclampsia through calcium supplementation for pregnant women: an operations research study in one district of Nepal. *BMC Pregnancy and Childbirth* , *16* , 241. https://doi.org/10.1186/s12884-016-1033-6	Dailekh	WRAs	Reproductive health
RH20	Pun, K. D., Infanti, J. J., Koju, R., Schei, B., & Darj, E. (2016). Community perceptions on domestic violence against pregnant women in Nepal: a qualitative study. *Global Health Action* , *9* , 31964.	Dhulikhel, Nepal	Men & Women aged 15-49	Reproductive Health
RH41	Singh, J. K., Acharya, D., Kadel, R., Adhikari, S., Lombard, D., Koirala, S., & Paudel, R. (2017). Factors Associated with Smokeless Tobacco Use among Pregnant Women in Rural Areas of the Southern Terai, Nepal. *Journal of Nepal Health Research Council* , *15* (35), 12–19.	Dhanusha	pregnant mothers,	Reproductive health
RH25	Ranabhat, C., Kim, C.-B., Choi, E. H., Aryal, A., Park, M. B., & Doh, Y. A. (2015). Chhaupadi Culture and Reproductive Health of Women in Nepal. *Asia-Pacific Journal of Public Health* , *27* (7), 785–795. https://doi.org/10.1177/1010539515602743	Kailali and Bardiya districts, Nepal	Women of menstrual age	Reproductive health
RH18	Johnson, D. C., Lhaki, P., Buehler Cherry, C., Kempf, M.-C., Chamot, E., Vermund, S. H., & Shrestha, S. (2017). Spatial analysis of the regional variation of reproductive tract infections and spousal migration correlates in Nepal. *Geospatial Health* , *12* (1), 513. https://doi.org/10.4081/gh.2017.513	Nepal	Women of reproductive age - married	Reproductive health

RH15	Glenton, C., Sorhaindo, A. M., Ganatra, B., & Lewin, S. (2017). Implementation considerations when expanding health worker roles to include safe abortion care: a five-country case study synthesis. *BMC Public Health* , *17* (1), 730. https://doi.org/10.1186/s12889-017-4764-z	Nepal and other countries	KIIs	Reproductive health
RH27	Raut, N. (2018). Case studies on sexual and reproductive health of disabled women in Nepal. *ASIAN JOURNAL OF WOMENS STUDIES* , *24* (1), 140–151. https://doi.org/10.1080/12259276.2018.1424700	Nepal	Women living with a disability	Reproductive health
RH7	Vanessa Woog and Anna Kågesten, The Sexual and Reproductive Health Needs of Very Young Adolescents Aged 10–14 in Developing Countries: What Does the Evidence Show? 2017	Developing countries	youth	Reproductive health; adolescent health
RH23	Rahman, M., Haque, S. E., Zahan, S., Islam, J., Rahman, M., Asaduzzaman, … Mostofa, G. (2018). Maternal high-risk fertility behavior and association with chronic undernutrition among children under age 5 y in India, Bangladesh, and Nepal: Do poor children have a higher risk? NUTRITION, 49, 32–40. https://doi.org/10.1016/j.nut.2017.10.001	India, Bangladesh, Nepal	MWRAs	Reproductive Health
RH19	Parajuli, R., & Doneys, P. (2017). Exploring the role of telemedicine in improving access to healthcare services by women and girls in rural Nepal. *TELEMATICS AND INFORMATICS* , *34* (7), 1166–1176. https://doi.org/10.1016/j.tele.2017.05.006	three rural recipient sites receiving telemedicine from Kathmandu	Women/girls	Reproductive health
RH32	Shrestha, B., Onta, S., Choulagai, B., Poudyal, A., Pahari, D. P., Uprety, A., … Krettek, A. (2014). Women's experiences and health care-seeking practices in relation to uterine prolapse in a hill district of Nepal. *BMC Womens Health* , *14* , 20. https://doi.org/10.1186/1472-6874-14-20	Dhading	uterine prolapse affected women	Reproductive health

RH33	Shrestha, B., Onta, S., Choulagai, B., Paudel, R., Petzold, M., & Krettek, A. (2015). Uterine prolapse and its impact on quality of life in the Jhaukhel-Duwakot Health Demographic Surveillance Site, Bhaktapur, Nepal. *Global Health Action* , *8* , 28771.	Bhaktapur	Uterine prolapse affected women	Reproductive health
RH4	Deepika Bhatt, Raman Shrestha, Renu Lama Sabitri Sapkota, Youth Friendly Sexual and Reproductive Health (SRH) Services: An exploratory study on the SRH experiences and needs of young people in Nepal, 2017	Morang, Kathmandu, Parsa and Kaski	Youth	Reproductive health; adolescent health
RH38	Shahabuddin, A., De Brouwere, V., Adhikari, R., Delamou, A., Bardaji, A., & Delvaux, T. (2017). Determinants of institutional delivery among young married women in Nepal: Evidence from the Nepal Demographic and Health Survey, 2011. BMJ Open, 7(4), e012446. https://doi.org/10.1136/bmjopen-2016-012446	Nepal	MWRAs	Reproductive health
RH39	Shakya, G., Singh, D. R., Ojha, H. C., Ojha, C. R., Mishra, S. K., Malla, K., … Regmi, K. (2016). Evaluation of SD Bioline HIV/syphilis Duo rapid test kits in Nepal. *BMC Infectious Diseases* , *16* (1), 450. https://doi.org/10.1186/s12879-016-1694-9		MWRAs	Reproductive health
RH40	Sharma, A., & Zhang, J. P. (2014). Risk Factors and Symptoms of Uterine Prolapse: Reality of Nepali Women. *Asian Women* , *30* (1), 81–95.	Nepal	MWRAs	Reproductive health

Specific health behaviors	Primary predictors or explanatory variables of interest	Specific SBCC intervention component discussed/described (if any)	Major finding (Summarized in 1 sentence only)	Relevant level(s) of the socio-ecological model: individual, couple, household, community, health facility, or societal/structural/policy
FAMILY PLANNING-FOCUSED				
Adolescent pregnancy	women's caste, ethnicity and other socio-demographic and individual factors with early pregnancy	N/A	No significant differences by caste; education and individual behaviors (later marriage, alcohol consumption, attending fairs) were associated Women who had secondary level education (OR: 0.34; 95% CI: 0.17, 0.65), had married after 17 years of age (OR: 0.02; 95% CI: 0.01, 0.14) and had attended fairs/clubs (OR: 0.40; CI: 0.21, 0.79) were significantly less likely to experience early age pregnancy. Women who drank alcohol (OR: 5.18; 95% CI: 1.02, 26.32) were significantly more likely to become pregnant during adolescence compared to women who did not drink alcohol. Reducing the number of adolescent pregnancies requires addressing the factors that lead to and perpetuate child marriage; keeping girls within education systems for longer; increase the knowledge and control of girls over their own reproductive health and planning; and actions that promote gender respect within relationships, decision-making and negotiation among both girls and boys.	Individual; societal
autonomy			The new 23 item scale is a reliable tool for assessing women's autonomy in developing countries	individual, couple, household, community
Birth spacing	SD; previous interval; age; caste		Overall, short birth spacing appeared to be inversely associated with advancing maternal age. For the multiparous group, Janajati and lower caste women, and those whose newborn was female, were more likely to have short birth spacing. CONCLUSION: The preceding interbirth interval was relatively long in the Kaski district of Nepal and tended to be associated with maternal age, caste, and sex of newborn infant. Optimal birth spacing programs should target Janajati and lower caste women, along with promotion of gender equality in society.	Individual; household
connections between actors establishing midwifery school			Actors promoting the profession connect through a set of facilitators and barriers, common goals and collaboration are critical for building a midwifery profession, and political priorities challenge the professional establishment	community, health facility, societal/structural/political

contraception knowledge and attitude	Education and maternal history		Women seeking abortion in Kathmandu had shorter education and a history of more pregnancies and deliveries than women in the control group.	couple, household, health facility
Contraceptive intention (sterilization)	Age, durration of marriage, and number of living children		Younger age groups, those married for longer, and those with <3 children had significantly higher intention of uptake (but we don't know about actualy acceptance)	Individual/family
Contraceptive use	Knowledge, male engagement		The included interventions highlighted the diversity of couples counseling approaches, varying from couples-based (couples counseled together) to couples-focused (partners counseled separately) approaches. In general, improved FP outcomes	Couple
Contraceptive use	Knowledge and use of FP, religion & culture		Nepal's recent gains in contraceptives prevalence rate will require strong educational interventions addressing fertility awareness, social norms around son preference, dispelling fear of side-effects while increasing the family planning method-mix. structural barriers such as limited family planning services, and lack of same gender providers	individual; societal; health system
Contraceptive use	-		Method mix skew is not a definitive indicator of lack of contraceptive choice or provider bias; it may instead reflect cultural preferences. In countries with a skewed method mix, investigation is warranted to identify the cause.	Health facility; societal
Contraceptive use	Psition in the household, food insecurity; Co residency with family members		This study shows that household position is associated with family planning use in Nepal, and that food insecurity modifies these associations–highlighting the importance of considering both factors in understanding reproductive health care use in Nepal.	Household
Contraceptive use	SD - caste, age, education (in rural areas)		Short-acting and permanent methods were most commonly used, and long-acting reversible contraceptives were the least likely to be used. Muslims were less likely to use family planning compared to other caste/ethnic groups. Usage was also lower among younger women (likely to be trying to delay or space births) than older women (likely to be trying to limit their family size). Less educated women were more likely to use permanent methods and less likely to use short-term methods.	Individual; household
Contraceptive use	after the 2004 legalization of abortion		Using four waves of rich individual-level data representative of fertile-age Nepalese women, we find robust evidence of substitution between modern contraception and abortion. This finding has important implications for public policy and foreign aid, suggesting that an effective strategy for reducing expensive and potentially unsafe abortions may be to expand the supply of modern contraceptives.	Policy
Contraceptive use	Receipt of FP counseling; SD factors (marriage; gender)		Being single, being female and having received the counselling sessions were associated with the use of FP. High use - 2/3; high knowledge (9/10)	Individual; health facility

Contraceptive use	post-birth or post-a bortion; SD factors; autonomy		The rate of discontinuation among contraceptive users was significantly higher in the postabortion group (HR 1.32; 95% CI, 1.05–1.65; P < 0.05). Women who were educated, wealthier, had used contraceptives before the index pregnancy, had two sons and had autonomy initiated contraceptive use significantly earlier in the post-abortion period than their counterparts. FROM DIGEST FROM OTHER ARTICLE: "According to a study that used population-based data, only 56% of women who had had an abortion initiated contraceptive use in the 12 months following the procedure. The survey collected monthly data on contraceptive use and pregnancy outcomes during the five years preceding the survey, as well as data on women's socioeconomic and demographic characteristics. Women in the post-abortion group had a higher rate of earlier method discontinuation in the first 12 months than did women in the postpartum group (hazard ratio, 1.3). Earlier contraceptive initiation was more likely among women who had used traditional methods or modern methods before the index pregnancy than among those who had not used a method (3.4 and 1.8, respectively). Women aged 25-30 or 30-34 had a greater likelihood of earlier contraceptive initiation than did those aged 15-24 (1.2-1.3). Compared with women with other family compositions, women with two sons were more likely to have initiated contraceptive use earlier (1.2). Women reporting autonomy in household decision making had a higher likelihood of earlier contraceptive initiation than women without autonomy (1.5). Earlier method initiation was positively associated with wealth and education (1.4-2.1), and negatively associated with having a husband who migrated for work (0.6). Unexpectedly, compared with women in the relatively remote and economically deprived midwestern region, those in the eastern, central and western regions were less likely to initiate contraceptive use earlier within 12 months (0.7-0.8)."	Individual; household; community
Contraceptive use			Discrepancy exists between current use and desire for use of FP among Muslim women in future. This highlights the inadequacy of implementing the current blanket policy and programs related to FP and offer ways to move forward with the national FP agenda ensuring the cultural rights and non-discrimination of women Husband approval and secrecy of their personal identity affect use of any method of contraception. Future plan for children and prior information regarding FP found to affect current use of FP, significantly. FP word itself was found to be stigmatizing, so women prefer replacing the word FP with culturally appropriate one. Furthermore, incorporating it into comprehensive package for improving women's health will definitely contribute to improve access and uptake of services.	individual; couple; social/cultural
Contraceptive use		NA	Education plays a vital role in the acceptance of family planning and decision making for the use of contraception required the need for the couples to know the advantages and the disadvantages of various methods and their side effects	Individual

Contraceptive use	Place of residence; sex of child; reproductive intention; side effects		Logistic regression was used to analyze the data. When cases were compared with controls, the results showed that place of residence, sex of last child, reproductive intention, experience of side effects, and follow-up practice were associated with discontinuation of the IUCD. Experience of side effects has been seen as the major reason for discontinuation. The results suggest that side effects after IUCD insertion should be properly discussed and promptly treated to reduce the discontinuation rate.	Individual; community
Contraceptive use	education		Improvement in women's status (more education and less fear of their partners) changed their contraceptive behaviors by increasing the probability of choosing condoms and decreasing the probability of choosing female sterilization in Nepal.	Individual; couple
Contraceptive use	husband-wife emotional bond, parent's experience, age, ethnicity		the variance in levels ofhusband-wife emotional bond is significantly associated with their subsequent use of contraception to avert births	Couple
Contraceptive use			Increased availability of long-acting methods in Nepal and similar settings may help to prevent unwanted pregnancy and attendant maternal mortality and morbidities. Discontinuation was far lower among the 5% of women using long-acting reversible methods (21/100 person-years) than among those using condoms (74/100 person-years), pills (61/100 person-years) and the injectable [64/100 person-years; adjusted hazard ratio (aHR)=0.32 (0.15-0.68)]. Unmarried women and those not living with their husband experienced higher contraceptive discontinuation [aHR=2.16 (1.47-3.17)]. The 1-year pregnancy rate for all women was 9/100 person-years. Pregnancy was highest among those who initiated no modern method postabortion (13/100 person-years) and condoms (12/100 person-years), and pregnancy was lowest among users of long-acting reversible methods (3/100 person-years). The poorest women were at increased pregnancy risk [aHR=2.31 (1.32-4.10)].	Individual
Contraceptive use	Socio-cultural factors; Religion	N/A	Exploring women's attitudes/ambivalence related to contraception - migration initiating use at first (for women); women using interpretive agency to interpret religious ideology in ways to support or rationalize their actions; roel of state (or lack thereof) in controlling reproduction anthropological exploration of experience and embodiment of contraception - control over reproduction, ideas about ideal family, etc.	Individual; Societal
Contraceptive use	total fertility rate	N/A	The majority of countries experience fertility decline over the period of the study despite diversity in economic development. increasing level of contraceptive use especially among poor women. Over the period of time changing marriage pattern and induced abortion are playing an important role in reducing fertility among poor women.	Societal

Contraceptive use (after abortion and post-abortion care)	Socio-demographic factors; receipt of post-abortino counseling		Large proportion left without counseling or without starting a method; if chose larcs, low uptake 6 mo after abortion; women who did not have children or who did not have husbands there were less likely to receive counseling or start using a method	Individual; Health facility
Contraceptive use (condoms)			The prevalence of condom use at last sexual intercourse was low in Nepal, however, religion, occupation, and residence type were not significant correlates of condom use; moreover, HIV knowledge, having multiple sexual partners, and mobility also did not have significant association with condom use in both males and females. Living in Far-Western region, age and wealth quintile were positively associated with condom use in both males and females. Being unmarried was the most important predictor of condom use among males. Higher education was associated with increased likelihood of condom use in females.	Individual; household; community
Contraceptive use (LARC use; LARC continuation)	Satisfaction with LARC; other background characteristics; also introduction of balanced counseling approach	Balanced counseling introduction	Women's reported satisfaction with LARC [AHR 0.23; 95 % CI 0.14-0.39, p = 0.000] was the single strongest determinant of LARC continuation after adjusting for all background characteristics	Individual
Contraceptive use (Post-abortion)	Facility-level factors; cultural factors; individual FP needs		Facility factors perceived to impact post-abortion contraceptive services included on-site availability of contraceptive supplies, dedicated and well-trained staff and adequate infrastructure; also provider biases Cultural norms emerged as influencing contraceptive demand by patients, including method use being unacceptable for women whose husbands migrate and limited decision-making power among women.	Health facility; societal
Contraceptive use (sterilization)	mobile sterilization clinics; SD factors (e.g. parity)	Mobile sterilization clinics	The odds of a male sterilization were significantly higher in a mobile clinic than those in a government hospital (odds ratio, 1.65; 95% confidence interval, 1.21-2.25). The effects remained unaltered and statistically significant after adjusting for sociodemographic and clustering effects. Random effects were highly significant, which suggest the extent of heterogeneity in vasectomy use at the community and district levels. The odds of vasectomy use in mobile clinics were significantly higher among couples residing in hill and mountain regions and among those with three or more sons or those with only daughters.	health facility; community
Contraceptive use; unmet need	SD factors; fertility desires		Fifty percent of the current pregnancies were unwanted and 96% responded not desiring children in future. Income, HIV status of spouse and those not having current living children were more likely to have fertility desire and the association remained highly significant. The PLHA who did not have son were slightly more than six times more likely to desire for children than those who already had one or more son (OR= 6.324, 95% CI 2.195-18.221). Considering the need of family planning 36% of the PLHA who did not desire to have children in the future were not using any contraceptives. FP counseling during ART and duration under ART showed highly significant association with current use of contraception in regression analysis.	Health facility

Creating health facilities			This study demonstrated that building a midwifery profession requires a political comprehensive collaborative approach supported by a political commitment. Through	health facility, societal/structural/policy
GBV	Individual level factors were measured by age, residency, education, religion and husband's education. Empowerment factors included employment status and various decision making elements. Family and societal factors included economic status, neighborhood socioeconomic disadvantage index, history of family violence, husband's controlling behavior and other issues.	N/a	oint decision making for contraception, husband's non-controlling behavior to wives and friendly feelings were emerged as less likely to be IPVAW perpetration.	HH
group antenatal visits	negative health outcomes		Available evidence suggests that group antenatal care is positively viewed by women and is associated with no adverse outcomes for them or for their babies.	individual, couple, household, community
Having children	Cultural factors; caste; social factors		Review highlights role of Brunson's book in highighting the implicit narratives that emerge about family planning in health and development programs; also highlights the way social and cultural factors intersect to influence individuals' reproductive decisions	Cross-cutting
health care access			Task shifting, strengthened roles of CHWs and volunteers, mobile teams, and inclusive structured planning forums have proved effective.	health facility, societal/structural/policy
IUD placement	Institutional Impact on PPIUCD		This study will provide critical evidence on the causal effects of hospital-based PPIUD provision on contraceptive choices and reproductive health outcomes, as well as on the feasibility, acceptability and longer run institutional impacts in three low- and middle-income countries.	couple, household, health facility, societal/structural/political

knowledge of IUDs among caregivers			Provider knowledge and attitudes towards IUD provision is low and similar across cadre and sector, supporting WHO task-sharing guidelines and validating Nepal's family planning policies.	health facility
low birth rate	antenatal care, delayed coception, low body index, SES, literacy rate	N/A	Various factors such as advanced maternal age and literacy rates are determinants of low birth rates in developing countries	All
marital violence	physical marital violence with contraception	NA	Sexual marital violence might increase use of contraception that need not require husband involvement (pill) but decrease use of methods that require his cooperation (condom) or support for mobility, funds, or time (sterilization	Individual/family
medical abortion	accessible and affordable services		This research provided further evidence and a road-map for expanding medical abortion services to rural areas by mid-level service providers in minimum clinical settings without the oversight of physicians, thus reducing complications and deaths due to unsafe abortion.	Policy/structure
meeting unmet need for family planning			"At the national level there is a dire need to multi-sectoral approach to reach our targets and for the implementation of CIP so that no one is left behind'	societal/structural/political
Metabolic syndrome			High prevalence of hyperhomocysteinemia and MetS in this low income population suggest that Nepalese children are at a greater risk of developing CVD and diabetes in future.	Policy/structure
mistimed and unwanted last pregnancy	geographic location, husbands with paid jobs, socioeconomic status		Women from the hill region reported more untimely pregnancies and women from the Western development region reported more unwanted pregnancies.	household, individual
number of children birthed	land ownership		Evidence indicates that female land ownership promotes women's wealth and decision-making authority, which could be the pathways through which their fertility is influenced	individual, household, societal/structural/political
PAC	access to services		efforts be made to provide information and supplies at the initial abortion visit and to explore other strategies for improving provision.	Policy/structure

Postpartum family planning; birth spacing	SD factors - rural/urban, hill; wealth, caste/ethnicity; fertility preferences/intentions		More than one-quarter of women who gave birth in the last five years became pregnant within 24 months of giving birth and 52% had an unmet need for family planning within 24 months postpartum. Significantly higher rates of unmet need were found among rural and hill residents, the poorest quintile, and Muslims. Despite wanting to space or limit pregnancies, nonuse of modern family planning methods by women and returned fertility increased the risk of unintended pregnancy.	Individual; household; community
Progression to third birth	Men's vs women's fertility preferences		Wome's preferences, not men's, move towards third birth. Contraceptive use does not explain influence of wive's preferences, but couple communicationmoderates influence: Wives' preferences drive third parity births among couples who had discussed how many children to have	Individual; couple; household
Provider behaviors	provider behavior and perceptions	NA	Individuals seeking to assess their own performance or behavior often look to social cues or markers to determine whether their performance is satisfactory or in need of improvement. providers were unable to accurately assess their performance against that of comparable peers.	Societal/structural and policy
quality of care for abortions	following training intervention		1. Benson J, Healy J, Dijkerman S, Andersen K. Improving health worker performance of abortion services: an assessment of post-training support to providers in India, Nepal and Nigeria. Reprod Health [Internet]. 2017 Dec 21 [cited 2018 Jul 22];14(1):154. Available from: https://reproductive-health-journal.biomedcentral.com/articles/10.1186/s12978-017-0416-0	health facility
religious inspired eating habits	hindu or muslim		Further results suggest that exposure to Ramadan fasting in utero may lead to positive selection of Muslim male infants, partially explaining the Muslim infant health advantage, but this does not fully explain the shift from Muslim advantage in infancy to Hindu advantage in childhood in all three countries.	individual, commnity, societal/structural/political
socio-economic factors, women'	giving birth at attended health facility		Stratified analysis showed that when the husband is educated, women's education seems to work partly through their autonomy in decision making.	individual, couple, household, community
Un intended or Pre-Pregnancy	Partner violence		Victims of sexual IPV are able to acquire and use family planning services, but require more support to sustain effective contraceptive use	Household/Family
unmet need for contraception or FP		N/A	There might be missed opportunities to reach MWRA with unmet FP needs through integrated services such as prenatal care, postnatal checkups, vaccination appointments, etc.	individual, couple, houshold, health facility
			Earthquake exacerbated health challenges for women; issues with access and existing vulnerabilities were worsened	Individual; community; societal
REPRODUCTIVE HEALTH-FOCUSED				

