The primary healthcare in india

Parts of the World, Asia

Primary healthcare is the first point of contact for population into the health system and it lays the foundation for universal health care. It provides evidence based and culturally acceptable health care based on principle of social equity(World Health Organization, 1978). The primary health care is delivered by public healthcare systems that varies by organization and structure through countries, but mostly provided by general physicians and allied healthcare practitioners (e. g. village health nurse or barefoot doctors. Over the past seven decades primary healthcare has been given paramount importance in developing and underdeveloped countries, to achieve ‘ millennium development goals’. Even in developed countries like UK, most of healthcare fund (around 80%) is spend on primary health care. Primary health care produces higher health outcome compared to secondary and tertiary health services, hence comparably significant impact is seen in preventive care, mental health services and reduction in hospitalization.

In India primary public healthcare is provided through primary health centres (PHC), sub centres (SC) and community health centres (CHC)(Ministry of Health & Family Welfare, 2014). Operations, organizations and structure follows the WHO guidelines and recommendations. But its operations have been insufficient to meet the millennial goals of development, although considerable improvements have been made. The indicators of health especially in rural population has reached a plateau, this is due to change in disease epidemiology and fault of ‘ one fit for all’ approach towards healthcare in India.

One of the providers of primary healthcare, PHC covers population of 30, 000 in rural areas(Ministry of Health & Family Welfare, 2014). It’s day to day

operations consists of providing outpatient and inpatient managements for common ailments, non-communicable diseases, and obstetrics and gynaecology services. The national guidelines require attendance of 40 patients in OP clinics per Medical officer per day(Ministry of Health & Family Welfare, 2014), but in reality it is saturated as 100-120 patients visit in 4 hours (personal experience as Junior medical officer of PHC, Somanur, Coimbatore, India). Most of the clinical management has to be done empirically, because the diagnostic services are limited to very few point-of-care investigations(Chauhan et al., 2016), absence of 24/7 laboratory services although emergency services are provided 24/7 and lab is run by one/two technicians. This has led to creation of several issues like unwanted referral to higher centres, which becomes overcrowded, increased rate of hospitalisation; and consequences like antibiotic resistance, misdiagnosis, over diagnosis, inefficient treatment and increased morbidity.

In developing countries that struggle with availability of resources, it is easy to overlook development of laboratory system. This leads to development of vicious cycle of poor laboratory quality causing weak confidence in laboratory system by physicians, hence promoting the culture of management with clinical skills and empirical treatment.

Failure of primary public health system has long lasting and malicious consequences, it promotes the culture of seeking healthcare in private sector. The private sector laboratories in India are highly unregulated and quality offered is variable from small laboratories to state of art corporate laboratory chains, neither of them require official supervision or

accreditation. Health insurance coverage of population is so low, and the healthcare expenditures can take as much as 8-10% of total household expenditure, pushing vulnerable population into poverty.

Diagnostic laboratory methods are important and helps in diagnosis in as many as 70% of cases. Hence one of changes envisioned is capacity building of laboratory services for empowerment of PHC. Point of care testing (POCT) is defined as “ analytical testing conducted by healthcare professional/technician outside the traditional laboratory setting”. It has the potential to bridge the gap seen in primary healthcare of low and middle-income countries, because of its ease of use nature and minimal technical knowledge requirement due to automation. POCTs like other laboratory investigations need proper quality assurance, otherwise erroneous results in reduced confidence in them, making it redundant.

This exercise aims to develop a centralised network of peripheral laboratories under a single central laboratory that provides strategic support and quality control. As any development plan has to be sustainable, development of centralized pathology services in common for many PHCs (5-7 nos) under a single CHC, can provide much required paradigm shift for ailing public health services in India.

The vision of this exercise is to improve the capacity of Indian public healthcare system, to re-establish the fractured relationship between the public and primary healthcare providers and improve the overall welfare of population.

Main objectives envisioned for this centralized system includes:

- Provision of services tailored to community need (based on epidemiological data).
- Availability of 24/7 services.
- Creation of quality management system and its continuation on peripheral laboratories.
- Development of data with population studies for policy making.
- Develop the culture of quality assurance in public and private sector.
- Develop the culture of accountability.

