Investment Case for Equitable Access to Maternal Neonatal and Child Health Services in Nepal: Stakeholders' Perspective in Nepal

Keywords: Investment Case, District Investment Case, equitable access, maternal and child health services in Nepal

ABSTRACT

Background: Investment Case is a participatory approach that has been used over the years for better strategic actions and planning in health sector. Based on this approach, in partnership with government, non-government partners, and UNICEF Nepal, District Investment Case (DIC) program was launched to improve maternal neonatal and child health services. In the meantime, this study aimed to explore perceptions and experiences of local stakeholders regarding health planning and budgeting and explore the role of the DIC program in ensuring equity in access to maternal and child health services. Methods: This study adopted exploratory phenomenography design with purposive sampling technique for data collection. Three DIC implemented districts and three comparison districts were selected and a total of 30 key informant interviews with district-level stakeholders and six focus groups with community stakeholders were carried out. A rigorous iterative analysis process using a phenomenographic approach was used. Results: Investment Case approach helped stakeholders in planning systematically based on evidence through a collaborative and participatory approach while in comparison areas past year plan was mainly taken as reference. Resource constraints and geographical difficulty were key barriers in executing the desired plan in both intervention and comparison districts. Positive changes were observed in the coverage of maternal and child health services in both groups. However, few reported no difference due to the DIC program. The participants specified the improvement in access to information, access, and utilization of health services by women. This has influenced positive healthcare-seeking behavior. Conclusions: The decentralized planning and management approach at the district level helps to ensure the equity in access to maternal, newborn, and child health care. However, quality evidence, inclusiveness, functional feedback and support system, and local resource utilization should be a key consideration.
INTRODUCTION:

Nepal has achieved several Millennium Development Goals (MDGs) and has been close to attaining the target of reducing maternal mortality to 258 against 213 per 100,000 live births [1]. These improvements are results of focused strategies like addressing direct causes of maternal deaths, increasing skilled birth attended deliveries, promotion of institutional delivery, and strive towards assuring universal access to basic maternal and child health services [2, 3]. Nepal, complying with international commitments, launched various targeted programs, policies, and strategies since 90s. Such efforts aimed at reducing the demand side as well as supply-side barriers to ensure proper service readiness, delivery, and utilization. National Safe Motherhood Program in 1997 [4], National Safe Motherhood Plan 2002-2017 [5], SBA policy in 2006 [6], National Neonatal Health Strategy 2004 [7], Community Based Newborn Care Program in 2007 are some major names to be mentioned here.

These improvements and efforts are very much appreciated but the equity gap has always existed across geography, ethnicity, and economic status in terms of maternal and neonatal service utilization which is evident from findings of Nepal Demographic Health Surveys of 2006, 2011, and 2016 [8-10]. For instance, Nepal has been one of the exemplars in under-five stunting reduction but when we look in detail at a subnational level, rate of reduction, as well as current prevalence, differs across different geographic regions, wealth quintiles, mothers education and other parameters [11]. There have been significant efforts from government sectors to reduce such inequities. These include but are not limited to birth preparedness package, aama program (known as Safe Delivery Incentive Program in 2006), free access to essential medicines, emergency referral fund, rural ultra-sound program. Also, efforts have been done in improving health system capacity overall and focus has been made for poor and vulnerable population.

However, these efforts seem insufficient considering access to maternal and child health services, particularly for rural and poor people. Nepal was found to have 0.67 doctors and nurses per 1,000/population, which is significantly less than the WHO recommendation of 2.3 doctors, nurses, and midwives per 1,000/population [12]. Furthermore, around a peripheral health system that are primary and main service providers, critical knowledge and capacity gaps exist, which prevent evidence from making a direct contribution to health plans and budgets [13]. Health system constraints often have the greatest impact on disadvantaged populations, resulting in poor access to quality health services among vulnerable groups [14].

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In this regard, it is important to have quality actions at the local level which is only possible when local authorities are aware of maternal and newborn health situations and can identify gaps, develop innovative and effective strategies, and can implement them. Technical knowledge and skills on evidence-based approaches and effective frameworks for management are not optimum among local stakeholders. The investment case approach helps the local authorities in overcoming such limitations, particularly in low resource settings. This approach pairs locally-led problem-solving analysis with quantitative techniques to inform local planning and decision-making adopting locally appropriate strategies.

The Investment Case approach uses concepts from 'Tanahashi model' and bottlenecks analysis framework to identify the current obstacle to access coverage and performance and determine the costs and impact of potential interventions to improve performance and overall equity [13]. The analysis is based on six areas of an intervention/health service to measure and identify barriers with the selection of SMART indicators. These areas are modified form of Tanahasi Model i.e. availability of essential commodities, availability of skilled human resources, physical accessibility, the initial utilization of services, continuity of services, and effective coverage [15]. First, three analyzes supply-side constraints while the next three analyzes demand-side constraints.