Iron deficiency anemia in pregnancy	ANC Care, diatery needs & Socio-Economic condition	NA	Iron sucrose therapy is effective in achieving target hemoglobin of 11gm/dl in 80% of patients	Individual
abortion	Knowledge and access		Despite legalization of abortion and expansion of services in Nepal, unsafe abortion is still common and exacts a heavy toll on women. Programs and policies to reduce rates of unintended pregnancy and unsafe abortion, increase access to high-quality contraceptive care and expand safe abortion services are warranted.	Policy/structure
abortion	health workers's knowledge onabortion		Despite legalization of abortion and expansion of services in Nepal, unsafe abortion is still common and exacts a heavy toll on women.	Policy/structure
Abortion, neonate	Delivery assistance and place, CAC		However, there is no evidence that improved access to abortion increases average observable investments in antenatal and perinatal health care, although sample size limitations prevent ruling out a positive effect on unobservable investments in neonatal health that matter for the neonatal mortality rate	Individual/couple
Access/seeking SRH services	Social isolation; discrimination; etc.		Widows reported facing substantial obstacles to accessing sexual and reproductive health care. Widows suspected of having sexual and reproductive health problems, or who discussed or tried to access these services, could be ostracized by their families and experience severe economic and psychological consequences. Additionally, widows feared discrimination, lack of confidentiality, and sexual harassment by male providers if their status was known. These barriers appeared to stem from the perception that sexual relationships are necessary for widows to require care for gynecologic problems.	Community; societal
Age group, mensturation	Age, gendar,		the MSC and the YF program continues to face the paradoxes of high awareness but poor practices, for instance, higher contraceptive knowledge but lesser use; higher knowledge about EC but its wider use as regular contraceptive; higher knowledge about safe abortion but preference of MA	individual/family
ANC	Cost	NA	Cost was sometimes a barrier to seeking ANC for poor rural women. It included transport costs, opportunity costs of not being able to work in the household and service-related costs (such as blood or urine tests)	Policy and structure
ANC/GBV	age, education, alcohol consumption, extramarital relationship, and controlling behavior of the husban	NA	More than one-quarter found to experience some form of DV from different perpetrators. The most common form of violence among the three types was sexual violence.	Individual/Households
Availability of services, commodities			Out of all health facilities 45.7% were offering IUDs and 39.9% were offering implant services on a regular basis. Sterilization services were regularly available only from hospitals	Policy/structure

Bacterial Vaginosis	Marital status, literature, caste/ethnicity	NA	The highest number of BV cases was seen among 30–40 years' age group (8.8%) and least BV cases were seen in patients with age group of 10–20 and 50–60 years (1.3%). Unmarried women were more prone to BV, that is, (100%), followed by married women (24.2%).	Individual/family
Birth	unintended pregnancies.		Only 35% to 36% of the mothers availed themselves of adequate prenatal care and delivery care for their recent newborns. There are also significant socioeconomic and regional disparities in Nepal	Individual+policy/structure
cesarean section	medical, social and economic implications		government of Nepal should develop specific policies and measures, such as use of rate of cesarean section without medical necessities as one of the hospital's overall rating components, and popularizing of natural childbirth.	Policy/structure
Clinical management	NA		The S-CORT is a promising model of global and local inter-agency collaboration to optimise human capital to deliver the life-saving clinical interventions of the MISP in humanitarian settings.	policy/structure
Contraceptive use	Age, Education, Marital status		ECP is popular particularly among young educated women. The overwhelming majority of users are aware ECP is for emergency only. Nearly two-thirds of the ECP users described their sexual relationship as infrequent/casual	Structural/policy
counseling, capacity building	contraceptive use, delaying pregnancy and improving pregnancy care		multi-layered community-based interventions, targeting young married women, their families and the health system can improve utilization of reproductive health services among young couples in resource-constrained settings.	Household/community
dietary intake	socioeconomic status, season		Diets of women in the Terai of Nepal lack diversity and, likely, nutrient adequacy, which may pose health risks. Key	individual, community, societal/structural/policital
domestic violence, extramarital sex, spousal communication	age, income, number of children		1. Bhatta DN. Shadow of domestic violence and extramarital sex cohesive with spousal communication among males in Nepal. Reprod Health [Internet]. 2014 Dec 13 [cited 2018 Jul 22];11(1):44. Available from: http://reproductive-health-journal.biomedcentral.com/articles/10.1186/1742-4755-11-44	individual, couple, household, community
Factors affeting SRH services	utilization of services		Majority of YPWDs were unaware of comprehensive FP methods and myths and misconception were associated with FP	Policy/structure

Fertility	gender preference		the gender preference affects the fertility and reproductive behavior of the respondents and it is necessary to reduce son preference for the health and well being of children and women.	Household/Family
Focus is on IPV and STI	IPV is predictor		Positive association between recent exposure to IPV and recent STI in last 12 months	Couple
GBV	Women's autonomy; mutual decision-making; education	N/A	Not autonomy but mtual DM that was associated with reduced risk of violence; education negatively associated with GBV At low levels of violence, the likelihood of injuries is low and injuries are generally not threatening, and as the level of violence increases, it considerably increases the probability of multiple and more serious health injuries.	HH
Gender-based violence			This study highlights the fact that GBV is essentially a socio-cultural issue which calls for developing gender-sensitive social policies and making strategic investment to promote social capital tailored especially to promote a more nuanced view of women's health and human rights.	couple, household, community, societal/structural/political
health services	access and quality		challenges for the National Adolescent Sexual and Reproductive Health Programme are in integrating services for adolescents into existing sexual and reproductive health services, quality assurance and funding	Policy/structure
Knowledge of cervical cancer; acceptance of vaccination if free	knowlede of HPV and other STIs		Overall, 53.3% (n=372) of women were aware of cervical cancer with a significant difference between Khokana and Sanphebagar (63.3% vs 43.0%; p=0.001). Overall, 15.4% (n=107) of women had heard of HPV and 32% (n=34) of these women reported having heard of the HPV vaccine. If freely available, 77.5% of the women reported willingness to have their children vaccinated against HPV. Factors associated with cervical cancer awareness included knowledge of HPV (Khokana: Odds Ratio (OR)=24.5; (95% Confidence Interval (CI): 3.1-190.2, Sanphebagar: OR=14.8; 95% CI: 3.7-58.4)) and sexually transmitted infections (Khokana: OR=6.18; 95% CI: 3.1-12.4; Sanphebagar: OR=17.0; 95% CI: 7.3- 39.7) among other risk factors.	Individual
low birth weight	group participation	PLA	Food supplements in pregnancy with PLA women's groups increased birthweight more than PLA plus cash or PLA alone but differences were not sustained.	Household/Family

medical abortion	ANM, FCHV		The safety, efficacy and acceptability of medical abortion provided by auxiliary nurse-midwives is now well established in Nepal.	Policy/structure
medical abortion	age, parity, marital status, education or occupation		Women in Nepal seeking medical abortions in early first trimester of pregnancy express equal satisfaction with the service whether provided by trained nurses and ANMs or by doctors	Health facility
menstrual health management	type of managemenet		Women who were in the age group of 15-34 years (OR = 3.14; CI = (1.07-9.20), did not go to school (OR = 9.68; CI = 2. 16-43.33), married (OR = 2.99; CI = 1.22-7.31) and previously used reusable sanitary cloth (OR = 5.82; CI = 2.33-14.55) were more likely to use the reusable sanitary cloth	individual, societal/structural/political
menstrual health tools	earthquake victim		The use of reusable sanitary towels is well accepted for menstrual hygiene management in non-disaster situations and is appropriate in post-earthquake relief in Nepal.	health facility, societal/structural/policy
mifepristone and misoprostol	Training/orientation	Training to Pharmacy workers	Improvement in knowledge was more pronounced regarding recommended regimens for up to 9 weeks pregnancy; time interval between mifepristone and misoprostol administration; and non-oral routes effective for misoprostol administration	Structural/policy
Overview of activities - RH/midwifery kits; programs on delivery, maternity, menstrual health, etc.	N/A	Overview of activities - RH/midwifery kits; programs on delivery, maternity, menstrual health, etc. Activities based on Minimum Initial Service Package for RH form Inter-Agency Working Group	Had activities that linked btw school and clinic; service outreach in camps; kits; etc.	Policy, intervention level

Partner's voilence	exposed to intimate partner violence	NA	Among 426 pregnant women, almost three out of ten women (28.9%) were exposed to intimate partner violence at some point during their pregnancy. Pregnant women who were exposed to intimate partner violence were less likely to: register for antenatal care (OR 0.31; 95% CI (0.08–0.50)), take iron and folic acid, report dietary diversity.	Family
Pelvic Organ Prolapse	Age at marriage, delivery care		surgical interventions have positive impact on the health of women as the quality of life of women suffering from POP has substantially improved following surgery	Policy/structure
preeclampsia and eclampsia	Acceptance and accessibility of Calcium	antenatal calcium supplementation intervention	calcium supplementation during pregnancy, distributed through ANC, achieved the high levels of coverage and compliance.	Individual/structural/policy
Pregnanay	access, food and care		Restrictions on women's life options, movement, and decision-making authority were considered impediments to pregnant women's health.	Family/Household
Pregnancy & smoke	Education, Caste	NA	Pregnant mothers who were smoking tobacco (AOR 6.01; 95% CI (1.88-19.23), having alcohol consumption	Individual/Community
Reproductive health problems - pain, discharge, burning, vaginal itchiness, swelling	Chhaupadi as well as livelihoods, water facility, and access during menstruation		The odds ratio with 95% confidence interval showed that respondents from Kailai 2.38 (1.36-4.18), no utilization of water resource during menstruation 2.78 (1.32-5.88), and who had Chhaupadi 14.6 (6.99-30.5) times risk to have reproductive health problems and were statistically significant (P < .05; Table 3). Among all significant predictors, the Chhaupadi was a high risk factor as reproductive health problem before 30.47 (18.66-49.77) and after final adjustment 14.6 (6.99-30.5), model IV (P < .001).	Community; Societal/structural (environment)
RTI for women	location of husband's migration; education; wealth, contraceptive use, age of marriage, rural/urban		Overall, 31.9% of the husbands were migrating for work. After adjusting for wealth, contraception use, age at first marriage, urban/rural status and husband's education, women whose husbands had been absent for a year or more in Nepal's Mid-West region (OR 1.93 95%, CI 1.02-3.67) or Far-West region (OR 2.89 95%, CI 1.24-6.73) were more likely to report RTI-like symptoms than others. Our results suggest a potential association between husbands' migration status and Nepali women reporting RTI symptoms by geographic regions.	Individual; couple; environment

Safe abortion care	HW-related factors linked with safe abortion care		Several factors appeared to affect the successful implementation of including non-physician providers to provide abortion care services. These included health workers' knowledge about abortion legislation and services; and health workers' willingness to provide abortion care. Health workers' willingness appeared to be influenced by their personal views about abortion, the method of abortion and stage of pregnancy and their perceptions of their professional roles. While managers' and co-workers' attitudes towards the use of non-physician providers varied, the synthesis suggests that female clients focused less on the type of health worker and more on factors such as trust, privacy, cost, and closeness to home. Health systems factors also played a role, including workloads and incentives, training, supervision and support, supplies, referral systems, and monitoring and evaluation. Strategies used, with varying success, to address some of these issues in the study countries included values clarification workshops, health worker rotation, access to emotional support for health workers, the incorporation of abortion care services into pre-service curricula, and in-service training strategies.	Health facility
Seeking FP/RH services	Stigma/discrimination		challenges they face in seeking sexual reproductive health information and services and their struggle to obtain rights.; intersection of disability and gender to influence their access to services	Individual; societal
sexuality education , child marriage	access to services, use of mobile technology		Some very young adolescents in developing countries are experiencing adverse sexual and reproductive health outcomes. The ages 10–14 offer an opportunity to intervene early by providing supportive policies, programs and interventions that give adolescents the tools they need to grow and thrive.	Policy/structure
Under nutrition	Nutritional behavior		With regard to the risk of chronic undernutrition, the negative effect of high-risk fertility behavior extends across all economic backgrounds and is not limited to children of mothers who were either poor or who experienced high-risk fertility.	Household/family
Use of HC services	Telemedicine		Results revealed that telemedicine reduced travel restrictions, treatment expenses, and apprehension regarding sexual and reproductive health consultation. Moreover, telemedicine decreased travel time, which helps women and girls access timely healthcare services and improve time management for household chores and other activities. The conclusion is that rural telemedicine tends to reduce gender-based barriers for women and girls in accessing healthcare services.	Individual; health facility; community
uterine prolapse	shame, having no one to share about the problem, male service provider, fear of stigma and discrimination	NA	Most participants (>85%) described the major physical discomforts of UP as difficulty with walking, standing, working, sitting, and lifting	Policy, strategies and structure

uterine prolapse	Quality of life	NA	Among 48 affected women in Phase 1, 32 had Stage II UP and 16 had either Stage I or Stage III UP showing decreased quality of life correlated significantly with Stages III	Individual, family and spousal
Youth friendly services	Gendar, Age, myths	Rocket and Space Youth Branding	MSC and the YF program continues to face the paradoxes of high awareness but poor practices, for instance, higher contraceptive knowledge but lesser use; higher knowledge about EC but its wider use as regular contraceptive; higher knowledge about safe abortion but preference of MA.	individual/family
			Maternal health programs should be designed to encourage young women to receive adequate ANC (at least four visits); moreover, health programs should target poor, less educated, rural, young women who live in mountain regions, are of Janajati ethnicity and have at least one child as such women are less likely to choose institutional delivery in Nepal.	Policy/structure
			The performance characteristics of SD Bioline HIV/Syphilis duo kit were found almost concordant with the kits being used for HIV and Syphilis diagnosis separately and its implementation in antenatal clinics/VCTs could be an added opportunity for simultaneous diagnosis of HIV and syphilis.	Policy/structure
			Despite the fact that uterine prolapse is a matter of discomfort for women which affect many aspects of daily living they hesitate to seek medical assistance due to the social positioning and conditioning.	community/household

Health behavior of interest: Contraceptive use (discontinuation, contraceptive choice, use, etc.)							
Socio-ecological level	Reference number	Factor shown to be significantly associated with contraceptive use	Location of study (specific district, region, or nationally)	Population where association found	Who not using services? Reasons not using services? Preferences for services? Trust in services?	How do culture, values, and norms influence health service utilization?	What SBC interventions really change behaviors
Individual							
	FP2	Fertility awareness; fear of side effects	Bajura, Nuwakot, Pyuthan, Rupandehi and Siraha	WRAs	Knowledge; side effects		
	FP10	Age, education	Rural areas	MWRAs	Socio-demographic		
	FP13	Relationship status (single); gender (female)	Kaski	PLHIVs (male and female)	Socio-demographic		Counseling
	FP15	Being post-birth or post-abortion group; education; previous use of a contraceptive method; number of sons; type of method; age;	National	Women post-birth or post-abortion	Socio-demographic; use of healthcare services;		
	FP20	Future fertility intentions; receipt o finformation on FP	Kapilvastu	MWRAs	Fertility intentions or preferences; Information		
	FP23	Education; information about methods; lack of information on side effects	Kavrepalanchowk	Couples	Socio-demographic; Information; side effects		
	FP25	Sex of last child, reproductive intentions, experience of side effects, and follow-up practices	Kathmandu	Women discontinuing use of LARCs	Socio-demoraphic; fertility intentions; use of healthcare services; side effects		
	FP28	Education influenced contraceptive choice	National	WRAs	Socio-demographic		
	FP35	Type of method being used; relationship status/cohabitation (factors associated with discontinuation)	Kathmandu and Terai	Women post-abortion	Use of healthcare services; socio-demographic		
	FP41	Own migration; individual interpretations of religious ideology	Gorkha and Mustang	Women using contraception	Occupation; religion (individual)	Individual reinterpretation of religion	
	FP19	Type of contraceptive method chosen; parity (no children) - related to uptake of methods post-abortion	Kathmandu and terai	Women post-abortion	Use of healthcare services; socio-demographic		
	FP22	Education; marital status	National	Men and women 15-49	Socio-demographic		
	FP21	Satisfaction with LARCs associated with continuation	National	MWRAs getting treated in Marie Stopes facilities	Satisfaction		
	FP14	Number of sons/daughters (three or more sons or those with only daughters)	National	MWRAs	Socio-demographic		

Health behavior of interest: Contraceptive use							
Socio-ecological level	Reference number	Factor shown to be significantly associated with contraceptive use	Location of study (specific district, region, or nationally)	Population where association found	Who not using services? Reasons not using services? Preferences for services? Trust in services?	How do culture, values, and norms influence health service utilization?	What SBC interventions really change behaviors
Couple							
	FP1	Couple-based and couple-focused counseling approaches	National	WRAs	Couple-based counseling		Couple-based and couple-focused counseling approaches
	FP20	Spousal approval, secrecy of women's personal identity	Kapilvastu	MWRAs	Spousal relationship		
	FP28	less fear of their partners influenced contraceptive choice	National	WRAs	Spousal relationship		
	FP31	husband-wife emotional bond	Chitwan	Couples	Spousal relationship		
	FP15	having a husband who migrated for work;	National	Women post-abortion or post-partum	Spousal migration		

Health behavior of interest: Contraceptive use							
Socio-ecological level	Reference number	Factor shown to be significantly associated with contraceptive use	Location of study (specific district, region, or nationally)	Population where association found	Who not using services? Reasons not using services? Preferences for services? Trust in services?	How do culture, values, and norms influence health service utilization?	What SBC interventions really change behaviors
Family or household							
	FP5	Household position (co-resident with in-laws or not); food insecurity	National	WRAs	Household composition; economic factors		
	FP10	Caste/ethnicity/religion	Rural areas	MWRAs	Ethnicity		
	FP15	Autonomy in household decision making; wealth	National	Women post-birth or post-abortion	Gender		
	FP35	Poverty	Kathmandu and Terai	Women post-abortion	Economic factors		
	FP22	Wealth	National	Men and women 15-49	Economic factors		

Health behavior of interest: Contraceptive use							
Socio-ecological level	Reference number	Factor shown to be significantly associated with contraceptive use	Location of study (specific district, region, or nationally)	Population where association found	Who not using services? Reasons not using services? Preferences for services? Trust in services?	How do culture, values, and norms influence health service utilization?	What SBC interventions really change behaviors
Health facility or health system							
	FP2	limited access to family planning services, lack of same gender providers	Bajura, Nuwakot, Pyuthan, Rupandehi and Siraha	WRAs	Access; provider-level		
	FP3	Method mix may reflect ack of contraceptive choice; provider bias (but not only)	National (and other countries)	WRAs	Availability; provider-level		
	FP13	receiving counseling	Kaski	PLHIVs (male and female)	Type of services provided		Counseling
	FP19	Presence of husbands at abortion services (influencing receipt of counseling, start of method)	Kathmandu and terai	Women post-abortion	Provider-level		
	FP26	Availability of contraceptive supplies, dedicated and well-trained staff and adequate infrastructure; also provider biases	Kathmandu and terai	Providers of post-abortion FP services	Availability; provider-level		
	FP14	Mobile clinic vs. government hospital (for sterilization)	National	MWRAs	Type of services provided		
	FP16	FP counseling during ART	FarWest (location not specified)	PLHIVs on ART (male and female)	Type of services provided		

Health behavior of interest: Contraceptive use							
Socio-ecological level	Reference number	Factor shown to be significantly associated with contraceptive use	Location of study (specific district, region, or nationally)	Population where association found	Who not using services? Reasons not using services? Preferences for services? Trust in services?	How do culture, values, and norms influence health service utilization?	What SBC interventions really change behaviors
Community							
	FP25	place of residence	Kathmandu	Women discontinuing use of intrauterine contraceptive devices	Location		
	FP22	Place of residence (region)	National	Men and women 15-49	Location		
	FP15	Place of residence (region)	National	Women post-abortion or post-partum	Location		
	FP14	Place of residence (ecological zone)	National	MWRAs	Location		

Health behavior of interest: Contraceptive use							
Socio-ecological level	Reference number	Factor shown to be significantly associated with contraceptive use	Location of study (specific district, region, or nationally)	Population where association found	Who not using services? Reasons not using services? Preferences for services? Trust in services?	How do culture, values, and norms influence health service utilization?	What SBC interventions really change behaviors
Societal, policy, structural, or environmental							
	FP2	Social norms around son preference	Bajura, Nuwakot, Pyuthan, Rupandehi and Siraha	WRAs	Social norms	Social norms around son preference	
	FP3	Method mix may reflect cultural preferences.	National (and other countries)	WRAs	Cultural understandings/preferences	Method mix may reflect cultural preferences.	
	FP12	Substitution between contraceptive use and abortion - expanding supply of modern methods may reduce unsafe abortion	National	WRAs	Policy		
	FP20	perceptions of the word FP and associated stigma	Kapilvastu	MWRAs	Cultural understandings/preferences	perceptions of the word FP and associated stigma	
	FP41	religious ideology in ways to support or rationalize their actions ; limited role of the state in controlling reproduction; engagement with ideas a obut control over reproduction, ideal family	Gorkha and Mustang	Women using contraception	Religious ideology; Cultural understandings/preferences	religious ideology in ways to support or rationalize their actions ; limited role of the state in controlling reproduction; engagement with ideas a obut control over reproduction, ideal family	
	FP45	increasing level of contraceptive use; changes in marriage patterns; induced abortion have led to reduced fertility among poor women.	National (and other countries)	WRAs	National trends		
	FP26	Norms that method use is unacceptable for women whose husbands migrate; limited decision-making power among women.	Kathmandu and terai	Providers of post-abortion FP services	Social norms	Norms that method use is unacceptable for women whose husbands migrate; limited decision-making power among women.	