Review of current practices

Before a strategic plan can be developed, an audit of existing resources and capabilities should be done. This may be accomplished by ‘ resource mapping’, that identifies gaps and interactions between the elements and stakeholders, it is usually undertaken by consultants from external organizations. It helps to avoid fund and resource duplication and helps to arrive at achievable and narrow goals required for planning and implementation. The tools used for resource mapping can be based on interviews, literature reviews or questionnaire. This assignment identifies two studies undertaken to identify the structure and capacity of primary health care system. Important findings that these studies identify are poor resource-service coordination, potential duplication of funds, multiple governance system with lack of identifiable priorities between them leading to a culture of apathy and lack of oversight, potential time lag risk in receiving funds and significant deficiencies, for example only 44. 7% of laboratories associated with PHCs had functional equipment. Another tool

helpful for developing strategic plan is SWOT (strength, weakness, opportunities and threats) analysis.

Along with resource mapping another tool employed by NHS was used for assessing the ease of implementation (introducing echocardiography, POCTs, ultrasonography in primary and community healthcare settings). STEP-UP tool helps to analyse the different facets of logistics necessary for implementations of the new system which are skills required for using new device, training needed, premises required, user perspective and primary-secondary interface. This analysis can provide additional information crucial for decision making.

Developing strategic plan- Roadmap

- Identification of resources and location
- Organization’s structure development
- Creating leadership and management hierarchy
- Identification of services required (creating a test menu)
- Purchase of instrumentation and process design (workflow)
- Development of information management network systems
- Creation of budgeting and accounting systems
- Staffing and scheduling

Resource identification

Development of new system incurs great cost and resources; hence potential stakeholders should be identified. In a public health plan, the most important stakeholder is the local government, followed by the local community, international organizations like WHO and not for profit organizations.

Allocation of funds depend on the sustainability of plan, adherence to national and international guidelines and support from community. Development of public private partnerships can add significant resources but needs proper leadership and management to make the collaboration successful.

This plan needs to have an initial pilot trial before implementation and its success depends on the level of stakeholder's involvement. Hence the location for such a study needs strong community participation. The study undertaken by (Ministry of Health & Family Welfare, 2014) identifies the southern state of India, Kerala with high level of community involvement and relocation of funds from local governing councils for welfare policies and activities.

Structure and networking

To achieve the objectives, it is essential that this organization is centralized, hence to monitor the quality of the laboratories attached to PHCs. A network model of organizational structure should be developed with clear identification of its function and services.

This centralized structure in a largely decentralized public health system could encourage rational and shared use of resources. To achieve this aim, establishment of strong network that enables easy exchange of information becomes essential.

Leadership and management hierarchy

Although a centralized system needs a top-down approach in leadership, in this case a democratic approach might serve better. Because the emphasis

should be maintained on public service to choose personnel with appropriate leadership quality. In a public funded project, the leadership is often assumed by top civil servant of relevant field and the field work management is relegated to a competent project manager. Hence, in this situation the manager should emulate the leadership role.

Public leadership qualities have significant difference from corporate or private leadership, with more emphasis on ethics and social equity, rather than personal income. This situation has potential red-tapes which can restrict organizational change, hence transformative leadership quality is much needed. Another form of leadership ideal for this scenario is servant leadership, where the emphasis is made on the followers (for team building) and stakeholders (active community participation) whose improvement and development is the priority. The existing traditional (authoritarian) leadership can bring about only slow and sustained change, in contrast to paradigm change envisioned.

The leader or the health promoting agent should be competent in understanding the dynamics and culture of the existing structure before managing a change, especially in public sector which can be resistant to change due to its political nature. The three-step model of change proposed by Lewin can be adopted that initially unfreezes the current scenario through group focused learning, followed by implementation based on research and finally refreezing the organization in way that is susceptible to further change and innovation. (Pettigrew, Ferlie and McKee, 1992) study of NHS (‘ to make NHS more business-like but not a business’) provides insight into

the internal forces and variables that enable or resist changes in bureaucratic or public organizations.

Selection of correct leadership strategy is a priority since the organizational change proposed is that of overhauling the existing algorithm and culture towards a centralized management. It is important to stress and communicate the cost and benefit to the stakeholders, hence developing and continuing their support.

Creating a test menu

In contrast to point of care diagnostic investigations normally done in the peripheral laboratories, the centralized laboratory should provide the same and diagnostic services of higher specialization. Choice of the tests should take into account the resource constraints. Standard list of investigations available in the PHC is based on recommendations of IPHS (Indian Public Health Standards), based on national policies like RNTCP (Tuberculosis control programme)(Chauhan et al., 2016). The deficiencies are quite apparent like non-availability of Hb1ac estimation, essential for diagnosis and monitoring Type-II diabetes mellitus i. e. non communicable disease management is restricted. Introduction of more specific investigations like CRP, D-dimer, quantitative β-HCG, thyroid function test, liver function test etc. helps to boost laboratory and health services capacity.