**Investment Case Approach in Nepal:** Investment Case approach was used in Nepal in the name of the District Investment Case program that was run by two national research institutes under technical and financial support from UNICEF Nepal and in close collaboration with the Government. The DIC was undertaken in 2011 in five districts of Nepal (Dadeldhura, Jajarkot, Kapilvastu, Dhading, and Udayapur) with technical assistance from national research institutes, University of Queensland, and UNICEF. In 2012, two national research institutes were selected by UNICEF to provide technical support to conduct DIC in eight districts in Nepal, namely Humla, Mugu, Dhanusha, and Saptari by one research institute and Achham, Baitadi, Bajhang, and Bajura by another national research institute. Similarly, in 2013, one research institute was responsible to conduct in Rautahat, Mahotari, and Doti and another research institute in Jumla, Kalikot, Dolpa, and Parsa districts. In the financial and technical support of UNICEF Nepal and guidance of the Ministry of Health and Population, two national research institutes carried out this program in altogether 21 districts of Nepal. Low developed (based on Human Development Index value) districts from the UNICEF Nepal working areas, were selected comprising different geographical terrain.

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The partner national research institutes for the program, coordinated directly with district-level stakeholders for the implementation of the program. DIC program was a type of add-on in the functionality of the district health system, particularly the planning process. Over the period, there have been substantial changes in approaches to how the program was conducted. In the beginning, a matrix tool was used while Marginal Budgeting for Bottlenecks (MBB) was used in the second or later phases of the program. The number of tracer indicators used to evaluate specific health programs was also reduced in later phases. Also, when the program was in the first phase, all stakeholders from all districts (few representatives from each district) were called at one place for planning workshops whereas separate district level workshops were conducted in second or later phases. The DIC is a strategic and evidence-based problem-solving approach to support better maternal, neonatal, and child healthcare planning and budgeting. The program facilitated decentralized planning, budgeting, and management. Also, supported in monitoring and supervision of the implementation of the strategic plan of action [16].

The proper planning targeting unreached population whether through an expansion of service networks or enabling easy geographic access is needed in the context of Nepal to reduce inequity. As mentioned earlier, the DIC program is grounded in evidence, inequity in service coverage can easily be identified through this program and targeted interventions can be designed. Evidence suggests that IC approach helps in improving situation of maternal and child health in Nepal and other countries [13, 14, 17]. In this regard, this study aimed to understand the perception and experience of local stakeholders regarding health planning and budgeting and explore the role of IC approach in influencing the planning and budgeting process to ensure equitable access to MNCH services in Nepal.

MATERIALS AND METHODS:

Study setting: The study was conducted in purposively selected six districts based on Human Development Index (HDI) values and other indicators, three interventions (Bajhang, Baitadi, and Parsa) and three comparisons (Darchula, Sindhuli, and Bara), of Nepal in June 2014. Districts were selected ensuring that at least one district was from mountain, hill, and plain in each intervention and control group. Intervention districts were DIC program implemented while controls were with similar characteristics except for the intervention. Also, before the DIC program, all these districts shared similar health service coverage indicators [18].

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Bajhang (mountain), Baitadi (hill), Parsa (plain) among interventions and Darchula (mountain), Sindhuli (hill), and Bara (plain) among control districts.

**DIC program:** This program investigates the hindrances in the path of achievement of targeted health outcomes that prevails in the district health system. It recommends evidence-based strategies that can be adopted for better achievement of those health outcomes. It validates evidence from multiple sources through consultative meetings with stakeholders. While doing so, DIC considers the level of feasibility of implementing those strategies at the district level. The major domains for feasibility include policy issues, cultural barriers, and financial constraints. In gist, the main characteristics of this approach are that the entire process is evidence-driven (both local, national, and international evidence).