Number	Reference	Geographical location(s)	Study type: Qualitative, quantitative , or mixed methods	Primary audience(s) or populations of interest	Sample sizes	Primary health areas of interest: Family planning and reproductive health; maternal health; neonatal health; child health; adolescent health; nutrition	Specific health behaviors	Primary predictors or explanatory variables of interest	Specific SBCC intervention component discussed/described (if any)	Major finding (Summarized in 1 sentence only)	Relevant level(s) of the socio-ecological model: individual, couple, household, community, health facility, or societal/structural/policy
MH50	Deo, K. K., Paudel, Y. R., Khatri, R. B., Bhaskar, R. K., Paudel, R., Mehata, S., & Wagle, R. R. (2015). Barriers to Utilization of Antenatal Care Services in Eastern Nepal. *Frontiers in Public Health , 3* , 197. https://doi.org/10.3389/fpubh.2015.00197	Eastern Nepal - Sunsari	Quant	Women delivering in last year	372 women	Maternal health	ANC	media, ethnicity, women's autonomy; wealth; knowledge	N/a	The study revealed that women exposed to media had higher chance of receiving four or more ANC visits with an adjusted odds ratio (aOR = 3.5, 95% CI: 1.2-10.1) in comparison to women who did not. Women from an advantaged ethnic group had more chance of having 4ANC visits than respondents from a disadvantaged ethnic group (aOR = 2.4, 95% CI: 2.1-6.9). Similarly, women having a higher level of autonomy were nearly three times more likely (aOR = 2.9, 95% CI: 1.5-5.6) and richer women were twice (aOR = 2.3, 95% CI: 1.1-5.3) as likely to have at least 4ANC visits compared to women who had a lower level of autonomy and were economically poor. CONCLUSION: Being from disadvantaged ethnicity, lower women's autonomy, poor knowledge of maternal health service and incentive upon completion of ANC, less media exposure related to maternal health service, and lower wealth rank were significantly associated with fewer than the recommended 4ANC visits. Thus, maternal health programs need to address such socio-cultural barriers for effective health care utilization.	Individual; household
MH4	Joshi et al.: Factors associated with the use and quality of antenatal care in Nepal: a population-based study using the demographic and health survey data. BMC Pregnancy and Childbirth 2014 14:94.	Nepal	Quantitative	Women giving birth in last 5 years	4079	Maternal Health	ANC	Older age, higher parity, and higher levels of education and household economic status		Half the women had four or more ANC visits and 85% had at least one visit. Health education, iron supplementation, blood pressure measurement and tetanus toxoid were the more commonly received components of ANC Older age, higher parity, and higher levels of education and household economic status of the women were predictors of both attendance at four or more visits and receipt of good quality ANC. Women who did not smoke, had a say in decision-making, whose husbands had higher levels of education and were involved in occupations other than agriculture were more likely to attend four or more visits. Other predictors of women's receipt of good quality ANC were receiving their ANC from a skilled provider, in a hospital, living in an urban area and being exposed to general media.	Individual; household; couple; health facility; community
MH95	Maleku, A., & Pillai, V. K. (2016). Antenatal Care in Nepal: A Socioecological Perspective. *Health Care for Women International , 37* (4), 496–515. https://doi.org/10.1080/07399332.2014.974807	Nepal	Secondary analysis of DHS data	giving birth in last 5 years	DHS national level	Maternal health	ANC	uptake of ANC (# of ANC visits), SES, geography	N/A	SES, geography and sociocultural factors have a direct impact on whether pregnant access ANC services	Individual; household. Community
MH96	Malqvist, M., Pun, A., Raaijmakers, H., Kc, A., Målqvist, M., Pun, A., … Ashish, K. (2017). Persistent inequity in maternal health care utilization in Nepal despite impressive overall gains. *Global Health Action , 10* (1), 1356083. https://doi.org/10.1080/16549716.2017.1356083	Nepal	Secondary analysis of DHS (2001, 2006, 2011) and MICS5 (2014) data	pregnant women		Maternal health	ANC	SES	N/A	ANC attendance increased from 49% in 2011 to 88% in 2014 and the rate of facility delivery increased from 7% to 44%. However, SES still influences gap as lower SES women 6 times more likely to deliver without skilled attendance. Literacy, wealth, place of residence	Individual, household, community
MH128	Upadhyay, P., Liabsuetrakul, T., Shrestha, A. B., & Pradhan, N. (2014). Influence of family members on utilization of maternal health care services among teen and adult pregnant women in Kathmandu, Nepal: a cross sectional study. *Reproductive Health , 11* (1), 92. https://doi.org/10.1186/1742-4755-11-92				315	Maternal health; child health	ANC (influence on decision to seek)	Age cohort		Both women and their husbands influenced the decision to utilize ANC and delivery care but husbands were more influential, especially in teens and young adults. Thus, husband's involvement is crucial as a strategy to improve maternal health care utilization in Nepa	Individual/family
MH162	Pandey, S., & Karki, S. (2014). Socio-economic and Demographic Determinants of Antenatal Care Services Utilization in Central Nepal. *International Journal of MCH and AIDS , 2* (2), 212–219.	Makwanpur	Quantitative	married women aged between 15-49 years, who had delivered their babies within one year	216	Maternal health	ANC	Age, education, income, family type; knowledge		More than half of the women were not aware of the consequences of lack of antenatal care. Age, education, income, type of family (caste, religion), type of work (service vs. agricultural work); parity; were strongly associated with the attendance at antenatal care service.	Individual; household
MH103	Saad-Haddad, G., DeJong, J., Terreri, N., Restrepo-Mendez, M. C., Perin, J., Vaz, L., … Bryce, J. (2016). Patterns and determinants of antenatal care utilization: analysis of national survey data in seven countdown countries. Journal of Global Health, 6(1), 10404. https://doi.org/10.7189/jogh.06.010404	Bangladesh, Cambodia, Cameroon, Nepal, Peru, Senegal and Uganda	Quantitative	MWRAs	Not Clear (DHS data used)	Maternal health	ANC			Inequality in ANC utilization patterns among women of different wealth statuses, educational backgrounds and places of residence need to be considered at the policy– making level across most of the countries we studied. From full text: wealth, education, husband's education, DM on women's healthcare; healthcare experiences (gestational age, birth rank, preceding birth interval)	Individual; couple; household;
MH114	Tripathi, V., & Singh, R. (2015). Ecological and socio-demographic differences in maternal care services in Nepal. *PeerJ , 2015* (9). https://doi.org/10.7717/peerj.1215	National	Quantitative	MWRAs (given birth within last 3 years)	7069	Maternal health	ANC; Safe delivery	Exposure to public messaging	Socio-economic status	socio-economic and demographic factors associated with ANC and safe delivery services across the three ecological zones in Nepal rural place of residence is at a disadvantage in receiving ANC (OR, 0.8; 95% CI [0.7–0.9]) and ensuring safe delivery (OR, 0.6; 95% CI [0.5–0.7]). Woman's education, husband's education and wealth quintile are significant factors in ensuring ANC and safe delivery services. Further, the analyses show that Budh/Muslim/Kirat/Christians are at a significant disadvantage in ensuring safe delivery (OR, 0.8; 95% CI [0.7–0.9]) as compared with Hindus. Though ecological zones lost their significance in receiving ANC, women in the Terai region are at a significant advantage in ensuring safe delivery (OR, 1.7; 95% CI [1.2–2.1]).	Individual; Household; community
MH150	Seward, N., Neuman, M., Colbourn, T., Osrin, D., Lewycka, S., Azad, K., … Prost, A. (2017). Effects of women's groups practising participatory learning and action on preventive and care-seeking behaviours to reduce neonatal mortality: A meta-analysis of cluster-randomised trials. PLoS Medicine, 14(12), e1002467. https://doi.org/10.1371/journal.pmed.1002467	India, Bangladesh, Nepal, Malawi - NOT NEPAL SPECIFIC	Qualitative	Woman's group	Ranging between 6,125 and 29,901 live births	Neonatal health; maternal health	ANC; home care behaviors			Women's groups practising PLA improve key behaviours on the pathway to neonatal mortality, with the strongest evidence for home care behaviours and practices during home deliveries. No significant effects on ANC	Individual; household
MH28	Acharya, D., Khanal, V., Singh, J. K., Adhikari, M., & Gautam, S. (2015). Impact of mass media on the utilization of antenatal care services among women of rural community in Nepal. *BMC Research Notes , 8* , 345. https://doi.org/10.1186/s13104-015-1312-8	Dhanusha District Nepal	Quant	rural women of children under 1	205	Maternal Health	ANC	exposure to mass media campaign		Mass communication exposure was correlated with positive pre-natal behaviors	societal

MH30	Acharya, P., Adhikari, T. B., Neupane, D., Thapa, K., & Bhandari, P. M. (2017). Correlates of institutional deliveries among teenage and non-teenage mothers in Nepal. *PLoS ONE* , *12* (10). https://doi.org/10.1371/journal.pone.0185667	Nepal nationwide	Quant	teenage mothers	5391	Maternal health	Institutional delivery	socio-ecoonic status, teenage pregnancy, institutionalize delivery		Teenage mothers more likely to have institutionalized birth than non-teenage mothers. Socioeconomic factors had significant role in teenage mothers who were institutionalized during birth and those who weren't. After adjusting for background characteristics, teenage mothers were found more likely to deliver at a health facility [AOR: 2.25; 95% CI: 1.10 4.59] in comparison to the non-teenage mothers. Place of residence, occupation, socioeconomic status, and frequency of ANC visits were associated with institutional delivery in both the teenage and non-teenage mothers. However, educational status, parity, birth preparedness and women autonomy had statistically significant association with institutional delivery among the non-teenage mothers only. None of the background characteristics were significantly associated with institutional delivery in teenage mothers only.	individual, household; community
MH108	Sharma, S. R., Poudyal, A. K., Devkota, B. M., & Singh, S. (2014). Factors associated with place of delivery in rural Nepal. *BMC Public Health* , *14* (1). https://doi.org/10.1186/1471-2458-14-306	Kavrepalanchowk(Meche, Chatrebanjh,Patlekhet VDC)	Quantitative	Mothers, who had delivered their child between 15 July 2010 and 14 July 2011	240	Maternal health	ANC		NA	Antenatal care service utilization of four or more times was significantly associated with the practice of institutional delivery Antenatal care practice, adverse pregnancy outcome, ethnicity and time taken to reach the health institution were significantly associated with the institutional delivery.	Individual; household; health facility
MH106	Sharma, D., Pokharel, H. P., Budhathoki, S. S., Yadav, B. K., & Pokharel, R. K. (2016). Antenatal Health Care Service Utilization in Slum Areas of Pokhara Sub-Metropolitan City, Nepal. *Journal of Nepal Health Research Council* , *14* (32), 39–46.	Pokhara	Quantitative	MWRAs	400	Maternal health	ANC	Planned pregnancy & Age	NA	Planned pregnancy and age group 20-34 had more ANC In logistic regression, ANC users were found to be more/less likely to be in age group 20 - 35 years (AOR =2.825, 95% CI: 1.166-6.843), education of spouse (AOR 0.361, 95% CI : 0.130-1.000), occupation of spouse (AOR = 0.261, 95% CI: 0.093 - 0.739), monthly income of family > 20,000Nrs (AOR = 2.190, 95% CI: 1.041-4.606), planned pregnancy (AOR = 2.417, 95% CI: 1.047 -5.609), death of child (AOR = 3.153, 95% CI: 1.112 - 8.944).	Individual; couple; household
MH112	Soubeiga, D., Gauvin, L., Hatem, M. A., & Johri, M. (2014). Birth Preparedness and Complication Readiness (BPCR) interventions to reduce maternal and neonatal mortality in developing countries: systematic review and meta-analysis. *BMC PREGNANCY AND CHILDBIRTH* , *14* . https://doi.org/10.1186/1471-2393-14-129	NA	Quantitative	pregnant women received BPCR interventions in developing countries	14 randomized studies (292 256 live births)	Maternal health	antenatal, intrapartum, postpartum care and neonatal care	birth preparedness and complication readiness behaviours.	Home Visits, women Group sessions	exposure to BPCR interventions was associated with a statistically significant reduction of 18% in neonatal mortality risk (twelve studies, RR = 0.82; 95% CI: 0.74, 0.91) and a non-significant reduction of 28% in maternal mortality risk (seven studies, RR = 0.72; 95% CI: 0.46, 1.13)	Structural/policy
MH52	Devkota, H. R., Murray, E., Kett, M., & Groce, N. (2017). Healthcare provider's attitude towards disability and experience of women with disabilities in the use of maternal healthcare service in rural Nepal. *Reproductive Health* , *14* (1), 79. https://doi.org/10.1186/s12978-017-0330-5	Rupandehi district	Mixed methods	Healthcare providers providing maternal healthcare services Women with disabilities using maternal healthcare services at last pregnancy	396 healthcare providers 18 IDIs with women with disabilities using maternal healthcare services during last pregnancy	Maternal health	Use of MNCH services; Health providers' attitudes towards disabilities in Nepal and women with disabilities' experiences seeking maternal healthcare	Type of provider (Nurses/auxiliary nurse midwives; general clinical health workers; Female Community Health Volunteers); Age; Urban/rural; Dalit vs. non-dalit; Previously providing services for women with disabilities vs. not; Receipt of disability training		Attitudes towards disability associated with provider type; age; rural/urban; and Dalit status. No variation by having previously provided services to women with disabilities or receipt of disability training. Women with disabilities had negative perceptions of providers' knowledge, attitudes, skills in providing services to those with disabilities	Health facility
MH111	Shrestha, S., Bell, J. S., & Marais, D. (2014). An analysis of factors linked to the decline in maternal mortality in Nepal. *PLoS One* , *9* (4), e93029. https://doi.org/10.1371/journal.pone.0093029	National (NDHS 96, 01, 06 & 11)	Quantitative	MWRAs	18,130	Maternal health	Maternal mortality	SBA, Access, age, education and CE group	NA	There was a significant increase from 72.5% to 83.5% in the proportion of women delivering between the ages of 20–30 years, with fewer women delivering at high risk ages (,20 and ≥35 years). Fertility dropped gradually significantly, proportion of women having attended at least secondary school increased nearly four-fold from 9.7% to 36.0%	Structural/policy
MH118	Bhatt, H., Tiwari, S., Ensor, T., Ghimire, D. R., & Gavidia, T. (2018). Contribution of Nepal's free delivery care policies in improving utilisation of maternal health services. *International Journal of Health Policy and Management* , *7* (7), 645–655. https://doi.org/10.15171/ijhpm.2018.01		Quant	NGO, government	16 837 births	Maternal health, neonatal health	Institutional delivery; ANC	Nepal Free Delivery Care Policies		Results from this study suggest that MIS and Aama policies have had a strong positive influence on the utilisation of 4 ANC visits and institutional deliveries in Nepa	Policy
MH119	Bhatta, D. N., & Aryal, U. R. (2015). Paternal factors and inequity associated with access to maternal health care service utilization in Nepal: A community based cross-sectional study. *PLoS ONE* , *10* (6). https://doi.org/10.1371/journal.pone.0130380	Kathmandu	Quant	NGO, government	2200	Maternal health, neonatal health	Institutional delivery; ANC			Paternal factors like age, household wealth, number of children, ethnicity, education, knowl- edge of danger sign during pregnancy, and husband's decision making for seeking mater- nal and child health care are crucial factors associated to maternal health service utilization.	couple, household
MH107	Sharma, S., Van Teijlingen, E., Belizi¿½n, J. M., Hundley, V., Simkhada, P., & Sicuri, E. (2016). Measuring what works: An impact evaluation of women's groups on maternal health uptake in rural Nepal. *PLoS ONE* , *11* (5). https://doi.org/10.1371/journal.pone.0155144				1,236	Maternal health	Institutional delivery; ANC; SBA; Postnatal care	education, age and parity	community-based health promotion intervention	Health promotion intervention had a positive effect on the uptake of ANC (attending at least once), iron/folic acid intake and PNC, but not on institutional delivery.	Individual, health system;
MH122	Khanal, V., Bhandari, R., Adhikari, M., Karkee, R., & Joshi, C. (2014). Utilization of maternal and child health services in western rural Nepal: a cross-sectional community-based study. *Indian Journal of Public Health* , *58* (1), 27–33. https://doi.org/10.4103/0019-557X.128162	Kapilvastu District of Nepal.	Quantitative - cross sectional survey	Mothers of children under 2 years	190 mothers having children of aged 12-23 months	Maternal health; child health	Institutional delivery; Use of MNCH services	Mothers's education, caste/community, geographical location, home or facility-based delivery	None decribed	The immunization program coverage was high, whereas maternal health service utilization remained poor; initiation of breastfeeding within an hour of birth was low (45.3%) and 63.2% had practiced exclusive breastfeeding; 69.5% of respondents delivered their child at home and 39.5% sought assistance from health workers; mothers who did not have any education, mothers from Dalit/Janjati and the Terai origin were less likely to deliver at the health facility and to seek the assistance of health workers during childbirth.	Individual, family, household level

MH159	Nonyane, B. A. S., K C, A., Callaghan-Koru, J. A., Guenther, T., Sitrin, D., Syed, U., … Baqui, A. H. (2016). Equity improvements in maternal and newborn care indicators: results from the Bardiya district of Nepal. *Health Policy and Planning* , *31* (4), 405–414. https://doi.org/10.1093/heapol/czv077	Bardiya	Quantitative	recently delivered mothers	630 respondents at baseline and endline	Maternal health	Institutional delivery; knowledge of danger signs; ANC; birth preparedness	changes in concentration indices (change in equity and changes in coverage)	Newborn Care Package Community mobilization and behaviour change activities included: (1) FM radio announcements of essential newborn messages; (2) street drama performances on newborn care messages by a professional art and music group 'Surdaya Saskritik Partisthan' (3) Billboards with newborn care messages; (4) television broadcasting at the Maternal Child Health clinic during clinic time; (5) FCHVs interacted with the community during a one-day social event, which was also broadcast live on the radio; (6) orientation of Health Facility Operation and Management committees,	We observed statistically significant improvements in equity for facility delivery [CIndex: −0.15 (−0.24, −0.06)], knowledge of at least three newborn danger signs [−0.026(−0.06, −0.003)], breastfeeding within 1 h [−0.05(−0.11, −0.0001)], at least one antenatal visit with a skilled provider [−0.25(−0.04, −0.01)], at least four antenatal visits from any provider [−0.15(−0.19, −0.10)] and birth preparedness [−0.09(−0.12, −0.06)]. The largest increases in practices were observed for facility delivery (50%), immediate drying (34%) and delayed bathing (29%). These results and those of similar studies are evidence that community-based interventions delivered by female community health volunteers can be instrumental in improving equity in levels of facility delivery and other newborn care behaviours. We recommend that equity be evaluated in other similar settings within Nepal in order to determine if similar results are observed.	Community; facility (intervention worked at multiple levels)
MH97	Maru, D., Maru, S., Nirola, I., Gonzalez-Smith, J., Thoumi, A., Nepal, P., … McClellan, M. (2017). Accountable Care Reforms Improve Women's And Children's Health In Nepal. *Health Affairs (Project Hope)* , *36* (11), 1965–1972. https://doi.org/10.1377/hlthaff.2017.0579	Accham	Quantitatie	Pregnancies in the distrit during a period of time	541 at follow-up	Maternal health	Institutional delivery; ANC; institutional birth rate; PPFP	delivery of care via public-private partnership	Public-private partnership	we found an improvement in population-level indicators linked to reducing maternal and infant mortality: receipt of four antenatal care visits (83 percent to 90 percent), institutional birth rate (81 percent to 93 percent), and the prevalence of postpartum contraception (19 percent to 47 percent). The intervention cost $3.40 per capita (at the population level) and $185 total per pregnant woman who received services.	System
MH29	Acharya, D., Singh, J. K., Adhikari, S., & Jain, V. (2016). Association between sociodemographic characteristics of female community health volunteers and their knowledge and performance on maternal and child health services in rural Nepal. *Journal of Multidisciplinary Healthcare* , *9* , 111–120. https://doi.org/10.2147/JMDH.S98700	Dhanusha district, Southern Terai, Nepal	Quant	Female Community Health Volunteers	128	Maternal Health	Provision of MNCH services; knowledge and performance of Maternal and Neonatal care components	Social demographic charactheristics		consider educational level when selecting Female Community Health Volunteers Our findings demonstrated that sociodemographic characteristics were associated independently with good knowledge of FCHVs on MCH services: education level secondary and above (adjusted odds ratio [aOR] 5.2; 95% confidence interval [CI] 2.2-12.2); residing in Mother and Infant Research Activities, nongovernmental organization working area (aOR 3.7; 95% CI 1.5-8.8); and middle caste (aOR 3.3; 95% CI 1.0-10.3). Similarly, satisfactory performance of FCHVs significantly associated with MCH services were education level secondary and above (aOR 8.9; 95% CI 3.2-24.3) and residing in Mother and Infant Research Activities working areas (aOR 9.0; 95% CI 3.5-22.6).	Community, Individual
MH132	Acharya, D., Paudel, R., Gautam, K., Gautam, S., & Upadhyaya, T. (2016). Knowledge of Maternal and Newborn Care Among Primary Level Health Workers in Kapilvastu District of Nepal. *Annals of Medical and Health Sciences Research* , *6* (1), 27–32. https://doi.org/10.4103/2141-9248.180266	Nepal	Quant	primary level health workers working on Maternal and Newborn Care	137	Maternal health; neonatal health	Provision of MNCH services; knowledge of Maternal and Neonatal care components	Knowledge of maternal and neonatal aspects (i.e. when to bath newborn, warning signs of danger in pregnancy, meaning of exclusive breast feeding)		Primary level health workers need additional education to improve knowledge gaps	health facility /
MH133	Acharya, D., & Paudel, R. (2016). Assessment of critical knowledge on maternal and newborn care services among primary level nurse mid-wives in Kapilvastu District of Nepal. *Kathmandu University Medical Journal* , *13* (52), 351–356.	Kapilvastu District of Nepal	Quant	knowledge of primary level nurse-midwives on maternal and newborn care	68	Maternal health; neonatal health	Provision of MNCH services; knowledge of Maternal and Neonatal care components	knowledge of how to stop post-partum haemorrhage, mother to child HIV transmission, and newborn care		nurse-midwives were found to have either poor or some level of knowledge in most of the components of maternal and newborn care services.	health facility /
MH91	Lama, S., & Krishna, A. K. I. (2014). Barriers in Utilization of Maternal Health Care Services: Perceptions of Rural Women in Eastern Nepal. *Kathmandu University Medical Journal (KUMJ)* , *12* (48), 253–258.	Jhapa	Qualitative. Exploratory study with FGDs and IDIs	Women of reproductiv e age, mothers		Maternal health	Use of MNCH services		Not mentioned	The barriers to maternal health care service utilization were identified as social factors like family pressure, superstition, shyness, misconception, negligence, illiteracy/lack of awareness, alcoholism, in addition to economic barriers and cultural practices. Cultural practices - related to household roles, pregnancy practices, birthing traditions, indigeneous practices, etc.	individual, household, societal/structural/politi cal
MH152	Milne, L., van Teijlingen, E., Hundley, V., Simkhada, P., & Ireland, J. (2015). Staff perspectives of barriers to women accessing birthing services in Nepal: a qualitative study. *BMC Pregnancy and Childbirth* , *15* , 142. https://doi.org/10.1186/s12884-015-0564-6	Kathmandu valley	Qualitative	Staff at hospitals serving pregnant women	20 interviews and non-participant observation	Maternal health	Institutional delivery	Individual level; facility level; economic reasons (facilitating environment)		First Phase Delays are: 1) lack of awareness that the facility/services exist; 2) women being too busy to attend; 3) poor services; 4) embarrassment; and 5) financial issues. Themes for the second Phase of Delay are: 1) birthing on the way; and 2) by-passing the facility in favour of one further away. The final Phase involved: 1) absence of an enabling environment; and 2) disrespectful care.	Individual; health facility; household
MH100	Mehata, S., Paudel, Y. R., Dariang, M., Aryal, K. K., Lal, B. K., Khanal, M. N., & Thomas, D. (2017). Trends and Inequalities in Use of Maternal Health Care Services in Nepal: Strategy in the Search for Improvements. *BioMed Research International* , *2017* . https://doi.org/10.1155/2017/5079234	Nepal	Quantitative	Mothers giving birth 3-5 years prior to survey	Varies	Maternal health	Use of MNCH services	SD factors		The percentage of mothers that received four antenatal care (ANC) consultations increased from 9% to 54%, the institutional delivery rate increased from 6% to 47%, and the cesarean section (C-section) rate increased from 1% in 1994 to 6% in 2011. Inequality reduced over time (based on wealth) All sociodemographic variables were significant predictors of use of maternal health services, out of which maternal education was the most powerful. (poverty, education, and rural/urban status significantly associated)	Individual; household; community
MH42	Bhandari, G. P., Subedi, N., Thapa, J., Choulagai, B., Maskey, M. K., & Onta, S. R. (2014). A cluster randomized implementation trial to measure the effectiveness of an intervention package aiming to increase the utilization of skilled birth attendants by women for childbirth: Study protocol. *BMC Pregnancy and Childbirth* , *14* (1). https://doi.org/10.1186/1471-2393-14-109	Nepal	Quant	NGO, government	5000	Maternal health	SBA			Paper describes an intervention that will take multiple measures to finance, mobilize, and ensure women give birth at health facilities	household, health facility

