

Learning Question 2: *What conditions or factors successfully facilitate the institutionalization and/or implementation at scale of good practices that improve health system outcomes, and why? What are lessons learned regarding planning for sustainability and achieving results at scale?*

Integrated e-Diagnostic Approach(leDA)

HEALTH SYSTEMS
STRENGTHENING
ACCELERATOR

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Context

Almost all neonatal and under 5 deaths occur in low- and middle-income countries due to the lack of quality and affordable healthcare. The shortage of health care workers and effective training combined with the lack of supervision, monitoring and poor state of health facilities infrastructures are identified as the main causes. India ranks No.2 in total number of deaths for under-five's making it a critical country for lives of children. The under-five mortality rate stands at 34.3 per 1000 live births and has immense variability among states. With neonatal mortality of 23 per 1000 live births, India needs a lot of catching up to do, despite the economic growth being achieved.

Terre des hommes (Tdh) in India has initiated Integrated e-Diagnostic Approach (leDA) with the goal of reducing child mortality by enabling better quality of health services through mobile health tools, quality improvement processes and a data management strategy. leDA helps the primary Health Care Workers (HCW) improve their level of adherence to the Integrated Management of Neonatal and Childhood Illness (IMNCI) clinical guideline. The digital job aid of leDA is an Android-based application that guides HCWs through the IMNCI algorithm from the clinical assessment of the child, to the classification, prescription, referral and counselling. The application is powered by Dimagi's CommCare software platform and is designed for mobile devices (tablets or smartphones).

The leDA application supports healthcare workers (HCWs) in primary health care facilities to diagnose and treat children according to protocols, an embedded learning tool helps assess and train HCWs in care protocols, the associated coaching and supervision strategies enhance the motivation and skills of HCWs and thereby, the quality of care; and the collected data gets centralized in the CommCare platform and made available to decision-makers in the form of customized dashboards for remote monitoring, targeted supervision and tailored trainings. The application automatically creates and maintains a patient file for each child presented at a specific health centre, including the history of all consultations made and treatments prescribed. The HCWs can access existing records through a search for the child's name, date of birth and village of origin.

Activity Description

The first and the foremost requirement was to equip the facilities to be able to adhere to the IMNCI norms. This needed procuring and equipping the selected facilities for the leDA initiative to enable them to adhere to the WHO guidelines.

Implementation of the strategy:

- Mobile devices: The government of India had distributed mobile tablets to ANMs under the "Anmol" initiative, the project leveraged Anmol and is using the same device for the E-IMNCI application under leDA.
- Infrastructure/Equipment: The project procured and equipped the facilities with the required equipment for taking anthropometric measurements of the child. Besides this, the facilities were also supplied with digital thermometers, paediatric pulse-oximeters and MUAC tapes.

Capacity Building:

- Capacity Building (Training & Orientation): The selected ANMs were provided rigorous training on IMNCI along with hands-on training on leDA and the E-IMNCI application for child registration and consultations. The project trained government doctors on IMNCI, and these doctors were mandated by the state government to cascade the IMNCI training to ANMs. The trainings were conducted at government facilities and were attended by the Medical Officer -in-charge, Block Health Managers, and Block Data Managers besides the selected Medical Officers and ANMs.
- Hand holding support: Two block level staff with ICT background were trained on leDA and the E-IMNCI application to enable them to provide handholding support to the ANMs related to use of the E-IMNCI application. Additionally, Tdh through its partner Doctor's for You appointed technical and field coordinators who had the responsibility of visiting the ANMs, where they provided coaching support as required.
- Meetings are organized at the Block level in the chairmanship of the Medical Officer In-Charge on a monthly basis. During these meetings ANMs are oriented on skills necessary to be able to carry out the consultations. Within these meetings, good performing ANMs are acknowledged with a token gesture of appreciation to keep them motivated.

Supportive Supervision:

- The project is designed to ensure sustainability within the government system. A supportive supervision component is in-built into the E-IMNCI application where the block health officials visit the ANMs to assess their work and provide any necessary support to improve service delivery.
- The outcomes of the supportive supervision visits help the government in improving the quality of the services provided by the health care workers and in identifying any gaps and capacity building requirement.
- Additionally, supportive supervision visits are also made by the State and District Health officials.