Implementation of the DIC program is usually a five-step process, starting from advocacy with the government and ends with presenting results (cost and impact) to the stakeholders and creating buy-in for implementation. In the first step i.e. advocacy with government, various official meetings are held with various stakeholders from central as well as district level. This advocacy is mainly to explain the whole process and obtain an official buy-in of the government party to use DIC process and the MBB tool in Nepal. The second step involves the selection of tracer interventions and tracer indicators. Tracer interventions are representative programs/ components of programs and analyzing them gives an overall picture or near true analysis of overall health system. The key consideration for tracer interventions is a) national relevancy, b) international recommendation, c) availability of data across six coverage determinants [15], d) proven to have a high impact on health outcomes. However, tracer selection was based on comprehensive consultations made at the national and district levels. In this DIC program components related to maternal, child, and newborn health were selected. Also, these tracers were selected from different levels/ categories of health services like family-oriented community-based services, population oriented schedulable services, and individual-oriented clinical services. Similarly, step three involves data mapping and collection, which included identifying and accessing all the potential data sources and retrieving required data from the sources. The major sources of data are published reports, surveys, treatment guidelines, and annual reports published by the Department of Health Services. Additionally, some primary data were collected from focal persons from the health system, local level stakeholders like Female Community Health Volunteers.
Furthermore, step four comprises data validation, bottleneck analysis, and strategies conceptualization and development. This step was carried out through workshops, usually, four days’ held at the district level. The collected data are validated in the workshop through in-depth discussion among participants. Bottlenecks are identified through group discussion by stakeholders themselves under the supervision of technical experts and the same is the case for the development of strategies to overcome those bottlenecks. Bottleneck analysis is guided by Tanahashi framework for health system analysis, which helps in identifying constraints from both supply and demand sides [15]. Finally, in the last step MBB tools are used to develop model scenarios. Bottlenecks and strategies identified during consultations with the district stakeholders are entered in the MBB tool, which was used to model three scenarios through a consultative process. Best scenario is implemented, and progress is monitored. The process is repeated every year during the annual planning process. In a few selected districts, finalized interventions were supported by UNICEF Nepal.

**Study Design:** This research investigated stakeholders’ perceptions and experiences on the Investment Case approach to ensure equitable access to MNCH services in Nepal. Hence, the phenomenographic research approach was used for exploring their perceptions as well as experiences [19, 20]. The following subsections explain the detailed procedure involved in this phenomenographic research.

**Phenomenography:** Researchers using the phenomenographic method hold certain assumptions regarding the creation of knowledge. They conceptualize that knowledge is relational, that is its nature, in a distinct context knowledge is not entirely independent. Rather, it is subjective and maintains a relationship with the study subject and the investigated phenomenon [21], the implication of investment case in ensuring equitable access for maternal and child health services, in this study. Therefore, the creation of knowledge is discerned from the study participants’ experience toward the phenomenon. This research approach here is not to discern stakeholders’ experiences of the phenomenon as such, rather it stressed identifying variation in the ways of experiencing the phenomenon presented in qualitatively different categories or themes. Hence, the aim of using phenomenography in this study was to come up with a set of themes of description derived from the stakeholders’ understanding regarding the investment case approach to ensure equitable access in MNCH services.
Each theme of description reflects a unique feature of the experience of the investigated phenomenon that is logically linked with each other and, describes their similarities and dissimilarities, at the same time [22]. Combining these themes demonstrate a structure, called outcome space that describes the different ways and relationships through which a researcher interprets how a phenomenon is experienced at a collective level [23]. Within the premise of this research, we explored the perception and experiences of stakeholders. Therefore, we followed a phenomenographic strategy to determine sample size, collect data, and analyze data to discern outcome space.

**Study Participants:** The study participants were key stakeholders from different levels of the health system. District (public) health officer - district-level health manager who oversee all the health activities in the entire district; public health nurse - works at District Health Office and coordinates all nursing related activities of the district; frontline health workers like health assistants, auxiliary health workers, auxiliary nurse midwives, staffs nurses and medical officers; local development officers - chief of Local Development Office, who coordinates and oversee entire development activities of the district including health; and secretary of village development committees along with the program implementers were key stakeholders considered in this study.

Purposive sampling technique was used in selecting the participants to ensure the required level of variation among the stakeholders’ experiences and, consequently, among their ways of perceiving the District Investment Case program. We followed three main principles to maximize the variations among the participants: (a) each selected stakeholder had some experience or as part of the District Investment Case program at some point for at least six months during the implementation to ensure maximum in-depth understanding of the issue in intervention districts. However, the degree of experience among them was not necessarily the same, and that was considered to achieve maximum variation in their experiences. In the case of comparison districts, the following two criteria were only considered; (b) stakeholders recruited were from different levels or tiers in the health system; (c) participants selected were from different geographical regions and administrative regions of the country to maintain enough diversity in phenomenographic study.

**Data collection:** Interviews, the dominant data collection approach in phenomenographic study, were used [20]. In addition, focus group discussion (FGD) was also part of gathering data from community-level stakeholders. In these approaches, the information could be
clarified through probing in ways that are not easy through other methods of data collection. In this study, a semi-structured interview schedule/ FGD guideline with a list of queries was designed. Each interview lasted between 40 to 50 min and was held separately in places that were convenient for the stakeholders to express their views freely and comfortably. Verbal consent was obtained from stakeholders before data collection, being compliant with all the ethical standards needed for this study. Follow-up prompts and questions were asked following the response from stakeholders for discerning their in-depth awareness and experience on the issue, when necessary. The questions mainly focused on general health planning, budgeting and implementation process in knowledge and practice, particularly process indicators of investment case regarding facilitators and barriers in the process of planning, implementation and evaluation, in both intervention and comparison study areas and stakeholder’s experience and perception with District Investment Case program. This helped in gaining information to discern before and after experience and whether the change was observed in natural or the influence of the program. All together 30 KII (24 with district level stakeholders and 6 with Community managers) was conducted. Also, six Focus Group Discussion (8-10 participants per FGD) with FCHVs and members of the health mother’s group was conducted. These were recorded in the voice recorder after taking consent. The above-mentioned sample was based on the saturation of information.