MH110	Shrestha, J. R., Manandhar, D. S., Manandhar, S. R., Adhikari, D., Rai, C., Rana, H., ... Pradhan, A. (2015). Maternal and Neonatal Health Knowledge, Service Quality and Utilization: Findings from a Community Based Quasi-experimental Trial in Arghakhanchi District of Nepal. *Journal of Nepal Health Research Council* , *13* (29), 78–83.	Arghakhanchi	Quantitative	Mothers of child < 23 Mos, Health Facilities	Mothers of <23 mos child=340, Health facilities=5	Maternal health	Use of MNCH services	Qualityof Care	NA	Along with all capacity building programs, support of essential newborn care equipment enabled the health facilities of intervention area to cater better MNC services.	Health system
MH153	Morgan, A., Jimenez Soto, E., Bhandari, G., & Kermode, M. (2014). Provider perspectives on the enabling environment required for skilled birth attendance: a qualitative study in western Nepal. *Tropical Medicine & International Health : TM & IH* , *19* (12), 1457–1465. https://doi.org/10.1111/tmi.12390	Palpa	Qualitative	Skilled birth attendants	22 SBAs; 1 FGD with 10 SBA trainees; 5 KIIs	Maternal health	Use of MNCH services	Facility level (enabling environment for SBAs)		Participants identified the essential components of an enabling environment as: relevant training; ongoing professional support; adequate infrastructure, equipment and drugs; and timely referral pathways. All SBAs who practised alone felt unable to manage obstetric complications because quality management of life-threatening complications requires the attention of more than one SBA. In Nepal, referral systems require strengthening, and the policy of posting SBAs alone, in remote clinics, needs to be reconsidered to achieve the goal of reducing maternal deaths through timely management of obstetric complications.	Health facility
MH160	Panday, S., Bissell, P., van Teijlingen, E., & Simkhada, P. (2017). The contribution of female community health volunteers (FCHVs) to maternity care in Nepal: a qualitative study. *BMC Health Services Research* , *17* (1), 623. https://doi.org/10.1186/s12913-017-2567-7	Dhading; Sarlahi	Qualitative	FCHVs; health providers	20 FCHVs, 11 health workers and 26 service users were purposefully selected and interviewed using semi-structured topic guides. In addition, four focus group discussions were held with 19 FCHVs	Maternal health	Contributions of FCHVs	Variations between hill/terai districts; looking at roles of FCHVs		All study participants acknowledged the contribution of FCHVs in maternity care. All FCHVs reported that they shared key health messages through regularly held mothers' group meetings and referred women for health checks. The main difference between the two study regions was the support available to FCHVs from the local health centres. With regular training and access to medical supplies, FCHVs in the hill villages reported activities such as assisting with childbirth, distributing medicines and administering pregnancy tests. They also reported use of innovative approaches to educate mothers. Such activities were not reported in Terai. In both regions, a lack of monetary incentives was reported as a major challenge for already overburdened volunteers followed by a lack of education for FCHVs.	Community
MH57	Doane, J., Sherpa, A., Schoenhals, S. E., Lama, L., Bjella, K., Chambers, A., ... Levy, D. (2018). BASELINE ASSESSMENT OF MATERNAL-NEONATAL HEALTHCARE QUALITY IN LOKHIM, NEPAL. *JOURNAL OF INVESTIGATIVE MEDICINE* , *66* (1), 187. https://doi.org/10.1136/jim-2017-000663.290	Solukhumbu district	Quantitative	Women giving birth in last 24 months	34	Maternal health	Quality of MNCH services	Descriptive		74% had birth preparedness plan, most had blood pressure checked, but few had anemia or urinalysis; most were home deliveries (82%); only 9% had all four parts of essential newborn care as per WHO requirements; low receipt o check-up post-birth by health worker	Health facility
MH76	Joshi, C., Torvaldsen, S., Hodgson, R., & Hayen, A. (2014). Factors associated with the use and quality of antenatal care in Nepal: a population-based study using the demographic and health survey data. *BMC Pregnancy and Childbirth* , *14* , 94. https://doi.org/10.1186/1471-2393-14-94	Nepal	Quantitative	Mothers	4,079 mothers	Maternal health	ANC (Receiving 4 or more ANC; receiving quality ANC)	SD factors; smoking; women's say in DM; husband's work outside of agriculture; media exposure; where getting ANC		Half the women had four or more ANC visits and 85% had at least one visit. Health education, iron supplementation, blood pressure measurement and tetanus toxoid were the more commonly received components of ANC. Older age, higher parity, and higher levels of education and household economic status of the women were predictors of both attendance at four or more visits and receipt of good quality ANC. Women who did not smoke, had a say in decision-making, whose husbands had higher levels of education and were involved in occupations other than agriculture were more likely to attend four or more visits. Other predictors of women's receipt of good quality ANC were receiving their ANC from a skilled provider, in a hospital, living in an urban area and being exposed to general media.	Individual; couple; household; health facility
MH124	Lewis, S., Lee, A., & Simkhada, P. (2015). The role of husbands in maternal health and safe childbirth in rural Nepal: a qualitative study. *BMC Pregnancy and Childbirth* , *15* , 162. https://doi.org/10.1186/s12884-015-0599-8	hill villages in the Gorkha district of Nepal.	Qualitative	husbands, wives, pregnant women, mothers in law, health workers	Semi-structured, in-depth interviews were conducted with husbands (n = 17), wives (n = 15), mothers-in-law (n = 3), and health workers (n = 7)	Maternal health; child health	Role of husbands in maternal health	role of husbands in maternity care and safe childbirth, their perceptions of the needs of women and children, factors which influence or discourage their participation, and how women feel about male involvement around childbirth.	Recommendation: factors to be considered when health education for husbands is planned - Male involvement needs to be recognised and addressed in health education due to the potential benefits it may bring to both maternal and child health outcomes.	In rural Nepal, male involvement in maternal health and safe childbirth is complex and related to gradual and evolving changes in attitudes taking place. Traditional beliefs influence male involvement, including the central role of women in the domain of pregnancy and childbirth. Husbands have a role to play in maternity care - they may be the only person available when a woman goes into labour. Considerable interest for the involvement of husbands was expressed by both expectant mothers and fathers but their role is shaped by their availability, cultural beliefs, and traditions. Although complex, expectant fathers do have an important role in maternal health and safe childbirth.	Individuals, couples, households, society
MH46	Choulagai, B. P., Onta, S., Subedi, N., Bhatta, D. N., Shrestha, B., Petzold, M., & Krettek, A. (2017). A cluster-randomized evaluation of an intervention to increase skilled birth attendant utilization in mid- and far-western Nepal. *Health Policy and Planning* , *32* (8), 1092–1101. https://doi.org/10.1093/heapol/czx045			Women delivering a baby in past 12 months	746 and 2098 eligible women in the intervention and control groups, respectively	Maternal health	SBA; ANC	Intervention ; intervention and control communities	8ve-component intervention that addressed previously identified barriers to SBA services in mid- and far-western Nepal (not sure if SBCC or not)	The 1-year intervention was effective in increasing the use of skilled birth care services (OR = 1.57; CI 1.19-2.08); however, the intervention had no effect on the utilization of ANC services. Calls for improved quality of care, longer interventions, mobilizing community groups more, having more human resources for the intervention	Health facility
MH164	Paudel, D., Shrestha, I. B., Siebeck, M., & Rehfuess, E. (2017). Impact of the community-based newborn care package in Nepal: A quasi-experimental evaluation. *BMJ Open* , *7* (10). https://doi.org/10.1136/bmjopen-2016-015285	10 pilot districts - had pilot districts and comparison districts	Quantitative	Recent births	Varied between pre/post and between HMIS and DHS data	Maternal health; neonatal health	Use of MNCH services; SBA; birth preparedness, antenatal care seeking, antenatal care quality, delivery by skilled birth attendant, immediate newborn care and postnatal care within 48 hours	Impact of program	community-based newborn care package (CBNCP)	Changes over time in intervention and comparison areas were similar in difference-in-differences analysis of DHS and HMIS data. Logistic regression of DHS data also did not reveal any significant improvement in combined outcomes: birth preparedness, adjusted OR (aOR)=0.8 (95% CI 0.4 to 1.7); antenatal care seeking, aOR=1.0 (0.6 to 1.5); antenatal care quality, aOR=1.4 (0.9 to 2.1); delivery by skilled birth attendant, aOR=1.5 (1.0 to 2.3); immediate newborn care, aOR=1.1 (0.7 to 1.9); postnatal care, aOR=1.3 (0.9 to 1.9). Health providers' knowledge and skills in intervention districts were fair but showed much variation between different providers and districts. CONCLUSIONS This study, while representing an early assessment of impact, did not identify significant improvements in newborn care practices and raises concerns regarding CBNCP implementation. It has contributed to revisions of the package and it being merged with the Integrated Management of Neonatal and Childhood Illness programme. This is now being implemented in 35 districts and carefully monitored for quality and impact. The study also highlights general challenges in evaluating the impacts of a complex health intervention under 'real life' conditions.	Individual
MH62	Furuta, M., Bick, D., Matsufuji, H., & Coxon, K. (2016). Spousal violence and receipt of skilled maternity care during and after pregnancy in Nepal. *Midwifery* , *43* , 7–13. https://doi.org/10.1016/j.midw.2016.10.005	Nepal	Quantitative	Women giving birth within past 5 years and completing GBV module	1375 (weighted)	Maternal health	SBA	Spousal violence; socio-dem; healthcare accessibility		Violence associated after controlling for HC access, but not once controlling for socio-dem factors. Better-educated women, women whose husbands were professionals or skilled workers and women from well-off households were more likely to receive skilled maternity care either across the pregnancy continuum or at recommended points during or after pregnancy.	Individual; couple; community; health facility
MH64	Godha, D., Gage, A. J., Hotchkiss, D. R., & Cappa, C. (2016). Predicting Maternal Health Care Use by Age at Marriage in Multiple Countries. *The Journal of Adolescent Health : Official Publication of the Society for Adolescent Medicine* , *58* (5), 504–511. https://doi.org/10.1016/j.jadohealth.2016.01.001	Nepal (and other countries)	Quantitative	Pregnant women		Maternal health	Use of MNCH services	age of marriage		The results show a negative association between child marriage and maternal health care use in most study countries, and this association is more negative in rural areas and with higher orders of parity. However, the association between age at marriage and maternal health care use is not straightforward but depends on parity and area of residence and varies across countries. The marginal effects in use of delivery care services between women married at age 14 years or younger and those married at age 18 years or older are more than 10% and highly significant in Bangladesh, Burkina Faso, and Nepal.	Couple; societal
MH137	Gopalan, S. S., Das, A., & Howard, N. (2017). Maternal and neonatal service usage and determinants in fragile and conflict-affected situations: a systematic review of Asia and the Middle-East. *BMC Women's Health* , *17* (1), 20. https://doi.org/10.1186/s12905-017-0379-x	Nepal (and other countries)	Lit review	Women; neonatal; policy-makers		Maternal health; neonatal health	Summary article	Demand and supply side		Systematic lit review, including 2 articles from Nepal. Demand-side determinants of service-usage were transportation, female education, autonomy, health awareness, and ability-to-pay. Supply-side determinants included service availability and quality, existence of community health-workers, costs, and informal payments in health facilities. Evidence is particularly sparse on MNH in acute crises, and remains limited in fragile situations generally.	Individual; household; health facility

MH166	Paudel, Y. R., Jha, T., & Mehata, S. (2017). Timing of First Antenatal Care (ANC) and Inequalities in Early Initiation of ANC in Nepal. *Frontiers in Public Health* , *5* , 242. https://doi.org/10.3389/fpubh.2017.00242	National (DHS)	Quantitative	4,148 women who had a live birth during 5 years preceding the survey	4,148 women who had a live birth during 5 years preceding the survey	Maternal health	ANC (timing)	Education, wealth, caste, pregnancy wantedness		or earlier. Among participants who had never attended school, just more than half (52%) received first ANC at 4 months or earlier, while majority of participants (97%) who had received higher education received first ANC at recommended time. Similarly, 89% of those from richest quintile and 48% of those from poorest quintile received first ANC at recommended time. In adjusted analysis, women from richest wealth quintile were significantly more likely to initiate ANC early (AOR: 3.74, 95% CI: 2.31-6.05) compared to the poorest. Similarly, women with higher level education were significantly more likely (AOR: 11.40, 95% CI: 5.05-25.73) to initiate ANC early compared to women who had never attended school. A significantly lower odds of early ANC take up was observed among madhesi other caste (AOR: 0.56, 95% CI: 0.35-0.90) compared to brahmin/chhetri women. Women whose pregnancy was unwanted were significantly less likely to attend first ANC at 4 months or early (AOR: 0.73, 95% CI: 0.58-0.93) in comparison to women whose pregnancy was wanted. CONCLUSION: The differences in the recommended timing of initiation of ANC were evident among women with different educational, economic levels, and caste/ethnic groups. Rural women were less likely to have checkups as per guidelines. The findings suggest to a need of interventions to raise female education and improve economic status of households. Targeted interventions suitable to local context and culture are equally important. Increasing access to family planning methods and reduction of unwanted pregnancy	Household; individual
MH71	Hotchkiss, D. R., Godha, D., & Do, M. (2014). Expansion in the private sector provision of institutional delivery services and horizontal equity: evidence from Nepal and Bangladesh. *Health Policy and Planning* , *29 Suppl 1* , i12-9. https://doi.org/10.1093/heapol/czt062	Nepal and Bangladesh	Quantitative	Pregnant women		Maternal health	Use of MNCH services	expansion of private sector		The results of the study suggest that the expansion of private sector supply of institutional-based delivery services in Nepal and Bangladesh has not led to increased horizontal inequity. In fact, in both countries, inequity was shown to have decreased over the study period. The study findings also suggest that the provision of government delivery services to the poor protects against increased wealth-related inequity in service use.	Health system
MH88	Kozuki, N., Katz, J., Khatry, S. K., Tielsch, J. M., LeClerq, S. C., & Mullany, L. C. (2016). Community survey on awareness and use of obstetric ultrasonography in rural Sarlahi District, Nepal. *International Journal of Gynaecology and Obstetrics: The Official Organ of the International Federation of Gynaecology and Obstetrics* , *134* (2), 126–130. https://doi.org/10.1016/j.ijgo.2016.01.015	rural Sarlahi District, Nepal	Quantitative	pregnant women and their husbands	6182 women	Maternal health	Use of obstetric ultrasonography	reproductive health, socioeconomic, and other characteristics that increased the likelihood of undergoing an obstetric ultrasonographic examination.	none mentioned	Utilization of obstetric ultrasonography in rural Nepal was very limited. Odds of receiving an ultrasonographic examination were higher among women with post-secondary education than among those with none; for those whose husbands had post secondary education than those with none; and odds were lower among women younger than 18years than among those aged 18-34years.	individuals, couples, facility
MH127	Singh, J. K., Kadel, R., Acharya, D., Lombard, D., Khanal, S., & Singh, S. P. (2018). "MATRI-SUMAN" a capacity building and text messaging intervention to enhance maternal and child health service utilization among pregnant women from rural Nepal: study protocol for a cluster randomised controlled trial. *BMC Health Services Research* , *18* (1), 447. https://doi.org/10.1186/s12913-018-3223-6	Dhanusha	Quantitative	pregnant women	66,000	Maternal health; child health	Use of MNCH services	promotion of health seeking behaviour	NA	Capacity development of health volunteers and text messaging to pregnant women through mobile phones have shown improved maternal and child health (MCH) outcomes and is associated with increased utilisation of MCH services. However, such interventions are uncommon in Nepal. We aim to carry out an intervention with the hypothesis that capacity building and text messaging intervention will increase the MCH service utilisation.	Societal/structural
MH34	Adhikari, R. (2016). Effect of Women's autonomy on maternal health service utilization in Nepal: a cross sectional study. *BMC Women's Health* , *16* , 26. https://doi.org/10.1186/s12905-016-0305-7	Nepal	Quant	Women	4,148	Maternal health	Use of MNCH services	woman autonomy		"This study found that many socio-demographic variables such as age of women, number of children born, level of education, ethnicity, place of residence and wealth index are predicators of utilizing the maternal health services of recent child. Notably, higher level autonomy was associated with higher use of maternal health services [adjusted odds ratio (aOR) =1.40; CI 1.18–1.65"	In divdual; household; community
MH43	Bhandari, T. R., Sarma, P. S., & Kutty, V. R. (2015). Utilization of maternal health care services in post-conflict Nepal. *International Journal of Women's Health* , *7* , 783–790. https://doi.org/10.2147/IJWH.S90556	Nepal	Quant	NGO, government	10,793 women in NDHS 2006 and 13,485 women in NDHS	Maternal health	Use of MNCH services	conflict in Nepal		The utilization of maternal health care services tended to increase continuously during both the armed conflict and the post-conflict period in Nepal	Societal
MH126	Samuels, F., Amaya, A. B., & Balabanova, D. (2017). Drivers of health system strengthening: Learning from implementation of maternal and child health programmes in Mozambique, Nepal and Rwanda. Health Policy and Planning, 32(7), 1015–1031. https://doi.org/10.1093/heapol/czx037	Nepal	Case study; literature review	Policy makers, donors and stakeholders - related to maternal and child health	N/A	Maternal health; child health	Use of MNCH services			At the macro level, governance with effective and committed leaders was found to be vital for achieving positive health outcomes. This was underpinned by clear commitment from donors coupled by a significant increase in funding to the health sector. At the meso level, where policies are operationalized, inter-sectoral partnerships as well as decentralization and task-shifting emerged as critical. At micro (service interface) level, community-centred models and accessible and appropriately trained and incentivized local health providers play a central role in all study countries.	Societal/structural and policy; health facility;
MH138	Haver, J., Brieger, W., Zoungrana, J., Ansari, N., & Kagoma, J. (2015). Experiences engaging community health workers to provide maternal and newborn health services: Implementation of four programs. *International Journal of Gynecology and Obstetrics* , *130* (S2), S32–S39. https://doi.org/10.1016/j.ijgo.2015.03.006	Nepal and other countries	Case study	CHWs/program implementers		Maternal health; neonatal health	Home delivery			interventions; tasks in delivery of health promotion information and distribution of commodities were transitioned to CHWs to reach underserved populations. In Nepal, trained FCHVs on additional things (FCHVs received an additional seven days of training focused on the intervention, which involved identifying pregnant women in their catchment area, providing prenatal counseling, and distributing misoprostol to women who were eight months pregnant for self-administration at home births.) Results showed that of the 840 post-intervention survey respondents, 73.2% received misoprostol, and uterotonic coverage increased from 11.6% before the intervention to 74.2% after the intervention [44]. The most extensive improvements in uterotonic coverage were observed in the two lowest wealth strata. This successful pilot program added to the increasing body of evidence demonstrating that trained CHWs could effectively deliver misoprostol for self-administration by	Health facility
MH37	Andersen, K. L., Khanal, R. C., Teixeira, A., Neupane, S., Sharma, S., Acre, V. N., & Gallo, M. F. (2015). Marital status and abortion among young women in Rupandehi, Nepal. *BMC Women's Health* , *15* , 17. https://doi.org/10.1186/s12905-015-0175-4	Rupandehi, Nepal	Quant	NGO, government	600	Maternal health	Abortion	marital status		"Findings highlight the need for providing sexual and reproductive health care information and services to young women regardless of marital status"	societal/structural/political
MH113	Tran, D. N., & Bero, L. A. (2015). Barriers and facilitators to the quality use of essential medicines for maternal health in low-resource countries: An Ishikawa framework. *Journal of Global Health* , *5* (1), 10406. https://doi.org/10.7189/jogh.05.010406	Mongolia, Nepal, Laos, DPRK, the Philippines, Vanuatu, the Solomon Island	Quantitative	MWRAs	7 reports	Maternal health	access to and use of essential medicines			The diagram highlighted the complexity between and within each health–system level that must function to ensure the availability, access, and appropriate use of medicines. The specific facilitators and barriers identified should guide the development of tailored intervention programs to improve and expand the use of these life–saving medicines.	Policy/structure

MH92	Liu, M., Nagarajan, N., Ranjit, A., Gupta, S., Shrestha, S., Kushner, A. L., … Groen, R. S. (2016). Reproductive health care and family planning among women in Nepal. *International Journal of Gynaecology and Obstetrics: The Official Organ of the International Federation of Gynaecology and Obstetrics* , *134* (1), 58–61. https://doi.org/10.1016/j.ijgo.2015.11.020	Nepal	Quantitative. two-part population-based, cross-sectional, cluster-randomized survey corroborated by a visual physical examination	Women or reproductive age, pregnant women	876 female interviewees were of reproductive age (12-50years).	Maternal health	access to care, contraceptive needs, access to surgical care, menstruation-related healthcare needs, and barriers to receiving reproductive health care	Maternal education was the strongest predictor of delivering exclusively in a healthcare facility. Odds of having a cesarean delivery were doubled by urban living. Predictor of using contraception was a history of having given birth	none	Reproductive healthcare disparities for women are manifold. Education for women appears to be a significant determinant of accessing reproductive health care.	individuals, health facilities
MH84	Khanal, V., Adhikari, M., & Karkee, R. (2014). Low compliance with iron-folate supplementation among postpartum mothers of Nepal: an analysis of Nepal Demographic and Health Survey 2011. *Journal of Community Health* , *39* (3), 606–613. https://doi.org/10.1007/s10900-013-9806-6	National	Secondary analysis of Nepal DHS 2011	postpartum mothers and their families	4,148	Maternal health	Anemia prevention in the postnatal period	SD factors; ANC; facility delivery; receipt of postnatal care		Mothers who had higher and secondary education [adjusted Odd ratio (aOR) 3.101; 95% CI (2.268-4.240)]; had attended four or more antenatal care visits [aOR 9.406; 95% CI (5.552-15.938)]; lived in Far-western development region [aOR 1.822; 95% CI (1.387-2.395)]; delivered in health facility [aOR 1.335; 95% CI (1.057-1.687)]; and attended postnatal care [aOR 2.348; 95% CI (1.859-2.965)] were more likely to take iron for 45 days of postpartum.	Individual; community
MH78	K C, A., Nelin, V., Wrammert, J., Ewald, U., Vitrakoti, R., Baral, G. N., … Malqvist, M. (2015). Risk factors for antepartum stillbirth: a case-control study in Nepal. *BMC PREGNANCY AND CHILDBIRTH* , *15* , 146. https://doi.org/10.1186/s12884-015-0567-3	Kathmandu	Quantitative	Births	307 antepartum stillbirths.	Maternal health	Antepartum stillbirth	SD, previous stillbirth, ANC visits, poverty, maternal health		An association was found between the following risk factors and antepartum stillbirth: increasing maternal age (aOR 1.0, 95 % CI 1.0-1.1), less than five years of maternal education (aOR 2.4, 95 % CI 1.7-3.2), increasing parity (aOR 1.2, 95 % CI 1.0-1.3), previous stillbirth (aOR 2.6, 95 % CI 1.6-4.4), no antenatal care attendance (aOR 4.2, 95 % CI 3.2-5.4), belonging to the poorest family (aOR 1.3, 95 % CI 1.0-1.8), antepartum hemorrhage (aOR 3.7, 95 % CI 2.4-5.7), maternal hypertensive disorder during pregnancy (aOR 2.1, 95 % CI 1.5-3.1), and small weight-for-gestational age babies (aOR 1.5, 95 % CI 1.2-2.0).	Individual; household; health facility
MH130	Bhandari, T. R., Dangal, G., Sarma, P. S., & Kutty, V. (2014). Construction and Validation of a Women's Autonomy Measurement Scale with Reference to Utilization of Maternal Health Care Services in Nepal. *Journal of the Nepal Medical Association* , *52* (195).		Quant; scale development	NGO, government	250	Family planning; reproductive health; maternal health	autonomy			The new 23 item scale is a reliable tool for assessing women's autonomy in developing countries	individual, couple, household, community
MH131	Bhandari, T. R., Kutty, V. R., Sarma, P. S., & Dangal, G. (2017). Safe delivery care practices in western Nepal: Does women's autonomy influence the utilization of skilled care at birth? *PloS One* , *12* (8), e0182485. https://doi.org/10.1371/journal.pone.0182485	Nepal - Kapilvastu district	Quant	NGO, government	250	Family planning; reproductive health; maternal health	autonomy	giving birth at attended health facility		Stratified analysis showed that when the husband is educated, women's education seems to work partly through their autonomy in decision making.	individual, couple, household, community
MH8	Pawan Acharya and Vishnu Khanal, The effect of mother's educational status on early initiation of breastfeeding: further analysis of three consecutive Nepal Demographic and Health Surve	nepal	Quantitative	WRAs	12,845	Maternal Health	Breastfeeding	mother's education		Mothers with higher education were more likely to initiate breastfeeding with the first hour of childbirth	individual/family
MH115	Sharma, I. K., & Byrne, A. (2016). Early initiation of breastfeeding: a systematic literature review of factors and barriers in South Asia. *International Breastfeeding Journal* , *11* , 17. https://doi.org/10.1186/s13006-016-0076-7	Bangladesh, India, Maldives, Nepal, Pakistan, Śri Lanka	Quantitative	MWRAs	1723 studies.	Maternal health	Breastfeeding	education of mother, occupation of mother, household wealth and family size and family type.	NA	Factors at geographical, socioeconomic, individual, and health-specific levels, such as residence, education, occupation, income, mother's age and newborn's gender, and ill health of mother and newborn at delivery, affect early or timely breastfeeding initiation in South Asia	Individual, family & Societal
MH129	Zehner, E. (2016, April). Promotion and consumption of breastmilk substitutes and infant foods in Cambodia, Nepal, Senegal and Tanzania. *Maternal & Child Nutrition* . England. https://doi.org/10.1111/mcn.12308	Cambodia, Nepal, Senegal, Tanzania	Mixed	Breast infants (Mother-infant pairs)		Maternal health; child health	Breastfeeding	breastmilk substitute		The study found that commercially produced complementary foods were promoted in half of the sampled stores in Dakar, but less than 10% of stores in Phnom Penh, Kathmandu Valley and Dar es Salaam. Point-of-sale promotions across all sites varied in content and form	Individual/family
MH157	Neuman, M., Alcock, G., Azad, K., Kuddus, A., Osrin, D., More, N. S., … Prost, A. (2014). Prevalence and determinants of caesarean section in private and public health facilities in underserved South Asian communities: cross-sectional analysis of data from Bangladesh, India and Nepal. *BMJ Open* , *4* (12), e005982.	Dhanusha and other countries (india, Bangladesh)	Quantitative	Cesarean births	45,327 births across study areas	Maternal health	Cesarean section	Location of birth/type of faility; socio-dem factors		Institutional delivery rates varied widely between settings, from 21% in rural India to 90% in urban India. The proportion of private and charitable facility births delivered by caesarean section was 73% in Bangladesh, 30% in rural Nepal, 18% in urban India and 5% in rural India. The odds of caesarean section were greater in private and charitable health facilities than in public facilities in three of four study locations, even when adjusted for pregnancy and delivery characteristics, maternal characteristics and year of delivery (Bangladesh: adjusted OR (AOR) 5.91, 95% CI 5.15 to 6.78; Nepal: AOR 2.37, 95% CI 1.62 to 3.44; urban India: AOR 1.22, 95% CI 1.09 to 1.38). We found that highly educated women were particularly likely to deliver by caesarean in private facilities in urban India (AOR 2.10; 95% CI 1.61 to 2.75) and also in rural Bangladesh (AOR 11.09, 95% CI 6.28 to 19.57). CONCLUSIONS Our results lend support to the hypothesis that increased caesarean section rates in these South Asian countries may be driven in part by the private sector. They also suggest that preferences for caesarean delivery may be higher among highly educated women, and that individual-level and provider-level factors interact in driving caesarean rates higher. Rates of caesarean section in the private sector, and their maternal and neonatal health outcomes, require close monitoring.	Individual; household; facility
MH23	Bogren, M. U., Berg, M., Edgren, L., van Teijlingen, E., & Wigert, H. (2016). Shaping the midwifery profession in Nepal - Uncovering actors' connections using a Complex Adaptive Systems framework. *Sexual & Reproductive Healthcare : Official Journal of the Swedish Association of Midwives* , *10* , 48–55. https://doi.org/10.1016/j.srhc.2016.09.008	Nepal	Qual	NGO, government	17	Family planning; reproductive health; maternal health; neonatal health	connections between actors establishing midwifery school			Actors promoting the profession connect through a set of facilitators and barriers, common goals and collaboration are critical for building a midwifery profession, and political priorities challenge the professional establishment	community, health facility, societal/structural/political