Demand Side Interventions:

- Community Meeting: Meetings are held with community frontline workers where they are orientated on leDA and the E-IMNCI application, to help them to understand the advantages using the application for the consultations. Meetings are also organized by the Technical / Field Coordinators with the community on child health and wellbeing where the focus is also on increasing knowledge and community buy in on leDA and the E-IMNCI application.

Institutional Arrangement:

- The project is currently being implemented in Ranchi district of Jharkhand. The current institutional arrangement is at the District Level where the nodal officer for the project conducts a quarterly review of the project with Medical Officer In-Charge from the implementation districts, along with the project team.
- The disease patterns and consultation outcomes are also shared and discussed in the meeting.

Engagement with State Leadership Health:

- A detailed report on the individual performance of the ANMs, along with other relevant information drawn from the data generated, is shared monthly with the Mission Director, NHM, Jharkhand through the Nodal Officer Child Health's office.
- Regular meetings are organized and held with the officials of the Child Health Division which also details the challenges and ways to overcome them.

Engagement with other Development Agencies:

- The project team at Jharkhand is in regular touch with agencies working for the same target group such as UNICEF, USAID funded project "Samveg", IPE Global Ltd, Doctor's for You etc.

Lesson learned and program modification:

- The monthly data generated from the leDA consultations, also suggest the disease pattern, and has the potential to make it geography specific. Findings so far have shown that almost 48% of the children brought to the facilities did not require any medication while the caregivers needed counselling support.
- The counselling component has been strengthened in the application, which first-time young mothers have reported as being very useful.
- A tasking framework has been added in the application to help ANMs plan their daily schedule as the application now triggers reminders to the users for pending tasks.

Scale-up Plan:

- The project is currently being funded by the Goldsmith Foundation, in addition the NHM, Jharkhand has proposed funding within the state PIP for scaling up the project across all districts in the state in the next two years (2022 to 2023).
- Once the approval from Government of India is received on the PIP proposal, the intervention is ready to be launched across all 24 districts in Jharkhand.

Activity Impact

Development and acceptance of digital job aids in health system

- Participatory approach has been helpful for development of application, User's Acceptance Testing (UAT) was helpful in developing e-learning features as well as assessing the facility preparedness to deliver service and getting an idea about the ability of ANM to work with the application.
- 52 ANMs and 5 MOs were trained in three different administrative blocks of Ranchi District (State of Jharkhand, India). They were trained on case management with application, data submission, reporting on stock and on how to use the e-learning function. Block Programme Manager (BPM) was trained on how to use Performance Management functions.
- The handholding and support to handle the digital technology was provided keeping the needs of ANM (as per age, education etc.) in mind, which resulted in good responsiveness and near universal acceptance during a short period of implementation (as per midline survey).
- The installation of software in ANMOL (ANM Online) Tablet (provided by the state government) has put this asset into use near universally (as per midline survey). This tablet was provided to ANMs to make their work easier for data collection, submission, referring records of cases and providing counselling. But on ground, ANMOL was not in regular use at the start of the leDA project
- The acceptance of ANM was achieved during COVID-19 period, the mechanism of supportive supervision has been helpful in this context. The application has provided the features of performance management, helpful in observing and tracking the clinical practices of ANM, thus handholding and support provided to ANMs were easily customized as per their need.