Analysis of the Data: Rigorous iterative analysis process using a phenomenographic approach was used. The foundation for analysis begun with transcription, translation (from Nepali to English) of the interviews/ FGDs verbatim. It was then followed by the main analysis that was guided by the research of González [24]. At first, all transcripts were read and reread extensively to develop initial ideas regarding health planning and the impacts of DIC in ensuring equitable access in maternal and child health services. In the second step, the initial ideas were categorized in separate places based on their similarities and differences. This was followed by an accumulation of initial ideas together and then the primary theme of description was developed, with a focus on similarities, differences, and central meaning in each initial idea. Next, the theme of description was finalized using the following two guiding principles: (a) use of evidence from transcripts only; and (b) bracketing researchers’ conception concerning the phenomenon [21, 25]. Finally, the outcome space was articulated upon establishing relationships among the themes.
Rigor, Reliability, and Validity: The research adopted an iterative and collaborative approach that helped the study team to level up rigor, reliability, and validity [23]. The validity of outcome space was mainly based on the appropriateness of the internal logic of how the themes relate to each other [20]. Further, validity was also established upon a thorough examination of themes, in the light of senses they make among related studies [23]. This study had also taken consideration of reliability using an appropriate methodological procedure to attain consistent and high-quality data for analysis [23]. This included careful questionnaire construction for data collection, ensuring minimal influence or bias in the process of data collection, and adopted the analytical framework of the structure of perception and experiences. Moreover, researchers’ interpretation was controlled and checked to ensure results are presented in a manner to establish inter-judge communicability. Also, each step of the research was documented with care. Furthermore, in the context of phenomenographic research like this one, the research group is said to ensure completeness in analysis and minimize personal perspective [21]. Following the same, we as a team involved in all steps of the research.

RESULTS AND DISCUSSION:

RESULTS:

To answer the research question and fulfill its objectives, first, we present outcomes from stakeholders’ perceptions and experience regarding the health planning process and DIC program. Next, to gain in-depth insight into the themes of description and the DIC program and health planning process (investigated phenomenon), relationships among the themes are presented. Based on the analysis following four major themes of description emerged, as shown in table 1.
Table No. 1: Themes of description

<table>
<thead>
<tr>
<th>Key aspects</th>
<th>Theme A: Health Planning</th>
<th>Theme B: Resource allocation for health</th>
<th>Theme C: Implementation of Plan</th>
<th>Theme D: Equity in access to MNCH services</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- planning process</td>
<td>- Use of MBB tools</td>
<td>- influencers and hindrances in plan implementation</td>
<td>- equality in access to care for equal need</td>
</tr>
<tr>
<td></td>
<td>- evidence generation</td>
<td>- Conventional budgeting tools</td>
<td>- monitoring and evaluation</td>
<td>- equal use of services for equal need</td>
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<td></td>
<td>- participatory planning</td>
<td>- flexibility</td>
<td>- External support</td>
<td>- equal quality of care for all people in need</td>
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<td>- contingency or ad-hoc planning</td>
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<tr>
<td>Major focus</td>
<td>- evidence-based planning</td>
<td>- allocation of budget for health</td>
<td>- overcoming implementation challenges</td>
<td>- equitable distribution of scarce health resources</td>
</tr>
<tr>
<td>Impact of DIC*</td>
<td>- how far DIC stand out in practice for strategic analysis</td>
<td>- how far MBB has helped in easing budgeting and developing investment cases</td>
<td>- support from external parties in overcoming implementation challenges</td>
<td>- extent to which DIC program ensure equity in access</td>
</tr>
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</table>

*Observed among DIC program implemented districts with differential comparison of corresponding process and component among comparison districts.

a) Perception and experience of health planning in the district

In common everywhere, the district level planning was a bottom-up approach, started from the grassroots level, ward level to VDC level then gets approved at the district level. The planning process considered the previous year plan and the available local resources when coming up with new plans. Though planning in both districts was based on their perceived problems and available resources, in intervention districts at the district level it considered the evidence and developed strategies through planning workshops. However, no difference was observed in grass root level planning. According to the community managers, problems come from the village level like; women's welfare committee and are taken to the ward level for discussion at the VDC council. They sought intensive community participation during planning with involvement of ward citizen forum, improved social inclusion- female, dalit and disabled. However, there was a common voice of mothers in both categories of districts that they or their family members are often not consulted during village level annual planning.