MH17	Berin, E., Sundell, M., Karki, C., Brynhildsen, J., & Hammar, M. (2014). Contraceptive knowledge and attitudes among women seeking induced abortion in Kathmandu, Nepal. *Int J Womens Health* , *6* , 335–341. https://doi.org/10.2147/ijwh.s57370	Kathmandu, nepal	Quant	NGO, government	153	Family planning; maternal health	contraception knowledge and attitude	Education and maternal history		Women seeking abortion in Kathmandu had shorter education and a history of more pregnancies and deliveries than women in the control group.	couple, household, health facility
MH20	Majumder, N., & Ram, F. (2015). Explaining the role of proximate determinants on fertility decline among poor and non-poor in Asian countries. *PLoS ONE* , *10* (2). https://doi.org/10.1371/journal.pone.0115441	Bangladesh, India, Nepal, Phillipines, Indonesia, and Vietnam	Secondary analysis of DHS data	women of maternal age, household	DHS national level household surveys	Family planning; reproductive health; maternal health	contraceptive use and induced abortion	total fertility rate	N/A	The majority of countries experience fertility decline over the period of the study despite diversity in economic development.	All
MH15	Axinn, W. G., Ghimire, D. J., & Smith-Greenaway, E. (2017). Emotional Variation and Fertility Behavior. *Demography* , *54* (2), 437–458. https://doi.org/10.1007/s13524-017-0555-5			NGO, government	5271	Family planning; maternal health	cotraception usage	husband-wife emotional bond		the variance in levels ofhusband-wife emotional bond is significantly associated with their subsequent use of contraception to avert births	couple, societal/structural/politi cal
MH24	Bogren, M., & Erlandsson, K. (2018). Opportunities, challenges and strategies when building a midwifery profession. Findings from a qualitative study in Bangladesh and Nepal. *Sexual & Reproductive Healthcare : Official Journal of the Swedish Association of Midwives* , *16* , 45–49. https://doi.org/10.1016/j.srhc.2018.02.003		Qual	NGO, government	33	Family planning; reproductive health; maternal health; neonatal health	Creating health facilities			This study demonstrated that building a midwifery profession requires a political comprehensive collaborative approach supported by a political commitment. Through	health facility, societal/structural/polic y
MH109	Sharma, S., van Teijlingen, E., Hundley, V., Angell, C., & Simkhada, P. (2016). Dirty and 40 days in the wilderness: Eliciting childbirth and postnatal cultural practices and beliefs in Nepal. *BMC Pregnancy and Childbirth* , *16* (1), 147. https://doi.org/10.1186/s12884-016-0938-4	Rural Nepal (anonymized)	Qualitative	Wome, men, health providers	five in-depth face-to-face interviews and 14 focus group discussions with mainly women, but also men and health service providers	Maternal health	Cultural beliefs around pregnancy and childbirth	Cultural beliefs		There were beliefs around (a) cord cutting & placenta rituals; (b) rest & seclusion; (c) purification, naming & weaning ceremonies and (d) nutrition and breastfeeding. - thee offered opportunities and barriers for health providers	Societal, environmental, policy
MH144	Brunson, J. (2017). Maternal, Newborn, and Child Health After the 2015 Nepal Earthquakes: An Investigation of the Long-term Gendered Impacts of Disasters. *Maternal and Child Health Journal* , *21* (12), 2267–2273. https://doi.org/10.1007/s10995-017-2350-8	Nepal	Qual	NGO, government	14	Maternal health; neonatal health; child health	dietary habits and medical center visits	earthquake victim		Though families were not channeling household funds away from health care expenses for pregnant and lactating women and children under five, the findings suggest that a delayed response by the Nepali government in administering funds for rebuild- ing combined with an ongoing fuel crisis were negatively impacting families' abilities to provide adequate shelter, warmth, cooking gas, and transportation for mothers and young children.	individual, household, health facility, societal/structural/politi cal
MH19	Puri, M., Henderson, J. T., Harper, C. C., Blum, M., Joshi, D., & Rocca, C. H. (2015). Contraceptive discontinuation and pregnancy postabortion in Nepal: a longitudinal cohort study. Contraception, 91(4), 301–307. https://doi.org/10.1016/j.contraception.2014.12.011	Nepal	Quantitative	Women receiving MA services	654	Family Planning; maternal health	discontinuation of contraception	Wealth Index, full range of contraception knowledge		Increased availability of long-acting methods in Nepal and similar settings may help to prevent unwanted pregnancy and attendant maternal mortality and morbidities.	Policy/structure
MH47	Clarke, K., Saville, N., Bhandari, B., Giri, K., Ghising, M., Jha, M., … Prost, A. (2014). Understanding psychological distress among mothers in rural Nepal: a qualitative grounded theory exploration. *BMC Psychiatry* , *14* , 60. https://doi.org/10.1186/1471-244x-14-60	Dhanusha	Qual	Mothers manageme nt of stress (among mothers identified as distressed according to the GHQ-12)	22 SSIs ; one with a local healther, 12 FGDs	Maternal health	Distress and care-seeking for physical health associated with distress/tension	Socio-cultural factors; lack of sons; gender norms; family dynamcs	N/A	Key perceived causes of distress were poor health, lack of sons, and fertility problems. Tension developed in a context of limited autonomy for women and perceived duty towards the family. Distressed mothers discussed several strategies to alleviate tension, including seeking treatment for perceived physical health problems and tension from doctors or dhamis, having repeated pregnancies until a son was delivered, manipulating social circumstances in the household, and deciding to accept their fate. Their ability to implement these strategies depended on whether they were able to negotiate with their in-laws or husbands for resources. ; sees vulnerability as manifesting itself as tension	HH; community
MH134	Benova, L., Tuncalp, O., Moran, A. C., & Campbell, O. M. R. (2018). Not just a number: examining coverage and content of antenatal care in low-income and middle-income countries. *BMJ Global Health* , *3* (2), e000779. https://doi.org/10.1136/bmjgh-2018-000779	10 Low or Middle Income Countries	Quant	NGO, government	between 2857 (Nepal) to 16 721 (Nigeria)	Maternal health; neonatal health	doctor visits	location		Our findings suggest that even among women with patterns of care that complied with global recommendations, the content of care was poor.	health facility
MH31	Acharya, P., & Khanal, V. (2015). The effect of mother's educational status on early initiation of breastfeeding: further analysis of three consecutive Nepal Demographic and Health Surveys. *BMC Public Health* , *15* , 1069. https://doi.org/10.1186/s12889-015-2405-y	Nepal - nationwide	Quant	Nepali mothers	12845	Maternal Health	early breastfeeding	mother's education		Maternal education was associated with a higher likelihood of early initiation of breastfeeding in each survey. Pooled	individual, health facility
MH125	Marphatia, A. A., Ambale, G. S., & Reid, A. M. (2017). Women's Marriage Age Matters for Public Health: A Review of the Broader Health and Social Implications in South Asia. *Frontiers in Public Health* , *5* , 269. https://doi.org/10.3389/fpubh.2017.00269	Bangladesh, India, Nepal, and Pakistan	Literature review of peer-reviewed and grey literature	young girls and women susceptible to early marriage	N/A	Maternal health; child health	early child bearing	fertility, access to health care, child nutrition, socio-cultural factors, etc.	N/A	Association of early marriage, education and SES found to influence public health outcomes.	All
MH148	Bhandari, S., Sayami, J. T., Thapa, P., Sayami, M., Kandel, B. P., & Banjara, M. R. (2016). Dietary intake patterns and nutritional status of women of reproductive age in Nepal: findings from a health survey. *Archives of Public Health = Archives Belges de Sante Publique* , *74* , 2. https://doi.org/10.1186/s13690-016-0114-3	Mountain, Hill and Terai regions of Nepa	Quant	NGO, government	21,111	Maternal health; nutrition	eating habits and nutritional status	age, employment status, location		The nutritional status of women of reproductive age is still poor especially in Terai and the dietary intake pattern is not adequate. It	household, community
MH101	Rishal, P., Joshi, S. K., Lukasse, M., Schei, B., & Swahnberg, K. (2016). "They just walk away" - women's perception of being silenced by antenatal health workers: a qualitative study on women survivors of domestic violence in Nepal. Global Health Action, 9, 31838.	Dhulikhel and Kathmandu	Qualitative	Experience of violence during pregnancy and who utilized ANC	12 IDIs	Maternal health	experience of domestic violence	GBV		Experiences concealed due to fear of insults, discrimination, attitudes from providers; The women wished that the health care providers were compassionate and asked them about their experience, ensured confidentiality and privacy, and referred them to services that is free of cost.	Couple; health facility
MH102	Rishal, P., Pun, K. D., Darj, E., Joshi, S. K., Bjorngaard, J. H., Swahnberg, K., … Lukasse, M. (2017). Prevalence and associated factors of domestic violence among pregnant women attending routine antenatal care in Nepal. Scandinavian Journal of Public Health, 1403494817723195. https://doi.org/10.1177/1403494817723195	Dhulikhel and Kathmandu	Quantitative	Pregnant women 12-28 weeks of gestation attening ANC	2004	Maternal health	experience of domestic violence	Socio-demographic factors; women's empowerment		more than 1/5 had experienced violence; less than 2% reported physical violence DURING pregnancy. Women of young age and low socio-economic status were more likely to have experienced DV. Women who reported having their own income and the autonomy to use it were at significantly lower risk of DV compared to women with no income. ; often experience of violencenot disclosed	Couple

MH67	Gurung, S., & Acharya, J. (2016). Gender-based Violence Among Pregnant Women of Syangja District, Nepal. *Osong Public Health and Research Perspectives* , *7* (2), 101–107. https://doi.org/10.1016/j.phrp.2015.11.010	Syangja	Quantitative	Pregnant women attending antenatal care	202	Maternal health	experience of GBV	Descriptive		91% reported GBV Most of the respondents (87%) faced economic violence followed by psychological (53.8%), sexual (41.8%), and physical (4.3%) violence. Women experienced: (1) psychological violence with most complaining of angry looks followed by jealousy or anger while talking with other men, insults using abusive language and neglect; (2) economic violence with most complaining of financial hardship, denial of basic needs and an insistence on knowing where respondents were and restricting them to parents' home or friends/relatives' houses (jealousy); (3) physical violence by slapping, pushing, shaking, or throwing something at her, twisting arm or pulling hair, and punching and kicking; and (4) sexual violence by physically forcing her to have sexual intercourse without consent, and hurting or causing injury to private parts. Most (100%) of the perpetrators were found to be husbands and mothers-in-law (10.7%) who violated them rarely.	Individual; household
MH85	Khanal, V., Adhikari, M., Karkee, R., & Gavidia, T. (2014). Factors associated with the utilisation of postnatal care services among the mothers of Nepal: analysis of Nepal demographic and health survey 2011. *BMC Women's Health* , *14* , 19. https://doi.org/10.1186/1472-6874-14-19	National	Secondary analysis - 2011 Nepal DHS data	Policy makers, Mothers	4079 mothers	Maternal health	Factors assocated with accessing postnatal care	Urban or Rural households, mother's education and occupation, partner's education and occupation, antenatal care visits, delivery at facility or home	None described but recommendation provided: Increasing utilisation of the recommended four or more antenatal visits, delivery at health facility and increasing awareness and access to services through community-based programs especially for the rural, poor, and less educated mothers may increase postnatal care attendance in Nepal.	The majority of postnatal mothers in Nepal did not seek postnatal care. Mothers who were from urban areas, from rich families, who were educated, whose partners were educated, who delivered in a health facility, who had attended a four or more antenatal visits, and whose delivery was attended by a skilled attendant were more likely to report attending immediate postnatal care and at least one postnatal care visit. On the other hand, mothers who reported agricultural occupation, and whose partners performed agricultural occupation were less likely to have attended immediate postnatal care or at least one postnatal care visit.	Individual, couple, facility
MH1	nepal.unfpa.org	National	Quantitative	WRAs	different (mics, ndhs)	Maternal Health	FP, Maternal health	use of LARC, midwifery education		Delaying pregnancy is an important means of lowering maternal mortality: young girls' bodies are not ready to give birth.	Policy/structure
MH25	Byrne, A., Hodge, A., Jimenez-Soto, E., & Morgan, A. (2014). What Works? Strategies to Increase Reproductive, Maternal and Child Health in Difficult to Access Mountainous Locations: A Systematic Literature Review. *PLoS One* , *9* (2). https://doi.org/10.1371/journal.pone.0087683	Afghanistan, Bolivia, Ethiopia, Guatemala, Indonesia, Kenya, Kyrgyzstan, Nepal, Pakistan, Papua New Guinea and Tajikistan	Systematic Review	NGO, government	4130 articles	Family planning; reproductive health; maternal health; neonatal health	health care access			Task shifting, strengthened roles of CHWs and volunteers, mobile teams, and inclusive structured planning forums have proved effective.	health facility, societal/structural/policy
MH33	Adhikari, R., Smith, P., Sharma, J. R., & Chand, O. B. (2018). New forms of development: branding innovative ideas and bidding for foreign aid in the maternal and child health service in Nepal. *Globalization and Health* , *14* (1), 33. https://doi.org/10.1186/s12992-018-0350-0	Nepal	Qual	NGO's		Maternal health	how NGO's obtain funding and the use of branding in that process			foreign aid for the provision of MCH services in Nepal is channeled increasingly to its beneficiaries, not through the Government system, but rather via various intermediary organisations, employing branding and bidding processes.	societal/structural/political
MH158	Neupane, S., & Nwaru, B. I. (2014). Impact of prenatal care utilization on infant care practices in Nepal: a national representative cross-sectional survey. *European Journal of Pediatrics* , *173* (1), 99–109. https://doi.org/10.1007/s00431-013-2136-y	National	Quantitative	women age 15–49 years old who had delivered within three years prior to the survey	4,136	Maternal health; neonatal health	Infant care practices	Prenatal care visits; having SBA at prenatal care		children of mothers with no prenatal care were at increased risk of neonatal death (OR = 2.03, 95 % CI = 1.28–3.23). Compared to women with no prenatal care, those with more than three visits were more likely to immunize their children (OR = 2.66, 95 % CI = 2.10–3.36) and more likely to initiate breastfeeding within 1 h after birth (OR = 1.25, 95 % CI = 1.02–1.54). Having skilled attendants at prenatal care and at birth was also associated with better infant care practices. Conclusion:Neonatal mortality is still high in Nepal. Adequate prenatal care utilization may represent a key preventative strategy, which, in the present study, was associated with improvement in neonatal mortality, higher likelihood of having immunization, and initiation of breastfeeding within 1 h after birth. Public health awareness programs and interventions are needed in Nepal to increase the utilization of prenatal care as well as delivery assisted by skilled attendants.	Individual; Facility
MH7	.Pandey S (2018) Women's knowledge about the conditional cash incentive program and its association with institutional delivery in Nepal. PLoS ONE 13(6):e0199230.https://doi.org/ 10.1371/journal.pone.0199230	Nepal	Quantitative	WRAs	4,036	Maternal Health	Institutional delivery	education, wealth, urban status, first birth, the number of antenatal care visits, and exposure to news media		The knowledge of the SDIP was associated with nearly three-fold increase in institutional delivery. Nearly 90% of the women who had delivered in the past five years knew about the SDIP.	Individual; household; community
MH9	Shahabuddin ASM, De Brouwere V, Adhikari R, et al. Determinants of institutional delivery among young married women in Nepal: Evidence from the Nepal Demographic and Health Survey, 2011. BMJ Open 2017;7:e012446. doi:10.1136/ bmjopen-2016-012446	Nepal	Quantitative	ever-married young women (15–24 years of age) who had had at least one birth in the 5 years	1662	Maternal health	Institutional delivery	decision-making autonomy, accessibility		inequality exists in the use of institutional delivery among young married women in Nepal. Several factors were associated with and influenced young women's use of institutional delivery. Among all factors, receipt of an adequate number (at least four) of ANC visits had a strong and positive association with the use of institutional delivery.	Individual; family; health facility
MH11	.Acharya P, AdhikariTB, Neupane D, Thapa K, Bhandari PM (2017) Correlates of institutionaldeliveries among teenageand nonteenage mothers in Nepal. PLoS ONE 12(10): e0185667.https://doi.org/10.1371/journal. pone.0185667	Nepal	Quantitative	Teenage mothers	381	Maternal health	Institutional delivery	Place of residence, occupation, socieconomic status, and frequency of ANC visits		While the association of most of the background characteristics with institutional delivery was uniform for both teenage and non-teenage mothers, the association with educational status, parity, birth preparedness and women autonomy was significant only for non-teenage mothers.	Individual; household; community
MH45	Choulagai, B. P., Aryal, U. R., Shrestha, B., Vaidya, A., Onta, S., Petzold, M., & Krettek, A. (2015). Jhaukhel-Duwakot Health Demographic Surveillance Site, Nepal: 2012 follow-up survey and use of skilled birth attendants. *Glob Health Action* , *8* , 29396. https://doi.org/10.3402/gha.v8.29396	Bhaktapur - Jhaukhel-Duwakot Health Demographic Surveillance Site	Quant	Women who delivered baby in past 2 years	3505 HHs; 434 women delivering baby in past 2 years	Maternal health	Institutional delivery	ANC; use of transport to reach facility;	N/A	Women who accessed antenatal care and used transport (e.g. bus, taxi, motorcycle) to reach a health facility were more likely to access institutional delivery. Low adequate use of postnatal care	Health facility
MH49	Das, S., Alcock, G., Azad, K., Kuddus, A., Manandhar, D. S., Shrestha, B. P., … Osrin, D. (2016). Institutional delivery in public and private sectors in South Asia: a comparative analysis of prospective data from four demographic surveillance sites. *BMC PREGNANCY AND CHILDBIRTH* , *16* . https://doi.org/10.1186/s12884-016-1069-7	National - in demographic surveillance sites in Bangladesh, Nepal, and India	Quant	Pregnant women	52750 deliveries	Maternal health	Institutional delivery	household asset index, maternal schooling, maternal age, and parity	N/A	Institutional delivery increased with wealth and education; In Bangladesh and urban India, the proportion of deliveries in the private sector increased with wealth, maternal education, and age. The opposite was observed in rural India and Nepal.	Individual; household
MH55	Dhakal, P., Shrestha, M., Baral, D., & Pathak, S. (2018). Factors affecting the place of delivery among mothers residing in Jhorahat VDC, Morang, Nepal. *International Journal of Community Based Nursing and Midwifery* , *6* (1), 2–11.	Jhorahat VDC, Morang district, Nepal	Mixed methods	Mothers	93 mothers; 2 FGDs with decision-makers and FCHVs;	Maternal health	Institutional delivery	Socio-demographic factors; ease/convenience; safety		Ease/convenience associated with home delivery; safety associated with institutional delivery; "there was a significant association between caste, education of mothers, education of spouse, occupation of spouse, per capita income, time to reach the nearest health center, parity, previous place of delivery, number of antenatal visit, knowledge about place of delivery, planned place of delivery, and place of delivery."	Individual; couple; household; health facility
MH56	Dixit, P., Khan, J., Dwivedi, L. K., & Gupta, A. (2017). Dimensions of antenatal care service and the alacrity of mothers towards institutional delivery in South and South East Asia. *PloS One* , *12* (7), e0181793. https://doi.org/10.1371/journal.pone.0181793	National (DHS) - compares across south asia	Quantitative	Women having given birth		Maternal health	Institutional delivery	ANC visits (timing and # of visits; specific ANC procedures received)		Stronger association between specific ANC procedures received and institutional delivery than between timing/# of visits and institutional delivery (Across settings)	Individual
MH58	Ensor, T., Bhatt, H., & Tiwari, S. (2017). Incentivizing universal safe delivery in Nepal: 10 years of experience. *Health Policy and Planning* , *32* (8), 1185–1192. https://doi.org/10.1093/heapol/czx070	National (DHS)	Quantitative	Individuals having institutional deliveries		Maternal health	Institutional delivery	Incentive programs (financing initiatives)		The beneficial impact of maternal financing policies in Nepal is skewed towards areas and households that are geographically more accessible and wealthy.	Policy