Creation of test menu should accompany development of test algorithm, that provides contingency plan when results are inconclusive or when the lab is ill equipped to process certain specimens.

Workflow process design

Purchased or leased equipment should be arranged in a way to create efficient workflow. Here principles of lean thinking should be put in to practice that reduces wastage and budgetary concerns(Laureani, Brady and Antony, 2013; Rand, Womack and Jones, 1997). Lean thinking provides opportunity to remove non-value adding parts of workflow, i. e. the process is cut to bones.

Achievement of objectives would lead to increase of samples for processing, hence existing workflow will not cope with the increased workload. Process mapping of existing POCT workflow in PHC can provide a scheme upon which improvements can be made. Lean thinking was first introduced in automobile industry by Henry Ford, it was also the core idea behind the development of speedee system by McDonald brothers which produced burgers in 30seconds.

Information management system

Establishment of information and communication networks between the peripheral and central laboratory is paramount to achieve the objectives. This system should be used to deliver the results of investigations and also to keep track of utilities, thus functioning as a feedback system. It is also essential for development and maintenance of investigation algorithm.

Budgeting

Development of a budget is to ensure continuous functioning. In this case the budget is developed for public sector laboratory, hence profit (return of investment) is not taken to account, but rather to provide the best with

restricted resources. This scenario is quite similar to research laboratory setup from grants, i. e. operation within the limits of budget is essential for future support and funding, hence the success and implementation of pilot program. Usually in a government / NGO sponsored plan the budgeting is fixed and not amenable to future variations.

Staffing and scheduling

Development of human resources is essential to deliver the product and to establish quality assurance. Training and recruitment can be done with collaboration with the nearest teaching hospitals. Since it is envisioned that the laboratory provides 24/7, proper scheduling by shifts is necessary. Initial evaluation and number of shifts required is essential, which helps eventually in the recruitment of core and auxiliary staffs.

Logistics

As the laboratory is expected to function 24/7, movement of samples across sites incurs good amount of human resources and vehicular charges. This is one of the situation where community participations pay off and personnel can be recruited from the local population. Training is important to emphasis the biohazard nature of transported material and to develop emergency plans in case of vehicular failures.

Quality management system(QMS) and accreditation

QMS is an internal management tool, which encompasses the total workflow in a laboratory starting from the very beginning of clinician’s decision to investigate till the reporting and delivery of results (World Health Organization, 2011; Plebani, Laposata and Lundberg, 2011). It helps to

reduce error in investigation and promotes accountability; in POCT chances for error in analytical phase is very low thus training and quality control becomes critical(Price, 2001). It is established through quality assurance (QA) and quality control (QC). QA is achievable through proper training and development of standard operating procedures and laboratory manuals. QC is acquired through instrument monitoring by means of internal and external QC methods(Newman and Behling-Kelly, 2016).

Accreditation is certification against an internationally recognized standard, most common accreditation used by clinical laboratory is ISO15189; POCTs are certified under ISO22870 standards(Institute of Biomedical Science, 2015). It may be beyond the scope in this context, hence Stepwise Laboratory Improvement Process Towards Accreditation (SLIPTA) that was developed specifically for sub-Saharan African countries may be an approachable model. Alternatively, accreditation can be achieved from accredited labs in associated teaching hospitals or trusts.

Project management and execution

Roadmap gives an outlook of activities required to achieve the targets of this exercise, but project management (PM) is essential for successful completion of activities. It provides discipline, encourages commitment and improves the chance of success. PM assumes more significance if public-private partnership is involved.

An endeavour with clear start and end, to achieve a final product or service defines a project, and project management is the application of resources

available to achieve the project goals. Project management in public sector is significantly different from private sector, because of:

- involvement of multiple layer of stakeholders
- political interest and media scrutiny
- difficulty in measuring outcome and missions
- red tapes and cumbersome policies
- scepticism towards unproven scheme

An appropriate management methodology should be adopted for planning, initiation, execution, evaluating and finally completing the project. Considering the nature of the project to work within a rigid budgetary plan and funds, ‘ PMBOK (Project Management Body of Knowledge)’ guide can be used; or Indian government standardized project management tool CEPM.