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PI4: “No, I don’t know about this annual planning. We are not consulted during the process. Leaders do that themselves.”

In some cases, FCHVs were involved in the planning process, but not included during budget allocation. According to one FCHV from the comparison area, “They used to call us in the planning process but while allocating budget they do it by themselves”.

Changes observed at the district level in the intervention region were quite impressive, as felt by many stakeholders. They were with a more positive attitude towards annual health planning. Many felt that the involvement of political leaders in the DIC workshop has a positive influence on annual planning. This was not observed in the case of comparison districts. Stakeholders often but not always used a reference of past year plans and get approved new plans with certain modifications in it. Also, comparison districts stakeholders felt the lack of ownership of their plans and perceived that plans were driven by the national level.

PC6: We don’t bother much about annual planning. Budget from the central level is with certain modification and we accordingly adjust our past year plan…. Of course, we look at health indicators and what target was given by the central level and adjust our plan accordingly. But most of the time our activities are guided by the central level. Even if we send our plan and budget, most of the activities and budget heading are removed from there.

The study observed poor linkage of VDC level planning with the DIC program. In the DIC, community-level health indicators were obtained through various records and were used for district-level planning. Unfortunately, the annual plan developed at VDC level that is directly submitted to District Development Committee (DDC) was not considered too much extent. Also, stakeholders in some districts, both intervention, and comparison, faced problems in coordinating with DDC, particularly to incorporate their plan in district red book.

Technical staffs and frontline health workers expressed that the IC planning process was systematic and continuous which was evidence-based and not perception based, and the plans developed were focused to achieve the set targets in IC districts which were a positive sign of stepping towards evidence-based planning. Upon asking stakeholders in comparison district, whether they felt the need of DIC type program during annual planning? Most of them responded ‘Yes’. Most of the health workers from comparison districts often lack knowledge about the proper health planning process.
One of the barriers in the planning process reported in comparison districts was a lack of clarity among stakeholders about their responsibilities. On the other side, in intervention districts, more clarity regarding corresponding responsibilities was observed. According to the district level stakeholders, concerns are still being raised about the technical challenges for planning and implementation of the DIC. According to a District Health Officer, “It is a good approach for using data, analyzing data, and using the data for proper planning. However, it needs a lot of resources to operate it. It is somewhat complicated and hard to understand the different levels of stakeholders.”

b) Perception and experience with resource allocation in health

Besides governmental resources, UNICEF, USAID was major resource providers in intervention areas while SUHAARA and Plan International in comparison districts. In both the intervention and comparison districts, the health workers and district focal persons were coordinating with those partners. They were also involved in the planning and implementation of the programs/projects. For the allocation and segregation of budget, adopts bottom-up approach with the vigorous discussion of all stakeholders at all levels is carried out. The plans requiring big-budget and human resource-related support were transferred to the national level and the low to medium budget activities were approved at the district level. This was common in both groups.

It was found that in intervention districts after IC implementation, prioritization of the allocation of budget for health under different headings was found, which was further taken to the council for approval. Also, MBB tools were used at the district level in case of intervention while no such standard or similar tools were used in comparison districts.

According to one DHO from the intervention district, “…. Before DIC, the budget separated for health by all 68 VDC was just Rs. 5 million (US $ 4500). Currently, the amount separated for health programs by these VDCs has increased to Rs. 1 crore 35 million (US $ 120,000).” On other side, there was no significant difference in allocating budget for health among comparison districts.

c) Perception and experience of plan implementation

The district and community-level health stakeholders reported that the implementation of health programs runs as per the annual plan. A similar level of experiences and perceptions...
were observed in both groups regarding plan implementation. However, our focus was to observe how they overcome implementation challenges. In intervention districts, there was a support system who continuously guided and supervised their implementation and provided technical guidance. The district health officers as well as health workers mentioned that the IC approach has played an effective role in not only systematic planning but the execution of health activities as well.

A public health nurse said, “Enhanced collaboration and coordination among various stakeholders, such as political parties, health workers, VDCs and others to address these health issues has made the implementation effective and easier. Otherwise, it is very hard to convince political leaders for investment in health.” Similarly, Local Development Officer (LDO) and VDC secretary both expressed that, IC had successfully made all stakeholders accountable and supported to meet the health indicators considerably. The implementation process has been effective, and the local stakeholders are more positive towards it. They further added that UNICEF has supported strengthening health plans for the MNCH sector at the district level to reach optimal health status by addressing deep-rooted problems and by supporting the community level planning.

In contrast, in comparison districts, there was a lack of external support systems. So, implementation challenges were handled within their capacity. Of course, they had conventional support from the central and regional health team. Proper monitoring and supervision of the program were not done even in intervention districts though they had support from DIC team. Also, frequent transfer of staff was the main reason reported to be an obstacle in the proper implementation of the program.