MH61	Freidoony, L., Ranabhat, C. L., Kim, C.-B., Kim, C.-S., Ahn, D.-W., & Doh, Y. A. (2018). Predisposing, enabling, and need factors associated with utilization of institutional delivery services: A community-based cross-sectional study in far-western Nepal. *Women and Health* , *58* (1), 51–71. https://doi.org/10.1080/03630242.2016.1267689	Kailali district	Quantitative	Mothers giving birth in past 5 years	500	Maternal health	Institutional delivery	Socio-dem factors; health status; ANC visits;		Primiparity, having a secondary or higher education level, living in the Durgauli village, having husbands with occupations other than agriculture or professional/technical jobs, and having attended four or more antenatal care (ANC) visits had significantly increased use of institutional deliveries. Also, belonging to the richest 20% of the community and having experienced pregnancy complications were marginally significantly associated.	Individual; couple; community
MH70	Hodge, A., Byrne, A., Morgan, A., & Jimenez-Soto, E. (2014). Utilisation of Health Services and Geography: Deconstructing Regional Differences in Barriers to Facility-Based Delivery in Nepal. *Maternal and Child Health Journal* , *19* (3), 566–577. https://doi.org/10.1007/s10995-014-1540-x	Nepal	Quantitative	Community level		Maternal health	Institutional delivery	Factors that influence health behaviors; distance to facilities; mother's birth history		The mean coverage of facility-based deliveries was 18.6 and 36.3 % in the mountains region and the rest of Nepal, respectively. Between 54.8 and 74.1 % of the regional coverage gap was explained by differences in observed characteristics. Factors influencing health behaviours (proxied by mothers' education, TV viewership and tobacco use, and household wealth) and subjective distance to the health facility were the major factors, contributing between 52.9 and 62.5 % of the disparity. Mothers' birth history was also noteworthy.	Individual; community; health facility
MH73	Huda, T. M., Hayes, A., & Dibley, M. J. (2018). Examining horizontal inequity and social determinants of inequality in facility delivery services in three South Asian countries. *Journal of Global Health* , *8* (1), 10416. https://doi.org/10.7189/jogh.08.010416	Nepal and other countries	Quantitative	Women in DHS (and HH data)	Varies	Maternal health	Institutional delivery	Horizontal inequities		The decomposition analysis revealed that facility delivery is driven mostly by the social determinants of health rather than the individual health risk. Household socioeconomic condition, parental education, place of residence and parity emerged as the most important factors.	Individual; household; community
MH75	Joseph, G., da Silva, I. C. M., Fink, G., Barros, A. J. D., & Victora, C. G. (2018). Absolute income is a better predictor of coverage by skilled birth attendance than relative wealth quintiles in a multicountry analysis: comparison of 100 low- and middle-income countries. *BMC PREGNANCY AND CHILDBIRTH* , *18* . https://doi.org/10.1186/s12884-018-1734-0	Nepal and other countries	Quantitative	Women	Varies	Maternal health	Institutional delivery	Absolute income vs. wealth		Information on income allowed identification of countries - such as Burkina Faso, Cambodia, Egypt, Nepal and Rwanda - which were well above what would be expected solely from changes in income. Conclusion: Absolute income is a better predictor of SBA and institutional delivery coverage than the relative measure of quintiles of wealth index and may help identify countries where increased coverage is likely due to interventions other than increased income.	household
MH77	Joshi, D., Baral, S. C., Giri, S., & Kumar, A. M. V. (2016). Universal institutional delivery among mothers in a remote mountain district of Nepal: what are the challenges? *Public Health Action* , *6* (4), 267–272. https://doi.org/10.5588/pha.16.0025	Mugu	Quantitative	Mothers	275	Maternal health	Institutional delivery	Access; media; parity; preferences; perceived quality of care		Multivariate logistic regression analysis showed that women who resided within 1 h distance from the birthing centre, had adequate mass media exposure or had only one child were more likely to deliver in hospital. Reasons for non-institutional delivery (n = 178) were related to geographical access (49%), personal preferences (18%) and perceived poor quality care (4%). Mothers who accessed institutional delivery (n = 97) also reported difficulties related to travel (60%), costs (28%), dysfunctional health system (18%) and unfriendly attitudes of the health-care providers (7%).	Individual; household; health facility
MH79	Karkee, R., Baral, O. B., Khanal, V., & Lee, A. H. (2014). The role of obstetric knowledge in utilization of delivery service in Nepal. *Health Education Research* , *29* (6), 1041–1048. https://doi.org/10.1093/her/cyu059	central hills district of Nepal	Quantitative	Pregnant women with more than 5 mo gestation	701	Maternal health	Institutional delivery	Knowledge of obstetrics; Birth Preparedness and Complication Readiness program;	Birth Preparedness and Complication Readiness program	In particular, women who acknowledged that unexpected problems could occur during pregnancy and childbirth were more likely (odds ratio [OR] 5.83, 95% confidence interval [CI] 2.95-11.52) to deliver at a health facility than others unaware of the possible consequences. Similarly, women who knew any antepartum danger sign (OR 2.16, 95% CI: 1.17-3.98), any intrapartum danger sign (OR 3.80, 95% CI: 2.07-6.96) and any postpartum danger sign (OR 3.47 95% CI: 1.93-6.25), tended to deliver at a health facility.	Individual
MH81	Karkee, R., Lee, A. H., & Khanal, V. (2014). Need factors for utilisation of institutional delivery services in Nepal: an analysis from Nepal Demographic and Health Survey, 2011. *BMJ Open* , *4* (3), e004372. https://doi.org/10.1136/bmjopen-2013-004372	Nepal	Quantitative	Subset of ever-married women	4079	Maternal health	Institutional delivery	antenatal care visits and birth preparedness activities;		low ANC; low facility delivery; low birth prep activities After adjusting for external, predisposing and enabling factors, women who made more than four antenatal care visits were five times more likely to deliver at a health facility when compared to those who paid no visit (adjusted OR 4.94, 95% CI 3.14 to 7.76). Similarly, the likelihood for facility delivery increased by 3.4-fold among women who prepared for at least two of the four activities compared to their counterparts who made no preparation (adjusted OR 3.41, 95% CI 2.01 to 5.58).	Individual
MH86	Khatri, R. B., Dangi, T. P., Gautam, R., Shrestha, K. N., & Homer, C. S. E. (2017). Barriers to utilization of childbirth services of a rural birthing center in Nepal: A qualitative study. *PloS One* , *12* (5), e0177602. https://doi.org/10.1371/journal.pone.0177602	rural community of Rukum district, Nepal	Qualitative study	Pregnant women, their families, health workers at birthing centers	26 in-depth interviews with service users and providers, and three focus group discussions with community key informants in a rural community of Rukum district. The Adithya Cattamanchi logic model was used as a guiding framework for data analysis.	Maternal health	Institutional delivery	Quality of services, human resources, governance, health system challenges, geography, birth preparedness, cultural practices and traditions	Recommendation: awareness-raising activities, local resource mobilization, ensuring access to skilled providers and equipment and other long-term infrastructure development works could improve the quality and utilization of childbirth services in the rural birthing center.	Women did not use the services at rural birthing centers because of systematic and contextual barriers. Irregular and poor quality services, inadequate human and capital resources, and poor governance were health system challenges which prevented service delivery. Contextual barriers including difficult geography, poor birth preparedness practices, harmful culture practices and traditions and low level of trust were also found to contribute to underutilization of the birthing center.	Health facility; community; societal
MH98	Maru, S., Bangura, A. H., Mehta, P., Bista, D., Borgatta, L., Pande, S., … Maru, D. (2017). Impact of the roll out of comprehensive emergency obstetric care on institutional birth rate in rural Nepal. *BMC Pregnancy and Childbirth* , *17* (1), 77. https://doi.org/10.1186/s12884-017-1267-y	Achham	Quantitative and qualitative	Postpartum women	2 groups - 77 and 133	Maternal health	Institutional delivery	Implementation of comprehensive emergency obstetric care; beliefs about safety; preferences; income		Institutional birth rates increased after comprehensive emergency obstetric care implementation (from 30 to 77%, OR 7.7) at both hospital (OR 2.5) and low-level facilities (OR 4.6, p < 0.01 for all). The logistic regression indicated that comprehensive emergency obstetric care availability (OR 5.6), belief that the hospital is the safest birth location (OR 44.8), safety prioritization in decision-making (OR 7.7), and higher income (OR 1.1) predict institutional birth (p </= 0.01 for all). Qualitative analysis revealed comprehensive emergency obstetric care awareness, increased social expectation for institutional birth, and birth planning as important factors.	Individual; household; health facility; societal
MH99	Maru, S., Rajeev, S., Pokhrel, R., Poudyal, A., Mehta, P., Bista, D., … Maru, D. (2016). Determinants of institutional birth among women in rural Nepal: a mixed-methods cross-sectional study. *BMC Pregnancy and Childbirth* , *16* , 252. https://doi.org/10.1186/s12884-016-1022-9	Accham	Quantitative and qualitative	Postpartum women		Maternal health	Institutional delivery	Age, income, land ownership ; beliefs (safety, distance)		The institutional birth rate for the hospital's catchment area population was calculated to be 0.30 (54 home births, 23 facility births). Institutional birth was more likely as age decreased (ORs in the range of 0.20-0.28) and as income increased (ORs in the range of 1.38-1.45). Institutional birth among women who owned land was less likely (OR = 0.82 [0.71, 0.92]). Ninety percent of participants in the institutional birth group identified safety and good care as the most important factors determining location of birth, whereas 60 % of participants in the home birth group reported distance from hospital as a key determinant of location of birth. Qualitative analysis elucidated the importance of social support, financial resources, birth planning, awareness of services, perception of safety, and referral capacity in achieving an institutional birth. most said hospital safest, even if they didn't go	Individual; household; health facility
MH104	Shah, R., Rehfuess, E. A., Maskey, M. K., Fischer, R., Bhandari, P. B., & Delius, M. (2015). Factors affecting institutional delivery in rural Chitwan district of Nepal: a community-based cross-sectional study. BMC Pregnancy and Childbirth, 15, 27. https://doi.org/10.1186/s12884-015-0454-y	Chitwan, Nepal	Qualitative			Maternal health	Institutional delivery			With multiple incentives present, the decision to deliver in a health facility is affected by a complex interplay of socio-demographic, socio-cultural, and health service-related factors	Policy/structure
MH105	Shah, R., Rehfuess, E. A., Paudel, D., Maskey, M. K., & Delius, M. (2018). Barriers and facilitators to institutional delivery in rural areas of Chitwan district, Nepal: a qualitative study. Reproductive Health, 15(1), 110. https://doi.org/10.1186/s12978-018-0553-0	Nepal	Mixed	MWRAs, husband, CHW, HWs	-	Maternal health	Institutional delivery	access, decisions and support		Despite much progress in recent years, this study revealed some important barriers to the utilization of health services; while suggesting that a combination of upgrading birthing centres and strengthening the competencies of health personnel while embracing and addressing deeply rooted family values and traditions can improve existing programmes and further increase institutional delivery rates.	family; facility
MH154	Morrison, J., Basnet, M., Budhathoki, B., Adhikari, D., Tumbahangphe, K., Manandhar, D., … Groce, N. (2014). Disabled women's maternal and newborn health care in rural Nepal: A qualitative study. *Midwifery* , *30* (11), 1132–1139. https://doi.org/10.1016/j.midw.2014.03.012	Makwanpur	Qualitative	Married women with disabilities recently delivering a baby (last 10 years); also health workers	27 interviews with disabled married women with disabilities	Maternal health	Institutional delivery	Quality; cost; lack of family support		married disabled women considered pregnancy and childbirth to be normal and preferred to deliver at home. Issues of quality, cost and lack of family support were as pertinent for disabled women as they were for their non-disabled peers. Health workers felt unprepared to meet the maternal health needs of disabled women. Key conclusions and implications for practice: integration of disability into existing Skilled Birth Attendant training curricula may improve maternal health care for disabled women. There is a need to monitor progress of interventions that encourage institutional delivery through the use of disaggregated data, to check that disabled women are benefiting equally in efforts to improve access to maternal health care.	Household; facility

MH156	Morrison, J., Thapa, R., Basnet, M., Budhathoki, B., Tumbahangphe, K., Manandhar, D., ... Osrin, D. (2014). Exploring the first delay: a qualitative study of home deliveries in Makwanpur district Nepal. *BMC Pregnancy and Childbirth* , *14* , 89. https://doi.org/10.1186/1471-2393-14-89	Makwanpur	Qualitative	Women who had deliveredat home	33 interviews	Maternal health	Institutional delivery	Awareness; Family support; household position/roles; quality of health services		Many women were aware of the benefits of institutional delivery yet their status in the home restricted their access to health facilities. Often they did not wish to bring shame on their family by going against their wishes, or through showing their body in a health institution. They often felt unable to demand the organisation of transportation because this may cause financial problems for their family. Some felt that government incentives were insufficient. Often, a lack of family support at the time of delivery meant that women delivered at home. Past bad experience, and poor quality health services, also prevented women from having an institutional delivery.	Individual; household; facility
MH161	Pandey, S. (2018). Women's knowledge about the conditional cash incentive program and its association with institutional delivery in Nepal. *PloS One* , *13* (6), e0199230. https://doi.org/10.1371/journal.pone.0199230	National (DHS)	Quantitative	Women of reproductive age giving birth in past 5 years	4,036 had given births in the past five years	Maternal health	Institutional delivery	Knowledge of SDIP; healthcare seeking; educ; wealth; rural/urban; exposure to media	Safe Delivery Incentive Programme	Approximately 90% of the women knew about the SDIP. About 42% of the women who knew about the SDIP and 13% of the women who did not know about the SDIP had their most recent delivery at a health institution. The odds of institutional delivery increased nearly three-fold (OR = 2.70; CI: 1.59-4.59) among women who knew about the SDIP compared to women who did not know about the SDIP. Other factors that predicted institutional delivery included education, wealth, urban status, first birth, the number of antenatal care visits, and exposure to news media.	Individual; household; community
MH163	Pathak, P., Shrestha, S., Devkota, R., & Thapa, B. (2018). Factors Associated with the Utilization of Institutional Delivery Service among Mothers. *Journal of Nepal Health Research Council* , *15* (3), 228–234.	Chitwan	Quantitative	Mothers	129	Maternal health	Institutional delivery	Number of ANC		While ethnicity, educational level, parity were significantly asociated in bivariate models, But in the multivariable logistic regression analysis, no. of ANC visit (AOR = 10.03, 95 % CI = 1.02-98.29) was only independent factors affecting institutional delivery service utilization.	Individual
MH165	Paudel, G., Yadav, U. N., Thakuri, S. J., Singh, J. P., & Marahatta, S. B. (2016). Utilization of services for institutional deliveries in Gorkha District. *Journal of Nepal Health Research Council* , *14* (34), 202–206.	Gorkha (Palungtar)	Quantitative	Mothers with a child <2	180	Maternal health	Institutional delivery	Age of marriage; knowledge of delivery incentive; wait times; knowledge of maternal health		93.3% of the mother gave birth to their current child at health institution. The study variables like age at marriage, knowledge on delivery incentive, long waiting hours at health facility, information on maternal health before current pregnancy, age at first pregnancy, gestational age at first ANC visit and women knowing differences between home and institutional delivery were independent factors influencing utilization of institutional delivery service. CONCLUSIONS: Promotion of information, education and communication on maternal health services and delivery incentives could result in utilization of institutional delivery services.	Individual; health facility
MH168	Mahato, P. K., van Teijlingen, E., Simkhada, P., Sheppard, Z. A., & Silwal, R. C. (2017). Factors related to choice of place of birth in a district in Nepal. *Sexual & Reproductive Healthcare : Official Journal of the Swedish Association of Midwives* , *13* , 91–96. https://doi.org/10.1016/j.srhc.2017.07.002	Nawalparasi	Quantitative	The inclusion criteria were women of reproductive age (15–49 years) having at least one child below 24 months of age at the time of survey	626	Maternal health	Institutional delivery	Distance, caste, access to certain material goods, DM, etc.		Women were significantly more likely to give birth at health care facilities compared to home if the distance was less than one hour, belonged to advantaged caste, had radio, television and motorbike/scooter, decision maker for place of birth was husband, reported their frequency of antenatal (ANC) visits at 4 or more and belonged to age group 15-19. CONCLUSION: The analysis indicates that husbands of women giving birth influence the choice of place of birth. The findings highlight importance of having four or more ANC visits to the health institutions and that it should be located within one-hour walking distance. Inequity in utilisation of childbirth services at health institutions exists as showed by low utilisation of such services by disadvantaged caste.	Individual; household; health system
MH123	Khanal, V., Khanal, P., & Lee, A. H. (2015). Sustaining progress in maternal and child health in Nepal. *The Lancet* , *385* (9987), 2573. https://doi.org/10.1016/S0140-6736(15)60963-1					Maternal health; child health	Institutional delivery; Breastfeeding; Immunization	Earthquake	N/A	Correspondence highlighting importance of earthquake on influencing health servies and need to invest to ensure that women and children's access to services (maternal, immunization) are not affeted	Health facility; environmental
MH142	Lamichhane, P., Sharma, A., & Mahal, A. (2017). Impact evaluation of free delivery care on maternal health service utilisation and neonatal health in Nepal. *Health Policy and Planning* , *32* (10), 1427–1436. https://doi.org/10.1093/heapol/czx124	national level - Nepal	Secondary anaylsis of data	pregnant women, families, policy makers	4457 live-births reported between 2001 and 2008 from Nepal Demographic and Health Surveys for 2006 and 2011.	Maternal health; neonatal health	Institutional delivery; SBA	Impact of free birth delivery programme on place of delivery, the presence of skilled birth attendants (SBAs) and neonatal mortality	none	Nepal introduced free delivery services for births in public facilities in 2005 in 25 districts with the intervention initially restricted to women with less than two living children and/or women with obstetric complications. After November 2007, eligibility conditions were relaxed to include all women, and the programme was later expanded to cover an additional 50 districts in December 2008. Programme effects on use of public facilities for births and deliveries attended by SBAs were not sustained over a longer exposure period. The results on neonatal mortality persisted with longer programme exposure, although the effects were smaller in magnitude.	policy makers, health facilities
MH36	Anand, E., Unisa, S., & Singh, J. (2017). INTIMATE PARTNER VIOLENCE AND UNINTENDED PREGNANCY AMONG ADOLESCENT AND YOUNG ADULT MARRIED WOMEN IN SOUTH ASIA. *JOURNAL OF BIOSOCIAL SCIENCE* , *49* (2), 206–221. https://doi.org/10.1017/S0021932016000286	Bangladesh and Nepal	Quant	NGO, government	9788	Maternal health	intimate partner violence	age and location		"The findings indicate that IPV is a risk factor for unintended pregnancy among adolescent and young adult married women."	couple, societal/structural/political
MH40	Atteraya, M. S., Gnawali, S., & Song, I. H. (2015). Factors Associated With Intimate Partner Violence Against Married Women in Nepal. *JOURNAL OF INTERPERSONAL VIOLENCE* , *30* (7), 1226–1246. https://doi.org/10.1177/0886260514539845	Nepal	quant	NGO, government	3373	Maternal health	intimate partner violence	female literacy, wealth, violent family history, lack of decision-making autonomy		"At the community level, women most at risk of IPV were those living in the Terai region, and women belonging to underprivileged castes and ethnic groups."	couple, societal/structural/political
MH87	Kohrt, B. A., & Bourey, C. (2016). Culture and Comorbidity: Intimate Partner Violence as a Common Risk Factor for Maternal Mental Illness and Reproductive Health Problems among Former Child Soldiers in Nepal. *Medical Anthropology Quarterly* , *30* (4), 515–535. https://doi.org/10.1111/maq.12336	Nepal	Qualitative		13 female child soldiers	Maternal health	intimate partner violence	Culture influences internal (psychological), external (social), institutional (structural), and health care (medical) processes, which, taken together, create differential risk of comorbidity across contexts.	none described.	Twelve participants said they had remained silent, enduring violence, forgiving the husband. Twelve participants endorsed communication with one's husband. Only four participants sought family support, and three contacted police. Ultimately, 12 participants left the relationship, but the majority (nine) only left after the final IPV experience, which was preceded by prolonged psychological suffering and pregnancy endangerment. comorbidity risks are increased in cultural context that rely on individual or couples-only behavior, lack external social engagement, have weak law and justice institutions, and have limited health services.	individual, household, couples, family, society
MH39	Ashish, K. C., Wrammert, J., Ewald, U., Clark, R. B., Gautam, J., Baral, G., ... Malqvist, M. (2016). Incidence of intrapartum stillbirth and associated risk factors in tertiary care setting of Nepal: a case-control study. *REPRODUCTIVE HEALTH* , *13* . https://doi.org/10.1186/s12978-016-0226-9	Nepal	Quant	NGO, government	4476	Maternal health	intrapartum stillbirths	wealth		"Being born preterm with a small-for-gestational age was associated with the highest risk for intrapartum stillbirth. Inadequate fetal heart rate monitoring and partogram use are preventable risk factors associated with intrapartum stillbirth"	health facility, couple

