



WHP's Call Centre: A Crucial Operational Nucleus

WORLD HEALTH PARTNERS' PROGRAMMES predominantly focus on underserved areas such as villages and urban slums. Besides weak infrastructure, high levels of poverty and low levels of literacy, these areas also pose serious operational challenges due to non-availability of quality human resources. In response, WHP has used a centrally coordinated mechanism that harnesses the wide availability of digital connectivity to sequentially align processes and resources so efficient programmes can be established at scale even despite constraints. This mechanism-- a call centre—serves as a key enabler to enhance impact of interventions among the neediest communities.

The operational framework requires the frontend in villages to be mainly tasked with simple functions that match with the intuitive competence of local clients and personnel. The complex and sophisticated functions of service delivery are centrally managed and monitored from a call centre normally located in an urban area.

The call centre plays many roles. They range from assisting the frontline workers in real time, coordinating the functions of many links in the process chain to ensure an efficient continuum of care, monitoring the fulfilment of functions at each level, and tracking adherence to the treatment plan. The staff at the call centre undergoes rigorous training which is constantly updated whenever the organisation makes refinements and modifications in its processes and applications.

Ease of Registration is Key: WHP has witnessed a common trait among frontline workers in all its programmes that target vulnerable segments: they are exceedingly good at feeding numeric values into a digital system but are not very proficient with textual inputs. While English, in which our records are maintained, is an unfamiliar language for most of them, using the local languages is not amenable to data entry even despite proficiency. (This ease with numbers explains the reason behind the rapid expansion of mobile telephony even among the least literate communities since the skill to punch in numbers is found



A network of computers which is mapped to retrieve data and to make phone calls through the internet is at the core of a call centre.

to be easy to learn!). While many organisations handle this challenge by constantly training frontend workers in skills to input textual data, WHP works around this by establishing voice link between the frontend workers and call centre personnel. The call centre staff enter the information communicated by the frontend personnel into the system and digitally push it back to them in real time. Since the call centre personnel have access to pre-mapped demographic and locational data in drop-down forms, capture of registration data is quick and easy.

In case of TB, the call centre also has access to government's Nikshay system. Anytime a potential TB patient is identified by a frontline worker, the person is registered by the call centre and a unique id is created as is mandated by the government. The call centre is pre-mapped with demographic and locational data so the registration details are comprehensive. The id, besides fulfilling the legal requirements, also becomes an important tool to retrieve records for coordination of steps in the treatment plan, updation, contact tracing, clustering to identify susceptible populations, closure of cases and reporting.

The screenshot shows a web browser window displaying a registration form. The form includes several dropdown menus for geographical data: State (Bihar), District (Begusarai), Block (Barauni), Village (Village), and Tola (Tola). There is also a search bar for the client's name, with 'Suman Lata' entered. Other fields include Age (36 years), DOB (01-Apr-1984), Gender (Male), and Contact (9717295915). There are also checkboxes for contact history and travel type, and a 'Submit' button at the bottom.

Various geographical and demographic data sets are pre-configured to be available through drop down menus to the call centre personnel. This facilities quick and accurate registration of patients and easy retrieval of records.

The screenshot shows a success message: 'Registration complete with patient ID '100009' and Token No. '17''. Below the message is a list of symptoms with input fields for 'Num' and 'Specifier': 'Fever for 5 Days', 'Joint Pain', 'Lower Abdominal Pain', and 'Upper Abdominal Pain'. There is an 'OK' button and a 'Done' button at the bottom.

Process Control: A patient pathway to obtaining treatment links with many service-providing constituents. It starts, for instance, with a visit to a healthcare provider, moves to a laboratory for investigations, back to the provider for confirmation, to a pharmacy for medicines with the rest of the system requiring aspects such as supply chain oversight, mandatory notification of TB patients, adherence tracking or reporting treatment conclusion. The public sector generally has all the

constituents under one command structure so it is relatively simple to set up. In the private sector it is more complex since the constituents are under different ownerships and are often locationally scattered. In both the sectors, the success of a programme, or its lack, is critically dependent on fulfilment of all functions in a pre-arranged sequence and timeframe. Coordination therefore becomes a crucial factor and the call centre has the primary responsibility to ensure the smooth inter-connected functioning of the entire process chain.

Special applications have been developed which send an instant alert with escalatory features to various levels whenever a function is not completed within a predetermined timeframe or when bottlenecks develop. The call centre on its own or in coordination with colleagues from other departments responds to the issues so remedial steps can be taken efficiently.