Strengthening service delivery mechanism

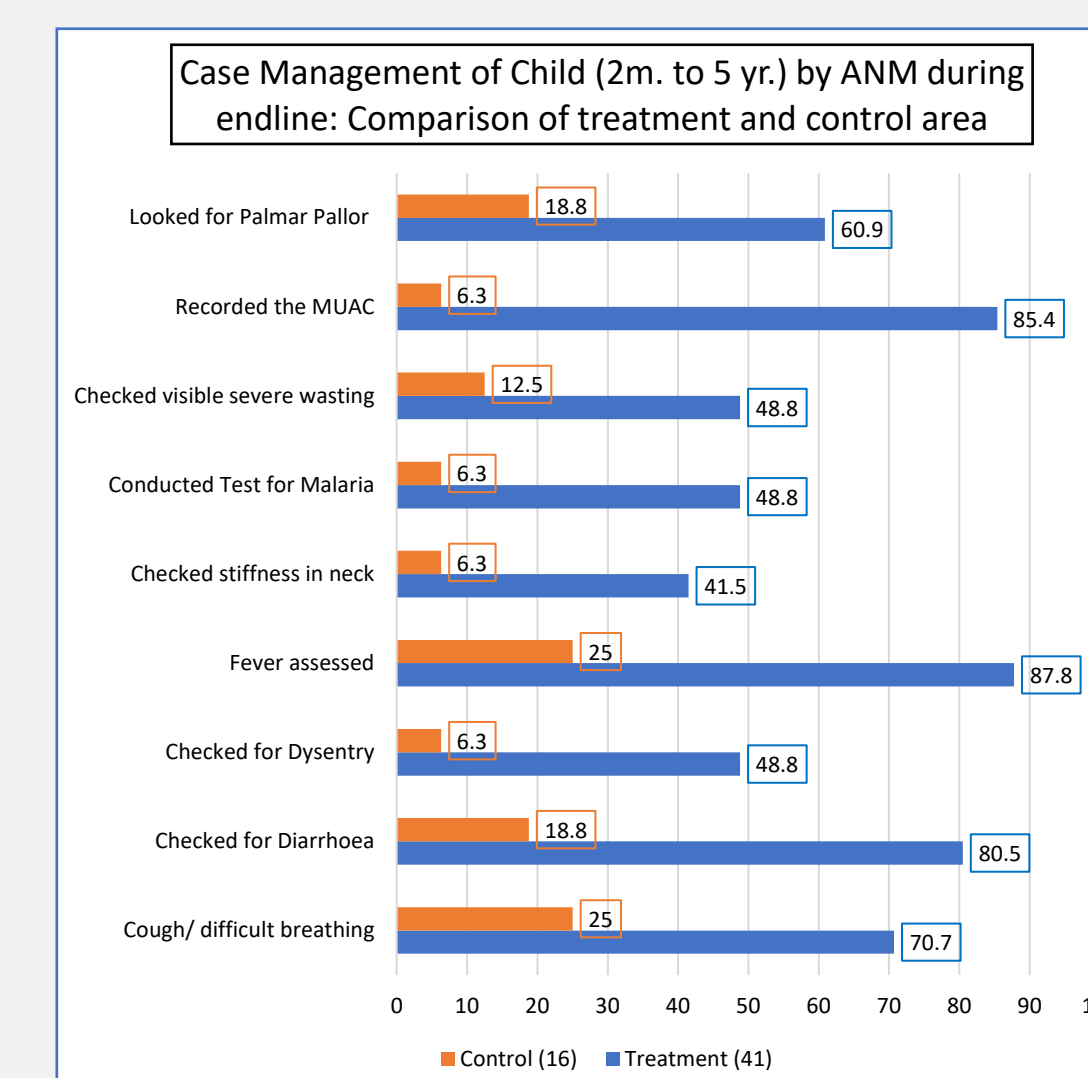
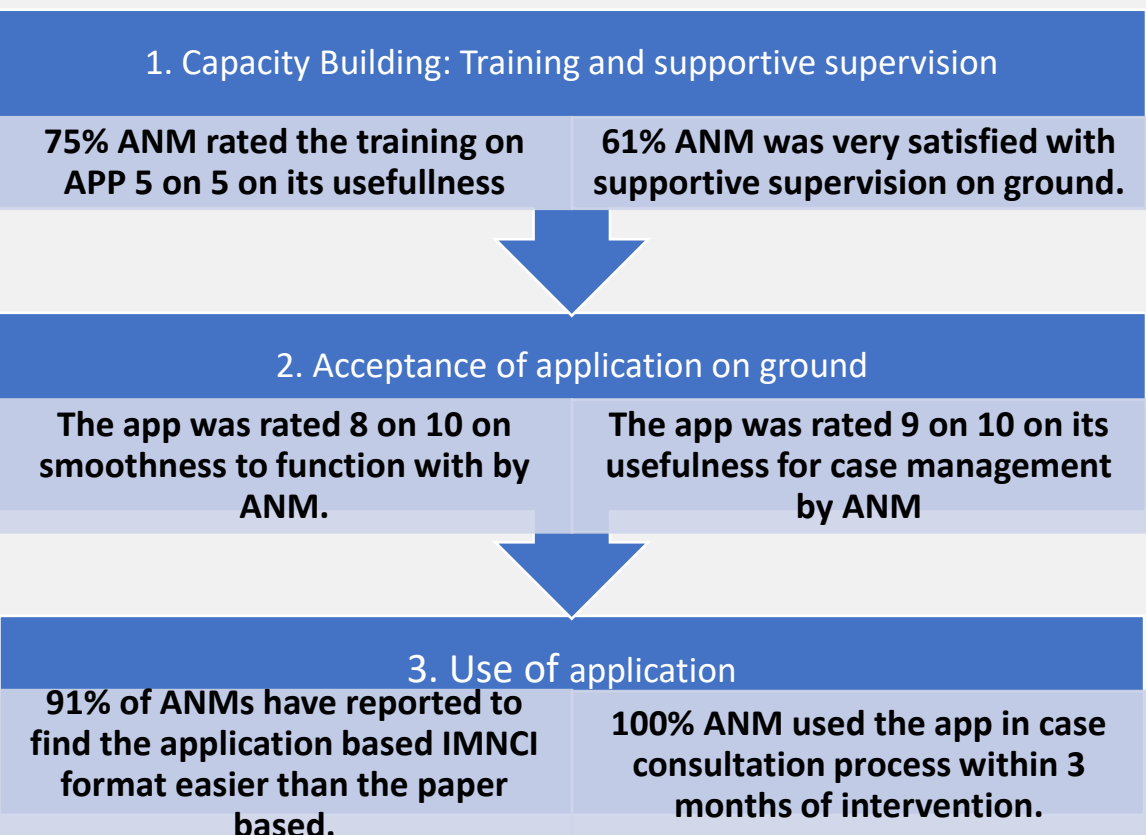
- Quality Improvement (QI) features has helped the facilities to get necessary stocks of medicine and essential equipment timely, substantial improvement was marked during midline and endline evaluations.
- E-learning features has helped sustained capacity building through continuous practices, the midline and endline evaluation shows a sustained increase in their knowledge.
- The real time submission of data (without loss) is helpful for planning from bottom-up approach, after 12 months of intervention (by end of February 2022), the case management data of 10138 cases were submitted, their profile is shown through CommCare dashboard, useful for planning and advocacy purposes.
- The case management of skill of ANM significantly improved, as the process was guided the algorithm of application, step by step suggestion on how to perform it correctly was available through e-learning features, finally the facilities were better equipped with medicine and equipment.
- Sex ratio among total registered cases is 969 (female/1000 male), which is close to the sex-ratio of child population (as per Census of India 2011) of the targeted administrative block 972 (Angara, Namkum and Ratu). It provides that boys and girls both were able to equally access improved services.