The need for the strategic location of the I/NGOs in geographically remote areas and timely fulfillment of their commitments need to be assured by strong advocacy from national and community level governments. This was unanimously mentioned by the stakeholders. For effective implementation, the stakeholders dominantly expressed that there is a need for ownership among community people and stakeholders for its successful implementation.

Most of the health workers suggested that there was a need to make the government more responsive to implement the local level plans and provide budgetary assistance for VDC wise programs in health and increasing the public health activities like awareness programs and customization of IEC materials in local languages. For implementing it effectively and
evaluating the strategy, DHOs and PHNs suggested focusing more on implementation, monitoring, and supervision of the action plans set out during IC approach workshops with the establishment of the feedback system.

In the case of comparison districts also, lack of monitoring and supervision and functional feedback system was reported by stakeholders. One of them expressed, “…. there are a support system and feedback but in practice, it doesn’t work. Constructive feedback is not working well.”

d) Perception and experiences of equity in access to MNCH services

Stakeholders from all districts reported to have improved maternal and child health situations, including improved access compared to the past. Such improvements were mainly led or driven by national interest rather than locally grown. However, in the case of intervention districts, participants reported having locally developed innovative ideas such as using flag system (unique color flags for households with golden 1000 days’ mother) to track pregnant and lactating mothers to ensure no one is left behind. In most places of intervention districts, renovation and revitalization of primary healthcare outreach clinics, reactivation of mothers group for health, investment in health infrastructures were more frequently observed compared to comparison districts. Regarding such practices, a health worker from the intervention district expressed:

“When a child is born in the community, we provide the child’s naisargik adhikar (right by birth) like vaccinating the baby with all the available vaccines or vaccination is done without leaving any child. We have formed greeting/welcome cards for pregnant women. In every ward we go through the list of pregnant women and make them compulsory for four times checkup, to get vaccinated with TT, to take albendazole, iron tablets, to take green leafy vegetables in one of the meals”.

Similarly, investing in a human resource like recruiting staff on a contract where needed was also observed in both categories of districts. However, the frequency was slightly higher in intervention district. A health worker added, “…. previously there was only three staff but now it has increased, because of which we can go in the field for growth monitoring”. Contrary to this, in both sorts of districts, some stakeholders sought the lack of adequate human resources. Further, in supply-side improvement in the availability of human resources, the regularity of the services, SBA training frequency, medical equipment, and other logistics

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was reported in intervened districts while these were observed in lower frequency in comparison districts.

Importantly, in the case of intervention districts unreached population was identified through stakeholder’s consultation that led to design and implement targeted interventions. Any such practice was not observed in comparison districts. Reaching such a deprived population was on an ad-hoc basis and mainly influenced by non-governmental projects rather than proper planning.

According to the key informant of both intervention and control districts, awareness among the community was the main reason for the improvement in mother’s and children’s health status. The supply-side financing as part of the safe motherhood program was mentioned as a motivator for utilization of the health services and institutional delivery among pregnant mothers. Increased awareness of service utilization (antenatal checkup, institutional delivery, postnatal checkup, immunization, and growth monitoring) among stakeholders and beneficiaries was observed in similar ways in both intervention and comparison districts. A VDC secretary credited increased access to communication media for such increased awareness. However, an FCHV from comparison area said, “We worked hard in the community to aware golden 1000 days’ mothers for service uptake. They are more aware than before. They are also more proactive in seeking information.”

There were few catchy buy-ins that the local level implemented without a second thought. For instance, incentives for FCHVs upon referring and taking pregnant women to health facilities was adopted by many local levels. In this scheme, FCHV was given NRs 200 – 500 per case. This encouragement has helped in ensuring access to otherwise unreached women. Such additional incentives for FCHVs or health workers were rarely found among comparison districts. However, some projects from non-government sectors were providing other types of incentives to them to ensure access to services to all. Similarly, whim of ‘zero home delivery’ and ‘full immunization’ had also caught eye of local leaders, and “they agreed easily for such targets”, said a health worker from intervention districts. He added such catchy targets are easily conceived by leaders compared to targets in numbers and percentages.

Furthermore, DIC had been instrumental in making Comprehensive Emergency Obstetrics and Neonatal Care (CEONC) service available and timely utilization of the services in
coordination with FCHVS and health facility staff, according to district level stakeholders. On the other side, even in comparison districts, such services have been more accessible than before.

However, some mothers felt no change after the DIC program while other perceived the changes were visible in terms of increased institutional deliveries, regular mothers’ group meetings with the involvement of health workers, availability of 24x7 delivery services, and increased awareness of delivery incentives among the public. Similar changes were also felt by mothers from comparison districts. In backlight, there were some places where access was not ensured due to a lack of implementation of the plan. On probing, it was found that geographic challenges and limitation of resources kept their foot back.

