

## Focusing on Operational Research: A Welcome Step!

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Over the last decade, India has made substantial progress in child health, particularly in terms of improvement of health services during pregnancy and delivery, widespread provision of facility based neonatal care, and better treatment of common childhood diseases – leading to a reduction in infant mortality rate (IMR) by almost 40% and under 5 mortality rate by 45% [1]. However, there is still much work to be done as regional and socioeconomic inequalities still exist, preventable conditions such as neonatal asphyxia, neonatal sepsis, pneumonia and diarrhea are still the most common causes of under 5 deaths [2], and malnutrition is the major risk factor underlying these deaths [3]. Moreover, with better survival, we must now focus on quality and productivity of life.

Medical research and innovations have played an important role in reducing the impact of greatest health problems faced by children. When interventions that are proved to be efficacious in research settings are delivered to the communities, the impact is very often diluted due to unique challenges in the health systems. Understanding the magnitude of these challenges, their possible causes, and providing customized solutions is extremely important, particularly in low- and middle-income country (LMIC) settings with high disease burden, socio-economic and cultural inequalities, and limited resources and time. In such settings, investment in operational research results in huge payoffs, and becomes more important than basic research. However, there is a dearth of operational research in our country, not only in terms of quantity of literature, but also the capacity and intent.

Operational research has its roots in military and economics, where it plays a vital role in increasing managerial productivity and resource management. In health perspective, operational research is defined as “the search for knowledge on interventions, strategies, or tools that can enhance the quality, effectiveness, or coverage of programmes in which the research is being done [4].” The main features which distinguish operational research from other kind of research are: (i) that the research is conducted

in real life settings, and not in controlled research settings; and (ii) there is an intention and plan to use the research findings to solve the programs related to implementation and improving healthcare delivery [5]. Operational research enables decision-makers to improve the performance of health programs through identification of problems that limit program outputs, quality and efficiency, finding their solutions, and trying alternative strategies by optimizing program outputs and processes for improved outcomes [6].

In India, like in most other LMICs, a large majority of the research published in peer review journals is generated by researchers from academic institutions. These publications are predominantly based on topics from basic or clinical sciences, or questions of efficacy of interventions. There is no doubt that such research has important role to play in advancement of science, but for the country’s needs, these need to be supplemented by operational research through partnerships. It is heartening to see five research papers predominantly catering to operational/implementation issues in this issue of *Indian Pediatrics* [7-11]. This series of publications has emanated from research carried out through Norway-India Partnership Initiative in 13 selected districts of four of the Empowered action group (EAG) states that contribute to maximum child mortality (Bihar, Madhya Pradesh, Odisha and Rajasthan). In one of these papers, authors have assessed childhood diarrhea and pneumonia management practices, and highlighted important gaps in terms shortage of staff, problems with availability and utilization of drugs and equipments, and suboptimal treatment practices (e.g. irrational use of antibiotics, excessive use of intravenous fluids, underutilization of ORS) [7]. Authors suggested several possible solutions, including establishment of triage systems, skill enhancement in emergency and facility-based management of childhood illnesses, and standardization of patient record formats. In another interesting paper from this group [8], more than 6000 neonates discharged from Special newborn care units (SNCUs) of these districts were followed-up at community level till six weeks of life. A relatively high rate of mortality

(1.5%) and high re-referral rate (11% at every visit) were noted in the discharged neonates with the risk for mortality being five times higher for low birth weight neonates (2% vs. 0.4%). This calls for establishment of better continuum of care services for neonates discharged from SNCUs, especially for those with low birth weight. Regarding performance parameters during inpatient stay of neonates, it was noted that 36 out of 38 SNCUs were conducting family participatory care (FPC) sessions, and majority were providing support to mothers on FPC, and assistance related to breastfeeding and kangaroo mother care [9]. The barriers to optimal performance were also recorded, but it would have been better if such exercise was done following proper qualitative methods so that results could be utilized directly to improve performance parameters in some of these facilities. In another study [10], authors analyzed weight records of over 350,000 infants born over a 2-year period, through over 2.5 million home visits carried out by health workers during first year of their birth. These are huge datasets, which could be analyzed in more details leading to better understanding of the causes and consequence of undernutrition among children in these districts. In the last of the paper from this group, authors utilized online databases from SNCUs to develop a Quality of care index, and pilot tested the same in SNCUs in Rajasthan and Odisha [11]. In a publication elsewhere, authors subsequently used this score in non-EAG states, and reported it to be usable and doable [12].

These publications have served important role in identifying several problems (and their reasons with possible solutions) related to newborn and child health in selected districts of EAG states with high child mortality. However, as highlighted earlier, the concept of operational research must have an inbuilt mechanism of directly utilizing the knowledge and experience gained from research for improving healthcare delivery. It is important to ensure that these findings do not remain on paper as a routine monitoring and evaluation exercise, but are translated into benefit to the children and their families in these or similar settings. It is understandable that such benefits might not occur in short-term as the processes leading to re-implementation of improved strategies are often complex and iterative [4]. Simultaneously, similar operational research on widespread scale is the need of the hour in order to further improve the child health indicators of the country with best utilization of meager resources, especially in present era when health systems as well as resources are compromised by the ongoing COVID pandemic. There is a strong case to build capacity of researchers in carrying out operational research through partnerships of academic institutions, non-governmental

organizations, policy makers and government agencies so that research outcomes feed the policy and improve outcomes for the children of the country. *Indian Pediatrics* has always taken the lead on issues related to child health, and has rightly nailed the focus on operational research, which is definitely the need of the hour.

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