MH68	Henjum, S., Kjellevold, M., Ulak, M., Chandyo, R. K., Shrestha, P. S., Froyland, L., … Strand, T. A. (2016). Iodine Concentration in Breastmilk and Urine among LactatingWomen of Bhaktapur, Nepal. *NUTRIENTS* , *8* (5). https://doi.org/10.3390/nu8050255	Bhaktapur	Quantitative	Lactating women	485	Maternal health	Iodine in breastmilk and urine	Descriptive		A large proportion of the women had adequate BMIC and UIC; however, a subset had high iodine concentrations. These findings emphasize the importance of carefully monitoring iodine intake to minimize the risk of iodine excess and subsequently preventing transient iodine-induced hypothyroidism in breastfed infants.	Biological; household
MH69	Henjum, S., Manger, M., Skeie, E., Ulak, M., Thorne-Lyman, A. L., Chandyo, R., … Strand, T. A. (2014). Iron deficiency is uncommon among lactating women in urban Nepal, despite a high risk of inadequate dietary iron intake. *The British Journal of Nutrition* , *112* (1), 132–141. https://doi.org/10.1017/S0007114514000592	Bhaktapur	Quantitative	Lactating women	500	Maternal health	Iron deficiency	Age of child; dietary Fe		In multiple regression analyses, there was a weak positive association between dietary Fe intake and body Fe (beta 0.03, 95% CI 0.014, 0.045). Among the women with children aged < 6 months, but not those with older infants, intake of Fe supplements in pregnancy for at least 6 months was positively associated with body Fe (P for interaction < 0.01). Due to a relatively high dietary intake of non-haem Fe combined with low bioavailability, a high proportion of the women in the present study were at the risk of inadequate intake of Fe. The low prevalence of anaemia and Fe deficiency may be explained by the majority of the women consuming Fe supplements in pregnancy.	Biological
MH54	Devkota, R., Khan, G. M., Alam, K., Sapkota, B., & Devkota, D. (2017). Impacts of counseling on knowledge, attitude and practice of medication use during pregnancy. *BMC Pregnancy and Childbirth* , *17* (1), 131. https://doi.org/10.1186/s12884-017-1316-6	Western Nepal (Manipal Teaching Hospital, Nepal)	Quantitative	Pregnant women presenting with complications (at least one)	275	Maternal health	KAP related to medication use for complications	Exposure to counseling on mediction use	Counseling intervention (interpersonal)	Significant increase in KAP after exposure to counseling.	Health facility
MH151	Schumer, J. E., Bernell, S. L., Bovbjerg, V. E., & Long, M. L. (2014). Factors influencing maternal nutrition in rural Nepal: an exploratory research project. Health Care for Women International, 35(10), 1201–1215. https://doi.org/10.1080/07399332.2013.862792	Western region	Quanitative	Women of cildbaring age	2500	Nutrition; maternal health	Knowledge of micronutrients (folic acid, iron)	program participation	GNE education program - and micronutrients given to participants	High interest in learning about nutrition - positively associated with women's education We found that rural women are interested in learning about nutrition regardless of educational attainment and that level of education is strongly associated with interest in learning about nutrition (p <.001). Although the majority of women with no education expressed interest in learning about nutrition (71%), a substantial percentage (22%) were not interested. Education and the teaching of basic health messages may hold important benefits for improving maternal and child health.	Individual
MH136	Cunningham, K., Singh, A., Pandey Rana, P., Brye, L., Alayon, S., Lapping, K., … Klemm, R. D. W. (2017). Suaahara in Nepal: An at-scale, multi-sectoral nutrition program influences knowledge and practices while enhancing equity. *Maternal & Child Nutrition* , *13* (4).	Multiple districts across Nepal	Quant	HH-level data - process evaluation	480	Maternal health; neonatal health	levels of knowledge and practices related to health, nutrition, and water, sanitation, and hygiene (WASH)	Exposure to Suaahara; DAG status of household;	Suaahara had a specific focus on social behavior change and communication (SBCC) and gender and social inclusion (GESI), including the targeting of disadvantaged groups (DAGs), that is, those identified as being food insecure and vulnerable due to socioeconomic, cultural, or physical factors. Suaahara integrated its programming across nutrition, health services, family planning, WASH, and agriculture/homestead food production (HFP) with four key objectives: (a) to improve household nutrition, health, and hygiene behaviors; (b) to	A higher proportion of DAG households in Suaahara areas reported exposure, were knowledgeable, and practiced optimal behaviors related to nearly all maternal and child health, nutrition, and WASH indicators than DAG households in non-Suaahara areas and sometimes even than non-DAG households in Suaahara areas. Moreover, differences in some of these indicators between DAG and non-DAG households were significantly smaller in Suaahara areas than in comparison areas. These results indicate that large-scale integrated interventions can influence nutrition-related knowledge and practices, while simultaneously reducing inequities.	HH
MH26	Mahumud, R. A., Sultana, M., & Sarker, A. R. (2017). Distribution and determinants of low birth weight in developing countries. *Journal of Preventive Medicine and Public Health* , *50* (1), 18–28. https://doi.org/10.3961/jpmph.16.087	Cambodia, Columbia, Indonesia, Jordan, Nepal, Pakistan, Tanzania, Uganda and Zimbabwe	Secondary analysis of DHS data (2010-2013)	mothers and infants	DHS national level household surveys	Family planning; reproductive health; maternal health; neonatal health	low birth rate	antenatal care, delayed conception, low body index, SES, literacy rate	N/A	Various factors such as advanced maternal age and literacy rates are determinants of low birth rates in developing countries	All
MH117	Bhaskar, R. K., Deo, K. K., Neupane, U., Chaudhary Bhaskar, S., Yadav, B. K., Pokharel, H. P., & Pokharel, P. K. (2015). A Case Control Study on Risk Factors Associated with Low Birth Weight Babies in Eastern Nepal. *International Journal of Pediatrics* , *2015* , 807373. https://doi.org/10.1155/2015/807373		Quant; case control	NGO, government	318	Maternal health, neonatal health	low birth weight	maternal blood group, BMI, age		maternal blood group AB, normal maternal BodyMass Index (BMI), mother's age of30 or more years, and starting ANCvisit earlier were found to be protective for LBW	individual, household, societal/structural/political
MH135	Budhathoki, S., Poudel, P., Bhatta, N. K., Singh, R. R., Shrivastava, M. K., Niraula, S. R., & Khanal, B. (2014). Clinico-epidemiological study of low birth weight newborns in the Eastern part of Nepal. *Nepal Medical College Journal : NMCJ* , *16* (2–4), 190–193.	Eastern Nepal	Quant	NGO, government	2587	Maternal health; neonatal health	low birth weight	Birth weight, gestational age, apnoea and mechanical ventilation		Incidence of LBW babies in our hospital was 14.45%, More than 4/5 (82.2%) baby's mother were primigravida	individual, health facility
MH149	Christian, P., Nanayakkara-Bind, A., Schulze, K., Wu, L., LeClerq, S. C., & Khatry, S. K. (2016). Antenatal micronutrient supplementation and third trimester cortisol and erythropoietin concentrations. *Maternal & Child Nutrition* , *12* (1), 64–73. https://doi.org/10.1111/mcn.12138	Sarlahi, Nepal	Quant	rural Nepalese women	737	Maternal health; nutrition	Low birth weight	Vitamin/nutrient supplementation	nutrition intervention	In adjusted analyses, third trimester EPO (supplementation) was associated with a reduction in low birthweight, whereas cortisol was negatively associated with length of gestation and higher risk of preterm birth. Iron and multiple micronutrient supplementation may enhance birth outcomes by reducing mediators of maternal stress and impaired erythropoiesis.	Individual (biological)
MH116	Yargawa, J., & Leonardi-Bee, J. (2015). Male involvement and maternal health outcomes: systematic review and meta-analysis. *JOURNAL OF EPIDEMIOLOGY AND COMMUNITY HEALTH* , *69* (6), 604–612. https://doi.org/10.1136/jech-2014-204784	-	Qualitative	Men & Women aged 15-49	-	Maternal health	male involvement	health outcomes		Male involvement is associated with improved maternal health outcomes in developing countries.	individual/family
MH146	Kozuki, N., Katz, J., LeClerq, S. C., Khatry, S. K., West, K. P. J., & Christian, P. (2015). Risk factors and neonatal/infant mortality risk of small-for-gestational-age and preterm birth in rural Nepal. *The Journal of Maternal-Fetal & Neonatal Medicine : The Official Journal of the European Association of Perinatal Medicine, the Federation of Asia and Oceania Perinatal Societies, the International Society of Perinatal Obstetricians* , *28* (9), 1019–1025. https://doi.org/10.3109/14767058.2014.941799	Rural Nepal	Analysis of existing data from maternal micronutrient supplementation trial	Mothers of newborns and neonates	4130	Maternal health; neonatal health; nutrition	Maternal chronic and acute malnutrition and the associations between small-for-gestational-age (SGA)/preterm birth and neonatal/infant mortality	risk factors for and mortality consequences of small-for-gestational-age (SGA) and preterm birth in rural Nepal.	none mentioned	Maternal chronic and acute malnutrition appear to be associated with SGA outcomes. Because of high SGA prevalence in South Asia and the increased neonatal and infant mortality risk associated with SGA, there is an urgent need to intervene with effective interventions.	Individuals, household

MH41	Baron, E. C., Hanlon, C., Mall, S., Honikman, S., Breuer, E., Kathree, T., … Tomlinson, M. (2016). Maternal mental health in primary care in five low- and middle-income countries: a situational analysis. *BMC Health Services Research* , *16* , 53. https://doi.org/10.1186/s12913-016-1291-z	Ethiopia, India, Nepal, South Africa and Uganda	situational analysis	NGO, government		Maternal health	maternal mental health			It is difficult to anticipate demand for mental health care at district level in the five countries, given the lack of evidence on the prevalence and treatment coverage of women with maternal mental disorders. Limited	societal/structural/political
MH147	Lee, Y. Q., Collins, C. E., Gordon, A., Rae, K. M., & Pringle, K. G. (2018). The Relationship between Maternal Nutrition during Pregnancy and Offspring Kidney Structure and Function in Humans: A Systematic Review. *NUTRIENTS* , *10* (2). https://doi.org/10.3390/nu10020241		Systemtatic review	Mothers, children,	10 studies	Maternal health; neonatal health; nutrition	maternal nutrition during pregnancy and child health	relationship between maternal nutrition during pregnancy and offspring kidney structure and function in humans.	Not mentioned	Deficiencies in maternal folate, vitamin A, and total energy during pregnancy were associated with detrimental impacts on kidney structure and function, measured by kidney volume, proteinuria, eGFR(cystc) and mean creatinine clearance in the offspring. Additional experimental and longitudinal prospective studies are warranted to confirm this relationship, especially in Indigenous populations where the risk of renal disease is greater.	individual, family, facility level
MH18	Puri, M., Regmi, S., Tamang, A., & Shrestha, P. (2014). Road map to scaling-up: translating operations research study's results into actions for expanding medical abortion services in rural health facilities in Nepal. Health Research Policy and Systems, 12. https://doi.org/10.1186/1478-4505-12-24	Rupandehi, Kailali	Quantitative	Women receiving MA services		Family Planning; maternal health	medical abortion	accessible and affordable services		This research provided further evidence and a road-map for expanding medical abortion services to rural areas by mid-level service providers in minimum clinical settings without the oversight of physicians, thus reducing complications and deaths due to unsafe abortion.	Policy/structure
MH14	Amatya, A., & Dangal, G. (2017). Family Planning 2020 and Nepal's Pledge. *Journal of Nepal Health Research Council* , *15* (2), i–ii.	Nepal - nationwide	Review / Position paper	NGO, government		Family planning; maternal health	meeting unmet need for family planning			"At the national level there is a dire need to multi-sectoral approach to reach our targets and for the implementation of CIP so that no one is left behind"	societal/structural/political
MH94	Mahato, P. K., van Teijlingen, E., Simkhada, P., Angell, C., & Ireland, J. (2018). Qualitative evaluation of mental health training of auxiliary nurse midwives in rural Nepal. *Nurse Education Today* , *66* , 44–50. https://doi.org/10.1016/j.nedt.2018.03.025	Nepal	Qualitative	auxillary nurse midwive(ANM)	15	Maternal health	mental health		Training as a way to raise awareness amd cange attitiudes about mental heath issues in pregnant women	The main three themes that emerged from the interviews include: 1) issues related to mental, such as importance of maternal mental health training health; 2) societal attitudes and Stigma and 3) support for women.	individual, health facility and societal/structural/policy
MH13	Acharya, P., Gautam, R., & Aro, A. R. (2016). FACTORS INFLUENCING MISTIMED AND UNWANTED PREGNANCIES AMONG NEPALI WOMEN. *Journal of Biosocial Science* , *48* (2), 249–266. https://doi.org/10.1017/S0021932015000073	Nepal - nationwide	Quant	Nepali women	5391	Family planning; maternal health	mistimed and unwanted last pregnancy	geographic location, husbands with paid jobs, socioeconomic status		Women from the hill region reported more untimely pregnancies and women from the Western development region reported more unwanted pregnancies.	household, individual
MH143	McCauley, M. E., van den Broek, N., Dou, L., & Othman, M. (2015). Vitamin A supplementation during pregnancy for maternal and newborn outcomes. *The Cochrane Database of Systematic Reviews* , (10), CD008666. https://doi.org/10.1002/14651858.CD008666.pub3	Nepal and other countries	Quantitative - review	Pregnant women		Maternal health; neonatal health	Night blindness; maternal mortality; other	Vitamin A supplementation		The pooled results of three large trials in Nepal, Ghana and Bangladesh (with over 153,500 women) do not currently suggest a role for antenatal vitamin A supplementation to reduce maternal or perinatal mortality. However, the populations studied were probably different with regard to baseline vitamin A status and there were problems with follow-up of women. There is good evidence that antenatal vitamin A supplementation reduces maternal night blindness, maternal anaemia for women who live in areas where vitamin A deficiency is common or who are HIV-positive. In addition the available evidence suggests a reduction in maternal infection, but these data are not of a high quality.	Individual; health system
MH89	Kozuki, N., Mullany, L. C., Khatry, S. K., Ghimire, R. K., Paudel, S., Blakemore, K., … Katz, J. (2016). Accuracy of Home-Based Ultrasonographic Diagnosis of Obstetric Risk Factors by Primary-Level Health Care Workers in Rural Nepal. *Obstetrics and Gynecology* , *128* (3), 604–612. https://doi.org/10.1097/AOG.0000000000001558					Maternal health	Not a behavioral study		No SBCC	With limited training, primary-level health care workers in rural Nepal can accurately diagnose selected third-trimester obstetric risk factors using ultrasonography.	
MH145	Katz, J., Englund, J. A., Steinhoff, M. C., Khatry, S. K., Shrestha, L., Kuypers, J., … Tielsch, J. M. (2017). Nutritional status of infants at six months of age following maternal influenza immunization: A randomized placebo-controlled trial in rural Nepal. *Vaccine* , *35* (48 Pt B), 6743–6750. https://doi.org/10.1016/j.vaccine.2017.09.095	Sarlahi District, southern plains of Nepal,	Quantitative - A randomized placebo-controlled trial of year round maternal influenza immunization was conducted in two annual cohorts	Infants and mothers	3693 women and 3646 infants	Maternal health; neonatal health; child health	Not a behavioral study		Not a SBCC study	Although maternal immunization reduced low birth weight by 15%, only wasting at 6 months in the 2nd cohort was statistically significantly difference. However, the study was underpowered to detect reductions of public health importance.	
MH2	nepal.unfpa.org	National	Quantitative	WRAs	Not clear	Maternal Health	obstetric fistula	Awareness, treatment and training		More than 2 million women in Asia and sub-Saharan Africa are living with fistula and each year between 50,000 to 100,000 women worldwide are affected by this condition	individual/family
MH93	Lubon, A. J., Erchick, D. J., Khatry, S. K., LeClerq, S. C., Agrawal, N. K., Reynolds, M. A., … Mullany, L. C. (2018). Oral health knowledge, behavior, and care seeking among pregnant and recently-delivered women in rural Nepal: a qualitative study. *BMC ORAL HEALTH* , *18* . https://doi.org/10.1186/s12903-018-0564-9	Nepal	Qualitative	pregnant and recently delivered women	IDIs=16; FGDs= 3 groups of 23 participants	Maternal health	oral health diseases (importance of taking care of oral health during pregnancy)	SES	N/A	Women felt confident describing signs and symptoms of oral health diseases but did not have knowledge of where to seek care and relied heavily on their community as a source of information. Some women use toothbrush and toothpaste at least once a day while others use more traditional methods such as use of local shrubs or trees.	individual, household, community, health facility
MH72	Houweling, T. A. J., Morrison, J., Alcock, G., Azad, K., Das, S., Hossen, M., … Costello, A. (2016). Reaching the poor with health interventions: programme-incidence analysis of seven randomised trials of women's groups to reduce newborn mortality in Asia and Africa. *Journal of Epidemiology and Community Health* , *70* (1), 31–41. https://doi.org/10.1136/jech-2014-204685	Nepal and other countries (Nepal-Makwanpur, Nepal-Dhanusha)	Quantitative	Pregnancy data	70574 (not all in Nepal)	Maternal health	Participation in women's group meetings	SE and SD factors		Socioeconomic differences in women's group attendance were small, except for occasional lower attendance by elites. Sociodemographic differences were large, with lower attendance by young primigravid women in African as well as in South Asian sites. The intervention was considered relevant and interesting to all socioeconomic groups. Local facilitators ensured inclusion of poorer women. Embarrassment and family constraints on movement outside the home restricted attendance among primigravid women. Reproductive health discussions were perceived as inappropriate for them.	Individual; household
MH27	Chalise, M., Steenkamp, M., & Chalise, B. (2016). Factors enabling women with pelvic organ prolapse to seek surgery at mobile surgical camps in two remote districts in Nepal: a qualitative study. *WHO South-East Asia Journal of Public Health* , *5* (2), 141–148. https://doi.org/10.4103/2224-3151.206251	2 districts - 1 hilly, 1 himalaya	Qual	Women recruited in 2 week-long mobile surgical camps	21	Maternal health	Pelvic organ prolapse	Looking at factors affecting women's seeking of surgical treatment for pelvic organ prolapse	N/A	multilevel factors influenced uptake: Health system factors - accessibility and affordability; support of FCHVS sociocultural - being closer to end of reproductive years; having family support individual - symptoms, fear of cancer, etc.	Health facility / sociocultural / individual
MH60	Fitchett, J. R., Bhatta, S., Sherpa, T. Y., Malla, B. S., A Fitchett, E. J., Samen, A., & Kristensen, S. (2015). Non-surgical interventions for pelvic organ prolapse in rural Nepal: a prospective monitoring and evaluation study. *JRSM Open* , *6* (12), 2054270415608117. https://doi.org/10.1177/2054270415608117	Baglung	Quantitative	Women with pelvic organ prolapse symptoms	74 women	Maternal health	Pelvic organ prolapse	Socio-dem factors; kegels/rings given (non-surgical response to POP)		Univariate analyses identified age at screening, age at onset of symptoms, the duration of symptoms and an associated rectocele as factors associated with increasing POP severity ($p < 0.05$). Kegel exercises were taught to 25 (33.8%) women with POP and ring pessaries were offered to 47 (63.5%) women with POP.	Health facility
MH51	Devkota, H. R., Clarke, A., Murray, E., & Groce, N. (2017). Do experiences and perceptions about quality of care differ among social groups in Nepal? : A study of maternal healthcare experiences of women with and without disabilities, and Dalit and non-Dalit women. *PloS One* , *12* (12), e0188554. https://doi.org/10.1371/journal.pone.0188554	Rupandehi	Quant	15-49 aged women pregnant within last five years and used maternal care services in public health facility	343 women	Maternal health	Perceived quality of care	women with disabilities from both the non-Dalit population and Dalit population and their peers without disabilities from both non-Dalit and Dalit communities	N/A	Perceptions about the quality of care differed significantly by disability status but not by caste (except for a single dimension - cleanliness of services). All groups rated the quality of healthcare delivery, interpersonal and personal factors as well as access to services 'low.' Poor service user experiences and perceptions of quality of care undermine opportunities to translate increased healthcare coverage into improved access and outcomes.	health facility

MH80	Karkee, R., Lee, A. H., & Binns, C. W. (2015). Bypassing birth centres for childbirth: an analysis of data from a community-based prospective cohort study in Nepal. *Health Policy and Planning* , *30* (1), 1–7. https://doi.org/10.1093/heapol/czt090	Kaski	Quantitative	pregnant women of 5 months or more gestation recruited from the community had access to local birth centres.	353	Maternal health	Place of delivery (bypassing birth centers)	Wealth; parity; complications; availability		Bypassers tended to be wealthy and have intrapartum complications, but the likelihood of bypassing apparently decreased by higher parity and frequent (four or more) antenatal care visits. Availability of operating facility, adequacy of medical supplies and equipment and competent health staff at the facility were the main reasons for their bypassing decision.	Individual; household; health facility
MH5	Khanal et al.: Factors associated with the utilisation of postnatal care services among the mothers of Nepal: analysis of Nepal Demographic and Health Survey 2011. BMC Women's Health 2014 14:19	Nepal	Qualitative	WRAs	4079	Maternal Health	PNC	Occupation, residence, place of delivery		43.2% reported attending postnatal care within the first six weeks of birth, while 40.9% reported attending immediate postnatal care	
MH6		Bangladesh, Ghana, Kygyz Republic, and Nepal,	Quantitative	WRAs	-	Maternal Health	PNC	timing of check-up, place of delivery		The most recent MICS round 6 and DHS phase 7 have both included a number of questions on the content of the first check within the first 2 days following birth, including cord examination, weight and temperature assessment, breastfeeding counseling and observation and counseling on symtpoms that cause a mother to take a newborn to health care.	Policy
MH90	Kunwar, D., Corey, E. K., Sharma, P., & Risal, A. (2015). Screening for postpartum depression and associated factors among women who deliver at a university hospital, Nepal. *Kathmandu University Medical Journal* , *13* (49), 44–48.	Those who delivered at Dhulikel Hospital	Quantitative	Postpartum women	100 postpartum women	Maternal health	postpartum depression	sociodemographic and sociocultural factors, and mother-related, pregnancy-related, and child related factors	Recommended: mothers with high risk should be routinely screened for postpartum depression.	Postpartum depression is common among Nepalese women and can be detected early in the postpartum periods; and many psychosocial factors like pregnancy complications, infant's health problems and vaginal delivery are associated with it.	
MH59	Feldhaus, I., LeFevre, A. E., Rai, C., Bhattarai, J., Russo, D., Rawlins, B., … Thapa, K. (2016). Optimizing treatment for the prevention of pre-eclampsia/eclampsia in Nepal: is calcium supplementation during pregnancy cost-effective? *Cost Effectiveness and Resource Allocation : C/E* , *14* , 13. https://doi.org/10.1186/s12962-016-0062-3	Dailekh district	Quantitative - economic analysis	Policy makers (pregnant women)	N/A	Maternal health	Pre-eclampsia	Calcium supplementation during pregnancy		Calcium supplementation for pregnant mothers for prevention of PE/E provided with MgSO4 for treatment holds promise for the cost-effective reduction of maternal and neonatal morbidity and mortality associated with PE/E.	Health facility
MH139	Keasley, J., Blickwedel, J., & Quenby, S. (2017). Adverse effects of exposure to armed conflict on pregnancy: a systematic review. *BMJ Global Health* , *2* (4), e000377. https://doi.org/10.1136/bmjgh-2017-000377	mothers in armed conflict areas. Studies from Libya, Bosnia, Herzegovina, Israel, Palestine, Kosovo, Yugoslavia, Nepal, Somalia, Iraq, Kuwait and Afghanistan.	Literature review	Mothers	13 studies	Maternal health; neonatal health	pregnancy outcomes.	impacts of exposure to armed conflicts on the pregnancy outcomes.	none mentioned	evidence suggested an increase in the incidence of miscarriage, stillbirth, prematurity, congenital abnormalities, miscarriage and premature rupture of membranes among mothers exposed to armed conflict.	societal, environmental, policy
MH53	Devkota, R., Khan, G. M., Alam, K., Regmi, A., & Sapkota, B. (2016). Medication utilization pattern for management of pregnancy complications: a study in Western Nepal. BMC Pregnancy and Childbirth, 16, 272. https://doi.org/10.1186/s12884-016-1068-8	Western Nepal (Manipal Teaching Hospital, Nepal)	Quantitative	Pregnant women presenting with complicatio ns (at least one)	275	Maternal health	Prescription of medications in response to complications	No predictors - descriptive		Drugs prescribed to pregnant women said to be in keeping with safe prescriptions. Some teratogenic drugs prescribed	Health facility
MH141	Khanal, V., Zhao, Y., & Sauer, K. (2014). Role of antenatal care and iron supplementation during pregnancy in preventing low birth weight in Nepal: comparison of national surveys 2006 and 2011. *Archives of Public Health = Archives Belges de Sante Publique* , *72* (1), 4. https://doi.org/10.1186/2049-3258-72-4	National level - Nepal	Secondary analysis of data. Pooled data from the Nepal Demographi c and Health Surveys (NDHS) of 2006 and 2011 were analysed and compared	Newborns, mothers	2845 children (i.e. 923 children in 2006 and 1922 children in 2011, who had low birth weight recorded)	Maternal health; neonatal health	Prevention of low birthweight of newborns	antenal, care, iron supplmentation and geographical location were some of the socio-demographic and health related factors associated with low birth weight (LBW) of newborns	None described. Conclusion identified a need for targeted interventions aimed at decreasing the high rate of LBW through incressing antenatal care and consumption of iron supplementation during pregnancy.	Not attending antenatal care increased the odds of having a LBW infant by more than two times [OR 2.301; 95% CI (1.526-3.471)]. Mothers not consuming iron supplementation during their pregnancy were more likely to have LBW infants [OR 1.839; 95% CI (1.282-2.363)]. Residing in the Far-western and Eastern region were also significant risk factors for LBW in the pooled dataset and in 2011 survey.	individuals, couples, households, health facility
MH48	Clarke, K., Saville, N., Shrestha, B., Costello, A., King, M., Manandhar, D., … Prost, A. (2014). Predictors of psychological distress among postnatal mothers in rural Nepal: A cross-sectional community-based study. *J Affect Disord* , *156* , 76–86. https://doi.org/10.1016/j.jad.2013.11.018	Dhanusha	Quant	Mothers screened for distress after delivery	9078 mothers who were screened for distress using the 12 item General Health Questionnai re (GHQ-12) around six weeks after delivery	Maternal health	Psychological distress	Food insecurity, multiple births, C-section, perinatal health problems, education, ANC, parity, husband's education, age	N/A	Factors that predicted distress were severe food insecurity (L) 2.21 (95% confidence interval 143, 3.40)), having a multiple birth (2.28 (1.27, 4.10)), caesarean section (1.70 (0.29, 2.24)), perinatal health problems (1.58 (1.23, 2.02)), no schooling (1.37 (1.08, 1.73)), fewer assets (1.33 (1.10, 1.60)), five or more children (1.33 (1.09,1.61)), poor or no antenatal care (1.31 (1.15, 1.48)p <0001), having never had a son (1.31 (1.14, 149)), not staying in the parental home in the postnatal period (1.15 (1.02,1.30)), having a husband with 110 schooling (1.17 (0.96, 1.43)) and lower maternal age (0.99 (0.97, 1.00)). Socioeconomic disadvantage; healthcare-seeking/RH; gender-related factors and social norms linked with maternal distress	individual; HH
MH44	Cederfeldt, J., Carlsson, J., Begley, C., & Berg, M. (2016). Quality of intra-partum care at a university hospital in Nepal: A prospective cross-sectional survey. *Sexual & Reproductive Healthcare : Official Journal of the Swedish Association of Midwives* , *7* , 52–57. https://doi.org/10.1016/j.srhc.2015.11.004	Nepal	Quant	NGO, government	292	Maternal health	quality of care			The management of care in normal birth could be improved in the studied setting, and there is a need for more research to support such improvement	health facility
MH16	Benson, J., Healy, J., Dijkerman, S., & Andersen, K. (2017). Improving health worker performance of abortion services: an assessment of post-training support to providers in India, Nepal and Nigeria. *Reproductive Health* , *14* (1), 154. https://doi.org/10.1186/s12978-017-0416-0	India, Nepal, Nigeria	Quant	NGO, government	3471	Family planning; maternal health	quality of care for abortions	following training intervention		1. Benson J, Healy J, Dijkerman S, Andersen K. Improving health worker performance of abortion services: an assessment of post-training support to providers in India, Nepal and Nigeria. Reprod Health [Internet]. 2017 Dec 21 [cited 2018 Jul 22];14(1):154. Available from: https://reproductive-health-journal.biomedcentral.com/articles/10.1186/s12978-017-0416-0	health facility
MH82	Karkee, R., Lee, A. H., & Pokharel, P. K. (2014). Women's perception of quality of maternity services: a longitudinal survey in Nepal. *BMC Pregnancy and Childbirth* , *14* , 45. https://doi.org/10.1186/1471-2393-14-45	Kaski	Quantitative	Pregnant women	701	Maternal health	Quality of services	Type of facility (priv vs. public)		Overall, perception of quality differed significantly by types of health facility used for delivery. They rated lowest the supplies and equipment in birth centres and the amenities and interpersonal aspects in the public hospital. Accordingly, attention to these aspects is needed to improve the quality. Mean scores of total quality and sub-scales health facility and health care delivery for women attending private hospital were higher ($p < 0.001$) than those using birth centre or public hospital. Mean score of the sub-scale interpersonal aspects for public hospital users was lower ($p < 0.001$) than those delivered at private hospital and birth centre. However, perception on interpersonal aspects by women using public hospital improved significantly after delivery ($p < 0.001$).	Health facility
MH120	Ahmed, S. M., Rawal, L. B., Chowdhury, S. A., Murray, J., Arscott-Mills, S., Jack, S., … Kuruvilla, S. (2016). Cross-country analysis of strategies for achieving progress towards global goals for women's and children's health. *Bulletin of the World Health Organization* , *94* (5), 351–361. https://doi.org/10.2471/BLT.15.168450		Systematic Review	10 low and middle income countries that met MDG's early		Maternal health; child health	reducing maternal and child mortality rates	consistent and coordinated policy and programs		Reducing maternal and child mortality in the 10 fast-track countries can be linked to consistent and coordinated policy and programme inputs across health and other sectors.	societal/structural/politi cal