The people of the Himalayan region stressed on interrupted services due to difficult geography and natural calamity. Stakeholders further added that flooding made access difficult and highlighted the requirement of bridging some of the hurdles of the adequate infrastructure of development such as access to roadways; water supply; flood mitigation; and appropriate health facility buildings. One of the mothers from comparison district sadly mentioned, “A child from an affluent family even after spending around five hundred thousand Nepali Rupees and they could not save the child, died of a minor disease like diarrhea, it’s so sad!”.

DISCUSSION:

This study understood the perception and experience of local stakeholders regarding health planning and budgeting and explored the role of IC approach in influencing the planning and budgeting process to ensure equitable access to MNCH services in Nepal, using four broader themes of descriptions i.e. health planning, resource allocation, implementation of plan and equity in access to MNCH services. Three dimensions of variations were revealed i.e. key aspects, major focus, and impact of DIC.

Improvement in MNCH health service coverage was found to similar in both groups. However, subjective information suggests DIC has helped in improving coverage and equity in the intervention districts. Data from the Health Management Information System over the years suggest similar trends of improvement in coverage [18, 26]. The main reason behind this could be the contamination of knowledge across nations through media or staff transfers. Also, central government-driven programs and approaches in combination with efforts from
various non-government actors through different projects have well-influenced health coverage in both groups. This could also partially result in low-quality data at a lower level.

The study showed that the government stakeholders found the investment case useful to identify problems/challenges using evidence and found solutions to address the issues related to MNCH. IC has helped to improve positive thinking where the problem-solving approach is adopted by the community. Females, marginalized people, and disabled were also found involved however literature shows it has only been enjoyed by the most socially advantaged group [27]. However, perspectives from community stakeholders showed there is a lack of equitable involvement of representatives from different sectors. During the planning process only, few of them got the opportunity to be involved, whereas others are only informed about the meeting and its outcome. Evidence shows that the engagement of the community brings about equitable and high-quality MNCH services [28].

Most of the stakeholders in the intervention districts knew about the IC approach. According to the stakeholders, the IC approach has played an effective role in the systemic planning and execution of health activities. After IC approach, all the stakeholders participate in the planning process. This is supported by a report of the UNICEF IC impact evaluation report of Nepal and Indonesia in which planning and budgeting started after IC approach [29].

Considering the budgetary aspects, the budget for MNCH related activities has increased according to the stakeholders. Calculating from the previous plan, health budget increased rise and the VDC also started to recognize its importance. This is mainly due to the involvement of related stakeholders in the health-planning workshop making them accountable for health. Investment in fundamental resources such as infrastructure and staff is critical which was revealed by IC analysis in India [14]. The estimation of the budget is a useful aspect of IC which helps to guide the best decisions to be made among various strategies [13]. The comparison districts lacked this kind of proper planning and budgeting.

Coordinated intersectoral coordination is very crucial to achieve any health-related indicators [30, 31]. The stakeholders also mentioned the intersectoral collaboration between health, nutrition, sanitation, agriculture, women, and children welfare sectors. In addition, the health workers also coordinated with development partners like UNICEF, USAID, and other non-governmental partners.
Coming into the supply side, proper financing shows the improvement of the quality of health facilities like; skilled human resources availability, regularity in services, and expansion basket of the services. The same idea is provided by the Tanahashi model which states that the availability of manpower, facilities, and drugs maximizes the capacity of the services [15]. According to the stakeholders from the intervention district, the major improvement in health was in the sector of Maternal and Child Health like antenatal care, institutional delivery, and child immunization which was due to the availability of health workers in the health facilities. Health workers mentioned the fulfillment of vacant posts, regularity, and access to the services in the intervention districts which became key to improvement in MNCH indicators. Other mentioned reasons for the improvement of MNCH related indicators were increased access to communication, a positive attitude of pregnant mothers, and their in-laws towards health services. Studies have shown that with adequate availability of skilled providers, the antenatal care coverage was greater than 60% [32]. The same result has been seen in the Philippines, which concluded that the access is one key factor to improve service utilization. The research in Indonesia also found out that cities with access were receiving quality care [14]. Other literature has also identified access as evidence to increase service utilization. The higher utilization was seen in those who lived near health facilities in comparison to those living far away [33, 34].

There were some problems identified by the stakeholders which affected the health services. The problems of chhaupadi, (superstitious beliefs about health) were the key. The issue of being discriminated against by the health workers was also a problem illustrated in the FGD. Achieving equity in the health of marginalized will only increase by making the services accessible to them especially those facing the multiple disadvantaged [35]. Service seeking behavior has a direct link to the acceptability of a population; thus, alternative care influences the service utilization pattern like; family planning, ANC, institutional deliveries, PNC, vaccine services. An increase in awareness among community people had a direct impact on positive outcomes in behaviors like; exclusive breastfeeding and umbilical cord care etc. [32, 36].