Evidence

Methodology of evaluation

- Midline evaluation was conducted after 3 months of intervention, while endline was conducted after one year of intervention.
- Sample size was determined following the "Law of Large Number", sample selection process was randomised.
- Study designs were cross-sectional, control arm was included at the time of endline.
- Observation of clinical case management with and without application in treatment and control area was done during the survey, to understand the improvement on service delivery.

From deployment to adoption and use: Parameters and results from midline evaluation



*Binomial proportion test results shows that the difference between treatment and control area is significant with P<0.05. All the percentages shown in the respect to total N of each arms.

- Breath of 94.1% infant below 59 days was counted appropriately in treatment area (N=17) and just 29.2% in control area (N=24), electronic breath counter helped in making difference (t-test, P<0.000).
- Convulsion of 100% infant below 59 days was checked in treatment area (N=17), the e-learning videos has helped ANM to understand this aspect.
- In treatment area pulse Oximeter was used to check Oxygen saturation level of all eligible children of 2 months to 5 years (N=21), as compared to none during baseline (N=26) (t-test, P<0.000).
- ORS was available at all facilities (N=42), while in baseline it was procured at less than 60% facilities (N=52) (t-test, P<0.000).
- IMNCI chart booklet was not available at one third facilities in control area (N=30), whereas hardcopy of it was not needed at treatment area.