MH3	MOHP/UNFPA	National	Mixed	WRAs	4277	Maternal Health	RH Morbidities	Age, literacy and CE group		POP prevalence decreased from 10% in 2006 to 6.4% Still very high. Conservative management of POP needs to be prioritized equally to surgical management. • Need for focused strategy to increase awareness and identify women with OF.	Policy/structure
MH167	Pradhan, E., & Fan, V. Y. (2017). The Differential Impact of User-Fee Exemption Compared to Conditional Cash Transfers on Safe Deliveries in Nepal. *Health Services Research* , *52* (4), 1427–1444. https://doi.org/10.1111/1475-6773.12536	National (DHS)	Quantitative	8,785 children born between July 2005 and December 2008, obtained from the nationally representative Demographic and Health Surveys, 2006 and 2011.	8,785 children born between July 2005 and December 2008, obtained from the nationally representative Demographic and Health Surveys, 2006 and 2011.	Maternal health	SBA	copayment exemption compared to a cash incentive on increasing skilled birth attendance (i.e., birth attended by a skilled health worker) in Nepal.; road networks		Skilled birth attendance in districts with both interventions was no higher on average than in districts with only the cash incentive. In areas with adequate road networks, however, significantly higher skilled birth attendance was observed in districts with both interventions compared to those with only the cash incentive. CONCLUSIONS: The added incentive of the user-fee exemption did not significantly increase skilled birth attendance relative to the presence of the cash incentive. User-fee exemptions may not be effective in areas with inadequate road infrastructure.	Health facility; community/structural
MH83	Kc, S., Neupane, S., Situ, K. C., & Neupane, S. (2016). Women's Autonomy and Skilled Attendance During Pregnancy and Delivery in Nepal. *MATERNAL AND CHILD HEALTH JOURNAL* , *20* (6), 1222–1229. https://doi.org/10.1007/s10995-016-1923-2		Secondary analysis - 2011 Nepal DHS data	Pregnant women and skilled attendants	4148	Maternal health	SBA	Women's autonomy was assessed on the basis of four indicators of decision making: healthcare, visiting friends or relatives, household purchases and spending earned money. association between women's autonomy and skilled attendance during pregnancy and delivery	none discussed but recommendation could be to look at improving women's autonomy	Women's autonomy was significantly associated with the maternal health care utilization by skilled attendants. This study will provide insights for policy makers to develop strategies in improving maternal health.	Policy/societal level
MH10	Ghimire PR, AghoKE, Renzaho A, Christou A, Nisha MK, Dibley M, et al. (2017) Socio-economic predictors of stillbirths in Nepal (2001-2011). PLoS ONE 12(7): e0181332.https:// doi.org/10.1371/journal.pone.0181332	Nepal	Quantitative	WRAs having still birth	335	Maternal health	Still birth	ecological zone, occupation, schooling, open defecation		Access to antenatal care services and skilled birth attendants for women in the mountainous and hilly ecological zones of Nepal is needed to further reduce stillbirth and improved services should also focus on women with low levels of education	Policy
MH63	Ghimire, P. R., Agho, K. E., Renzaho, A., Christou, A., Nisha, M. K., Dibley, M., & Raynes-Greenow, C. (2017). Socio-economic predictors of stillbirths in Nepal (2001-2011). *PloS One* , *12* (7), e0181332. https://doi.org/10.1371/journal.pone.0181332	Nepal	Quantitative	Pregnancies - at least 28 weeks gestation	18386	Maternal health	stillbirth	Socio-dem; health behaviors		Stillbirth increased significantly among women that lived in the hills ecological zones (aRR 1.38, 95% CI 1.02, 1.87) or in the mountains ecological zones (aRR 1.71, 95% CI 1.10, 2.66). Women with no schooling (aRR 1.72, 95% CI 1.10, 2.69), women with primary education (aRR 1.81, 95% CI 1.11, 2.97); open defecation (aRR 1.48, 95% CI 1.00, 2.18), and those whose major occupation was agriculture (aRR 1.80, 95% CI 1.16, 2.78) are more likely to report higher stillbirth.	Indivdual; Household; community
MH12	Self, J., Haardrfer, R., Stein, A., Pandey, P., Martorell, R., & Girard, A. W. (2015). How Does Homestead Food Production Improve Child Nutrition? Path Analysis of the AAMA Project in Nepal. *FASEB JOURNAL* , *29* (1).	Far west Nepal	Quantitative	Mothers with children 12-48 months	2614	Child health; maternal health	Stunting (height-for-age); maternal and child hemoglobin		HKI AAMA Project	Agricultural inputs had strongest path; some concerns about intervention fidelity mentioned (but it was an abstract...)	Household
MH65	Goyet, S., Tamang, L., Alvarez, V. B., Shrestha, I. D., & Bajracharya, K. (2017, February). Progress and challenges to introduce midwifery education in Nepal. *Lancet (London, England)* . England. https://doi.org/10.1016/S0140-6736(17)30341-0	Nepal	Comment	Health workforce	N/A	Maternal health	Training of midwives			Positive commentary on progress of training midwives to be SBA	Health facility
MH21	Malarcher, S., & Polis, C. B. (2014). Using measurements of unmet need to inform program investments for health service integration. *Studies in Family Planning* , *45* (2), 263–275. https://doi.org/10.1111/j.1728-4465.2014.00388.x	Nepal, Senegal and Uganda	Secondary analysis of DHS data (2010 or later)	married or cohabitating women of reproductive age	DHS national level household surveys	Family planning; reproductive health; maternal health	unmet need for contraception or FP		N/A	There might be missed opportunities to reach MWRA with unmet FP needs through integrated services such as prenatal care, postnatal checkups, vaccination appointments, etc.	individual, couple, houshold, health facility
MH155	Morrison, J., Jacoby, C., Ghimire, S., & Oyloe, P. (2015). What affects Clean Delivery Kit utilization at birth in Nepal? A qualitative study. *Asia-Pacific Journal of Public Health* , *27* (2), NP1263-72. https://doi.org/10.1177/1010539512458950	6 districts	Qualtative	Clean delivery kit users and non-users; health providers; birth attendants; household Dmers; central level personnel	18 FGDs; 40 interviews	Maternal health; neonatal health	Use of clean delivery kit	Awareness; availability		CDK users were aware of its benefits, and utilization was largely compatible with birth practices. Utilization was prevented by lack of awareness about the benefits and lack of availability. Participants believed that CDKs were for home use. CONCLUSION: Poor promotion of CDK is related to the disjuncture of promoting CDK use, while encouraging institutional deliveries. If CDKs are made available and marketed for use in households and health institutions, utilization may increase.	Individual; health facility
MH38	Arguello, M. A., Schulze, K. J., Wu, L. S., Dreyfuss, M. L., Khatry, S. K., Christian, P., & West, K. P. (2015). Circulating IGF-1 may mediate improvements in haemoglobin associated with vitamin A status during pregnancy in rural Nepalese women. *Asia Pacific Journal of Clinical Nutrition* , *24* (1), 128–137.	Nepal - rural areas	Quant	NGO, government	1186	Maternal health	Vit A levels	IGF-1, and Hb		"Increasing IGF-1 was likely one mechanism by which retinol improved circulating Hb in pregnant women of rural Nepal,"	health facility, societal/structural/policy
MH35	Aihara, Y., Shrestha, S., & Sharma, J. (2016). Household water insecurity, depression and quality of life among postnatal women living in urban Nepal. *JOURNAL OF WATER AND HEALTH* , *14* (2), 317–324. https://doi.org/10.2166/wh.2015.166	Urban Nepal	Quant	postnatal women living in urban Nepal	267	Maternal health	water insecurity, depression, and quality of life	levels of stress from water insecurity		Multiple regression models showed that women with high levels of stress derived from household water insecurity had greater odds of probable depression and lower physical HRQOL scores than did women with low HWIS scores.	community, household, individual
MH66	Gram, L., Skordis-Worrall, J., Manandhar, D. S., Strachan, D., Morrison, J., Saville, N., … Heys, M. (2018). The long-term impact of community mobilisation through participatory women's groups on women's agency in the household: A follow-up study to the Makwanpur trial. *PLOS ONE* , *13* (5). https://doi.org/10.1371/journal.pone.0197426	Makwanpur district	Quantitative	Mothers participating in a community randomized trial in 2001-3 who were recruited for follow-up in 2014	4030	Maternal health	Women's agency	Participation in a PLA intervention	PLA women's groups	In original trial: At the end of the trial, a 30% reduction in neonatal mortality and a 78% reduction in maternal mortality was observed in deliveries occurring in intervention compared to control clusters Found no association between participation and agency at long-term follow-up. Suggest that agency may be a pre-req not a consequence	Individual/Couple/household
MH22	Thapa, S. B., & Acharya, G. (2017). Women's health is not in focus in disaster zones: lessons from the Nepal earthquake. *JOURNAL OF FAMILY PLANNING AND REPRODUCTIVE HEALTH CARE* , *43* (2), 92–93. https://doi.org/10.1136/jfprhc-2016-101605	Nepal	Commentary	Women		Family planning; reproductive health; maternal health				Earthquake exacerbated health challenges for women; issues with access and existing vulnerabilities were worsened	Individual; community; societal
MH32	Adams, V., Craig, S., Samen, A., & Bhatta, S. (2016). It Takes More than a Village: Building a Network of Safety in Nepal's Mountain Communities. *Maternal and Child Health Journal* , *20* (12), 2424–2430. https://doi.org/10.1007/s10995-016-1993-1	Nepal - mountain communities	Theory / Description	NGO's working in MCH		Maternal health				"This report describes and analyzes successful efforts to reduce maternal and infant mortality in a culturally astute, durable, and integratedway,aswellasexamplesofinnovationand success experienced by enacting the network of safety model"	Community, Individual
MH74	John, A. (2015). Towards midwifery education and regulation in Nepal. *The Practising Midwife* , *18* (8), 24–26.	Nepal	Commentary	Midwives; policymakers		Maternal health				midwifery education, regulation, and professional associations are important for workforce strength in Nepal	Health facility

MH121	Dangal, G., & Bhandari, T. R. (2016). Updates on maternal and child health. *Kathmandu University Medical Journal , 14* (54), 94–95.	National	Editorial			Maternal health; child health				Reductions in MMR; birth attendance by SBA increased; challenges in access to reproductive healthcare; improvements in reducing child mortality and improving measles immunization; reducing neonatal deaths a continued challenge calls to improve targets to be more inclusive of hardest to reach populations - sex, age, ethnicity, disability, geographic location	Societal
MH140	Khanal, V., Karkee, R., Lee, A. H., & Binns, C. W. (2016). Adverse obstetric symptoms and rural-urban difference in cesarean delivery in Rupandehi district, Western Nepal: a cohort study. *REPRODUCTIVE HEALTH , 13* . https://doi.org/10.1186/s12978-016-0128-x	Rupandehi district, Western Nepal	Quantitative - A community-based cohort study	Postpartum mothers	735 mothers within one month postpartum	Maternal health; neonatal health	Cesarean section	obstetric complications and rural-urban difference in cesarean delivery rate in Western Nepal.	none	About one in five mothers reported some adverse obstetric symptoms. Obstetric problems were more common in the rural areas, whereas cesarean delivery rate was much higher in the urban areas.	

Health behavior of interest: ANC							
Socio-ecological level	**Reference number**	**Factor shown to be significantly associated with ANC**	**Location of study (specific district, region, or nationally)**	**Population where association found**	**Who not using services? Reasons not using services? Preferences for services? Trust in services?**	**How do culture, values, and norms influence health service utilization?**	**What SBC interventions really change behaviors**
Individual							
	MH50	Exposure to media; knowledge of maternal health services and incentives	Sunsari	Women delivering in last year	Media; kmnowledge		
	MH4	Age, parity, education; smoking; exposed to general media	National	Women giving birth in last 5 years	Socio-demographic; risky health behaviors		
	MH95	Education	National	Women giving birth in last 5 years	Socio-demographic;		
	MH96	Literacy	National	Women giving birth in last 5 years	Socio-demographic;		
	MH162	Age, education, type of work (service vs. agricultural work); parity	Makwanpur	Women delivering in last year	Socio-demographic;		
	MH103	Healthcare experiences (gestational age, birth rank, preceding birth interval); education	National	Women delivering	Healthcare experiences; Socio-demographic;		
	MH114	woman's education	National	Women delivering in last 3 years	Socio-demographic;		
	MH106	Age, planned pregnancy	Pokhara	Women delivering	Socio-demographic; birth preparation		
	MH107	Age, education, parity	Near Kathmandu	Mothers	Socio-demographic;		

	MH91	Superstition, shyness, misconception, negligence, illiteracy, lack of awareness; alcoholism	Jhapa	pregnant women, postnatal mothers, mothers-in-law and service providers	Perceptions/attitudes; knowledge; Socio-demographic; risky health behaviors		
	MH100	Education	National	Women delivering in last 3-5 years	Socio-demographic;		
	MH64	Age of marriage (varies depending on parity, area of residence)	National	Mothers	Socio-demographic;		
	MH166	Education; pregnancy wantedness	National	Mothers	Socio-demographic; birth preparation		
	MH34	Age, parity, education	National	Mothers	Socio-demographic;		
	MH28	Exposure to mass media communication campain	Dhanusha	Mothers of children under 1	Exposure to media		

Health behavior of interest: ANC							
Socio-ecological level	**Reference number**	**Factor shown to be significantly associated with ANC**	**Location of study (specific district, region, or nationally)**	**Population where association found**	**Who not using services? Reasons not using services? Preferences for services? Trust in services?**	**How do culture, values, and norms influence health service utilization?**	**What SBC interventions really change behaviors**
Couple							
	MH4	Spousal education; spousal occupation	National	Women giving birth in last 5 years	Spousal characteristics		
	MH103	Husband's education	National	Women giving birth	Spousal characteristics		
	MH114	husband's education	National	Women delivering in last 3 years	Spousal characteristics		
	MH106	Education of spouse; occupation of spouse	Pokhara	Women delivering	Spousal characteristics		
	MH119	Paternal age, education, knowledge of danger sign during pregnancy; husband's decision making for seeking maternal and child healthcare	Kathmandu	Husbands of women giving birth	Spousal characteristics; spousal role in decision-making		

Health behavior of interest: ANC							
Socio-ecological level	**Reference number**	**Factor shown to be significantly associated with ANC**	**Location of study (specific district, region, or nationally)**	**Population where association found**	**Who not using services? Reasons not using services? Preferences for services? Trust in services?**	**How do culture, values, and norms influence health service utilization?**	**What SBC interventions really change behaviors**
Fam or household							
	MH50	Ethnic group; women's autonomy; wealth	Sunsari	Women delivering in last year	Ethnicity; women's autonomy; economic factors		
	MH4	Household SES; Women's role in DM	National	Women giving birth in last 5 years	women's autonomy; economic factors		
	MH95	Wealth	National	Women giving birth in last 5 years	economic factors		
	MH96	Wealth	National	Women giving birth in last 5 years	economic factors		
	MH162	income, type of family (caste, religion)	Makwanpur	Women delivering in last year	economic factors; ethnicity; religion		
	MH103	Wealth, DM on women's healthcare;	National	Women delivering	women's autonomy; economic factors		
	MH114	wealth quintile	National	Women delivering in last 3 years	economic factors		
	MH106	Income	Pokhara	Women delivering	economic factors		
	MH119	Household wealth	Kathmandu	Husbands of women giving birth	economic factors		
	MH107	Wealth	Near Kathmandu	Mothers	economic factors		

	MH91	economic barriers (large family size, jobless, unnecessary expenditure on health services)	Jhapa	pregnant women, postnatal mothers, mothers-in-law and service providers	economic factors		
	MH100	Poverty	National	Women delivering in last 3-5 years	economic factors		
	MH166	Wealth; Caste	National	Mothers	economic factors; ethnicity		
	MH34	ethnicity, wealth index, autonomy	National	Mothers	women's autonomy; economic factors; ethnicity		

Health behavior of interest: ANC							
Socio-ecological level	**Reference number**	**Factor shown to be significantly associated with ANC**	**Location of study (specific district, region, or nationally)**	**Population where association found**	**Who not using services? Reasons not using services? Preferences for services? Trust in services?**	**How do culture, values, and norms influence health service utilization?**	**What SBC interventions really change behaviors**
Community							
	MH4	Living in an urban area	National	Women giving birth in last 5 years	Place of residence		
	MH95	Residence (urban vs. rural; ecological zone)	National	Women giving birth in last 5 years	Place of residence		
	MH96	Residence (urban vs. rural; ecological zone)	National	Women giving birth in last 5 years	Place of residence		
	MH114	Place of residence (rural vs. urban)	National	Women delivering in last 3 years	Place of residence		
	MH107	community-based health promotion intervention using women's groups	Near Kathmandu	Mothers	Community-based		
	MH159	Community Based Newborn Care Package	Bardiya	Mothers	Community-based		Community Based Newborn Care Package
	MH100	Rural/urban status	National	Women delivering in last 3-5 years	Place of residence		
	MH146	Community-level intervention (five-component intervention that addressed previously identified barriers to SBA services in mid- and worked with existing community groups and funds Family support; Financial assistance; Transport; Women-friendly environment at health facilities; SBA security	Bajhang, Dailekh and Kanchanpur	Women giving birth	NOT SIGNIFICANT IMPACT		
	MH164	community-based newborn care package (CBNCP)	National	Women giving birth	NOT SIGNIFICANT IMPACT		
	MH166	rural/urban;	National	Mothers	Place of residence		
	MH34	place of residence	National	Mothers	Place of residence		

Health behavior of interest: ANC							
Socio-ecological level	**Reference number**	**Factor shown to be significantly associated with ANC**	**Location of study (specific district, region, or nationally)**	**Population where association found**	**Who not using services? Reasons not using services? Preferences for services? Trust in services?**	**How do culture, values, and norms influence health service utilization?**	**What SBC interventions really change behaviors**
Health facility or health system							
	MH4	Receipt of ANC from a skilled provider; receipt of ANC in a hospital	National	Women giving birth in last 5 years	Provider-level; type of services		
	MH52	Provider biases towards providing services to women with disabiltiies	Rupandehi	Women with disabilities seeking maternal healthcare	Provider-level		
	MH110	health systems strengthening intervention	Arghakhanchi	Mothers of children aged 0-23 months	Health system strengthening		
	MH71	Expansion of private sector and provision of government services reducing inequity in service use	National	Mothers	type of services		
	MH126	Community-centered models of health system strengthening; emerged as critical. At micro (service interface) level, community-centred models; accessibility and training of providers	National	Mothers	Health system strengthening; provider-level		

Health behavior of interest: ANC							
Socio-ecological level	Reference number	Factor shown to be significantly associated with ANC	Location of study (specific district, region, or nationally)	Population where association found	Who not using services? Reasons not using services? Preferences for services? Trust in services?	How do culture, values, and norms influence health service utilization?	What SBC interventions really change behaviors
Societal, policy, structural, or environmental							
	MH118	Free delivery care policies (MIS and Aama policies)	National	Mothers; births	Policy		
	MH97	delivery of care via public-private partnership	Accham	Mothers	Public-private		Cost-effectiveness of public-private partnership
	MH91	Cultural practices (household roles, pregnancy practices, birthing traditions, indigeneous practices)	Jhapa	pregnant women, postnatal mothers, mothers-in-law and service providers	Cultural practices		
	MH43	Increased trend in MCH care utilizatin post-conflict	National	Mothers	National trends		
	MH126	Governance with effective and committed leaders; commitment from donors; increase in funding to the health sector; inter-sectoral partnerships as well as decentralization and task-shifting	National	Mothers	Governance; Funding; Public-private		