Stakeholders stated that geographical location is critical on up-taking utilization of health services and varied on different seasons; mainly in Himalayan and Terai districts. Low physical access to health services due to Geographical difficulty has been a major challenge for maternal health utilization [37, 38]. Likewise, it has been observed in the use of family...
planning methods, a permanent method was most likely used in Terai (23%) compared to the hill districts (12%). Besides, there were other challenges including the frequent transfer of the staff, the inadequacy of staff quarters, medicines, and supplies which affected the utilization and quality of services. The presence of cultural taboos and superstitious beliefs about health also influenced the utilization of services. The other prominent issues were language barrier and social inclusiveness, which affected the quality of health care adversely [32].

The IC’s main positive aspect felt by stakeholders was inclusiveness, the process included a variety of participants like health managers, health workers, related stakeholders from different sectors, politicians including the local leaders (in the political arena), civil society and media people which made it unique. The stakeholders of Bangladesh also revealed that the IC approach has empowered the stakeholders to make planning and decisions in the health sector and has provided insights to improve MNCH [39].

The rate of current improvement is not enough in achieving Sustainable Development Goals (SDGs) because targets ahead are not lower hanging fruits. Those who are out of coverage are often from hard to reach population. For instance, Nepal has achieved 55.6% reduction in maternal mortality ratio (539 to 239 maternal deaths per 100,000 live births) between 1996 to 2015 [10, 40]. However, the current rate of reduction is far behind required nearly 91% decrease of recent data to achieve SDG target of 20 maternal mortality per 100,000 live births by 2030 [41].

Few things need to consider maximizing the effect of the IC process. IC should include the monitoring and feedback system in the plan. It was realized that the expansion of birthing centers, ensuring regular supplies, the fulfillment of sanctioned posts would further enhance MNCH outcomes [14]. The monitoring and feedback system was introduced and was also stressed by the stakeholders in the IC districts where a decline in the maternal, neonate, and child mortality was also observed. It was felt that strong advocacy for a commitment from the government and community people should be assured. The ownership of the plans by community people and stakeholders was felt imperative for the successful implementation of these plans [14, 36].

CONCLUSIONS:

The findings of this research provide insights into and information about the practices associated with health planning and the influence of DIC in ensuring equity in maternal and
child health services. There was a unanimous voice among stakeholders that health status has improved including nutrition status in IC approach implemented districts. The stakeholders unanimously felt the improvement of access to services with the increase in the number of birthing centers in IC approach districts and improvement of the budget for health-related activities encouraging. The increased access to communication, positive attitude of a pregnant mother towards health service utilization and support of the mother-in-law are contributing factors to improve the health of mother, neonate, and child. The district stakeholders felt a decline in maternal mortality, neonate, and child mortality that shows positive deviance of health sector improvement in maternal, neonatal, and child health in IC districts compared to control districts. It was seen that districts without IC showed numerous flaws in implementation. Major challenges were lack of ownership, top-down planning, dilapidated infrastructure, irregular supply, demotivating staff, resulting in a despaired outcome.

Though the IC approaches have numerous positive outcomes, it is recommended that the process needs to focus on making it more inclusive and strengthen the monitoring component by several stakeholders.

**List of abbreviations**

MBB Marginal Budgeting for Bottlenecks  
MNCH Maternal neonatal and child health  
NHSSP Nepal Health Sector Support Program  
PNC Post-natal care  
SBA Skilled Birth Attendant  
SDG Sustainable Development Goal  
SMART Specific, Measurable, Achievable, Relevant and Time-bound  
SUHAARA Good Nutrition program  
UNICEF United Nations Children's Fund  
USAID United States Agency for International Development

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VDC  Village Development Committee
WHO  World Health Organization

**Ethics approval and consent to participate**

Ethical approval was obtained from the Nepal Health Research Council (Ref. No. 1296) and Centre for International Health (CIHLMU) (Ref. no. 2016). Informed consent was obtained from each participant before including them in the study.

**Consent for publication**

Not applicable

**Competing interests**

The authors declare that they have no competing interests.

**Availability of data and materials**

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Data sharing does not apply to this article as no datasets were generated or analyzed during the current study.

**Competing interests**

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**Authors' contributions**

JKT was involved in the entire research process until the finalization of the manuscript. MD, DS, and MKM were involved in conceptualization, guiding of entire research, reviewing, and revising of the manuscript. MT and RKS were involved in data collection, data analysis, and
drafting of the manuscript. DNT was involved in data analysis and review of the manuscript. BS was involved in reviewing and revising of the manuscript.

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