Facilitators

In 1995, with the aim to improve access and quality of care for newborns and children in primary healthcare services, WHO and UNICEF designed Integrated Management of Childhood Illness (IMCI) as a premier strategy to promote health and provide preventive and curative services for children under five years of age. The IMCI strategy aims at improving health worker skills, improving the health system, and improving family and community practices.

In 2005, with the support of UNICEF, the Jharkhand state government initiated the training of healthcare workers providing IMNCI services from Mander block of Ranchi district. IMNCI supportive supervision started from 2006, with field supervisory training that was conducted with participants from the health and ICDS department. IMNCI supervisors from UNICEF carried out supportive supervision activities in Jharkhand until 2017.

Since January 2014, leDA has been implemented in four regions of Burkina Faso to help HCWs improve their level of adherence to IMCI clinical guidelines, and is now scaled in Mali, Niger and India. The leDA project was rolled out in India in mid of 2020 with the goal of improving the quality of IMNCI services for under 5-year-old children in HCfs in Ranchi district of Jharkhand. Ranchi district was selected by IPE Global in consultation with the Ministry of Health and Family Welfare (MoHFW) and State Government. Dimagi Inc. was the software developer; and together under the overall guidance of IPE Global's USAID Vridhhi project, leDA was contextualised with the development of the E-IMNCI digital job aid, which was designed for use by ANMs and Medical Officers to carry out all IMNCI activities taking place at the facility, as per national IMNCI Operational guidelines as well as an accompanying Coach application to be used to monitor performance of users and measure adherence to the IMNCI gold standard.

Challenges

The intervention was launched in Jharkhand during the COVID-19 pandemic. At this time the entire health department were pre-occupied with COVID-19 response measures, including the COVID-19 vaccination roll out.

- During the 1st and 2nd wave of COVID-19, ANMs pre-occupied with special duty that was dedicated to COVID-19 screening, and then from February 2021 ANMs were assigned for COVID-19 Vaccination duty.

- The government recruitment process slowed down due to the pandemic and so the number of positions vacant increased creating additional work pressure on the existing health workers.

- There was no clear policy / guideline on repair and maintenance developed for the Anmol mobile tablets distributed by the government, thus delaying our pilot, as this project then had to undertake repair of the devices of the selected ANMs within the project.

The project envisages that the state will soon have a policy on maintenance and upkeep of the Anmol devices.

Lessons Learned

The learnings from the pilot initiative have so far been beyond the application usage and while it has led to making some enhancement in the application features, the implementation scope has also been expanded to focus on community level interventions and engaging with government level community workers.

Application Enhancement:

- New feature on tasking framework triggers follow-up reminders to the ANMs, which helps them plan their daily schedule.

- Information on Routine Immunization status of the child has been added in the application for the ANMs to guide the caregivers on the vaccination due and in turn helps in strengthening routine immunization coverage.

- Stock indenting will now happen through the application. The earlier system was paper based, and it required the ANM to visit the block health facility twice, once for submitting the indent and next for collecting the medicines.

With the new system, indenting is now online and the ANM can pickup the medicines on the following visit post indenting to the block health facility.

- The average age at marriage in the state is 16, the data indicated that a large percentage of the children brought for consultation did not require any medication, but the caregivers needed counselling.

The counselling component in the application was enhanced to make it more friendly and useful for the caregivers, which includes videos and pictures to help them understand better.

Community Engagement:

The data indicates majority of the children brought to the facility for consultation did not actually require any medication. It was the first time / young mothers who needed counselling on feeding practices and childcare.

Since the government system has the ASHA and Anganwadi Workers as the frontline workers from the community, a component was included in the program to engage and sensitize them on issues affecting the health and wellbeing of infants and under 5 children.

It is expected that this will lead the community health workers to conduct focused counselling of the beneficiary during their home visits.