Counselling, Adherence Tracking and Field Coordination: Since WHP programmes increasingly focus on morbidities such as TB that have long treatment tenures, ensuring adherence to the treatment plan is critical to ensure cure and to prevent emergence of drug resistance. While WHP's field personnel visit families to monitor treatment continuation and completion, the task becomes particularly laborious and costly if the patient is located in difficult-to-access areas such as villages. Specially trained personnel at the call centre provide the first counselling interaction with the patient once a diagnosis is made and coordinate their subsequent work with the field personnel. The patients are followed up on phone every fortnight and the field personnel are alerted if lack of compliance is detected by the call centre. Such an approach enables optimal utilisation of the limited and expensive field resources.

'Missed Calls' to Ensure Equity: While it is preferable for callers to use their own or family members' phones so future links with them can be easily maintained, WHP follows a system of missed calls which safeguards the interests of persons who do not own phones or do not want to use the phone of a family member for reasons of privacy. A caller can use anyone's phone without incurring an expense and needs to dial a widely advertised, easy-to-remember number (such as 80 10 11 12 13 in Bihar) which registers the callers' number and cuts off the call. The call centre soon returns the call. This arrangement also allows WHP to organise backend resources better since the personnel can attend to a caller once their previous call is completed. In the time ahead, this will also serve as a good basis to make the call centre virtual so the personnel can attend to calls from home and can even be paid per call attended instead of fixed salaries.

App to Use Previous Patients for Champion Role: When the treatment is completed, the call centre ensures a closure call during which the patient's interest in volunteering to become a "champion" to help other TB patients in their area is also obtained. A specially developed phone-based application clusters patients geographically and links them with the champions of their own area to help them through the treatment phase.

Monitoring: The special application auto-generates lists of patients to be called every day which enables the call centre to initiate the calls from their computer screens. Any deviation from the protocol is communicated to the field personnel for more rigorous, in-person follow-up and contact tracing.

CME: with the availability of digital links, the call centre is increasingly tasked with organising web-based classes to provide continued medical education to the network members. Classes are organised in batches and WHP's internal applications are used to ensure many tools such as power points, video and audio solutions and live demonstrations are leveraged to improve the quality of instruction.

Technologies in Use: Besides the specially developed applications that use Open source LAMP stack (Linux, Apache, MySQL and PHP), the call centre deploys an array of computers and support devices.

Depending on the volume of calls handled, the network is linked with either scalable SIP trunking lines that can carry multimedia signals for voice communications, instant messaging, and video conferencing or more restrictive PRI lines that can handle smaller volumes. This system provides a Voice-over-Internet- Protocol (VoIP) call facility which enables multiple lines to operate together and also costs less per call due to volumes.

Call Centre Potential and Cost: The table below gives an illustrative cost of a call centre of 20 members supervised by three managers. It incurs an operating expense of Rs 7.2 million a year (\$100,000) which does not include one-time fixed cost of Rs 2.5 million (\$34,700) or the cost of rent and utilities. Such a centre on an average can handle 32,200 calls a month, at an average of 70 calls per day per counsellor working for 23 days in a month. The diagnosis-notification-treatment-and-adherence process of one TB patient over 6 to 8 months requires 20 calls. This capacity will be able to engage with 19,200 patients and 400 providers in a year averaging 1600 patients a month. This would mean a per patient cost of Rs 505 (\$7).

The centre operates in two shifts but the staff deployment is adjusted according to patterns of call volumes. (Normally the traffic is at its peak from 10 am to 1 pm.)

Call Centre costing for first year			
Subsequent years will bear only operating costs			
	Amount (INR)	Amount (USD)	
Capital expenditure (Capex)			
• Fixed one-time cost	1,700,000	23,611	Hardware, work stations, infrastructure for max work batch of 12 personnel
• Software (one-time cost)	800,000	11,111	To handle patient registration, analytics, adherence alerts and generation of dashboard
Total (capex)	2,500,000	34,722	
Operating expenditure (Opex)*			
• Call centre associates	4,320,000	60,000	20 associates @ Rs. 18,000 (\$250) per month
• Supervisors	1,440,000	20,000	3 supervisors @ Rs. 40,000 (\$555) per month
• Communication	1,440,000	20,000	Telephone, internet, server @ Rs. 120,000 (\$1670) per month
Total (opex for one year)	7,200,000	100,000	
TOTAL (CAPEX+OPEX) FIRST YEAR	9,700,000	1,34,722	
Operating expenses do not include rent and utilities which we estimate to be between 12 and 15% of the recurring costs. Work stations are configured to accommodate staff strength at peak call time			