



Learnings from Value-based care workstream (2020-2021)

Project: Closing gaps in the care cascade



How can human centered care drive better outcomes that matter to patients at a lower cost for health system and patients?

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Terms and explanatory notes

CEC: Client(patient) experience of care. Patient experience of care and care experience have been used interchangeably with this term

CGC: “Closing the gaps in care cascade” project led by WHP and the consortium funded by USAID.

DR TB: Drug-resistant TB

DS TB: Drug sensitive TB

DTO: District tuberculosis office/r

EP TB: Extrapulmonary TB

NPS: Net Promoter Score. A measure of patient experience. NPS is calculated as difference between positive ratings and negative ratings in percentage of all customer surveyed

QOL: Quality of Life is a patient reported outcome measure. It has four domains physical, mental, social and we have added financial dimension that appeared important from patient point of view, in our initial workshops for identifying metrics

SMC: Surat Municipal Corporation – an urban TB district.

VBC: Value-based care, a strategy for human centered care which focuses on shifting how we measure, deliver and pay for health to an orientation around value.

VBC Improvement loops: Health systems improvement process that focuses on iteratively improving the health system delivery through cyclical activity similar to quality improvement cycle (plan-do-study-act cycle). However, the main difference from quality improvement is that the VBC improvement loops focus on delivery innovations/ improvement activities that can potentially have an impact on outcomes that matter to patients (quality of life and care experience as perceived by the patients) and cost of delivering such interventions. The steps involve (1) Collect and review QOL and CEC data; (2) Hypothesize on what is contributing to these gaps and where (3) Test hypothesis with implementation of new services/adapting services. In the next loop we start monitoring improvement in care experience/QOL as a result of the improvement activity.

Summary

From 2015 to 2019, TB spending more than doubled in India, while mortality nearly doubled. So, buying more healthcare hasn't produced better health. It is time to consider a different approach. Value-based care model aligns patients, payers, and providers around a common goal: achieving outcomes that matter to TB patients at the optimal cost. In the last year, we developed and implemented a value-based care approach through the CGC project, combining best practices in measurement and delivery.

Approach

Measurement: We measure the value of TB care by measuring both outcomes and costs.

- 1) **Outcomes that matter to patients:** We focused on **care experience** and **quality of life**. Our thesis is that improving these two will keep patients engaged and lead to better outcomes. First, through focus groups with frontline providers and experts in TB, we identified what matters to patients: e.g., ability to work, symptom control, social support, mental wellness, and being treated with dignity. We developed a QOL and care experience tool and refined it with extensive patient feedback through field-testing. After piloting the tool via home visits and telephonically, we collected QOL and care experience data for >5300 patients.
- 2) **Total cost of care:** We took a comprehensive view of TB costs, including costs incurred by the health system and the patient, at each stage of the care journey. Our thesis is that optimizing the total cost of care rather than specific line items helps us make investments in quality which can reduce complications and ultimately save money. We conducted a cross-sectional study of costs. We used a simplified activity-based costing method for the health system. For patient costs, we captured direct, indirect, and coping costs. In addition, we brought the health systems costs and patient OOP costs together longitudinally for different patient personas creating a unique perspective.

Delivery: Drawing on the outcomes and cost data generated, we conducted improvement loops through a series of meetings with SMC DTO. We reviewed the variability outcome data by TU, age, gender, type, site of TB, private vs. public treatment. Along with the district stakeholders, we generated hypothesis on what drives performance and the variation. We tested these hypotheses against the team's on ground experience. For the improvement activity, we focused on existing intervention from the CGC project, i.e., the impact of the mental health intervention on the mental domain of QOL. We designed improvement loops that can be replicated at state / district / facility levels, supported by a data tool tailored to the Indian public TB context.

Salient findings

Care experience: Data revealed that there is an opportunity to improve care experience during “intensive phase” because the patients' care experience rating dipped to the lowest level at "end of IP", more so in private sector. The private sector care experience has room for improvement. The public sector score for care experience (NPS score) was 95% which was higher than that of the private sector, 91%. It may be important to analyze the qualitative feedback because it often reflected complaints despite a positive quantitative rating. Frontline providers ascribed this difference mainly to free treatment at public facilities. Making free medications available even for private sector patients can be a possible intervention. The overall NPS score across all CGC districts, across sectors, was 93%. For the TUs where we had more than 50 patients interviewed the NPS score ranged from 85% to 98%. The variations across TUs helped us identify TUs that are better and worse performing within a district. The front-line providers and the program managers can use these insights to plan improvement activities.

Quality of life: The public sector providers need to focus more on improving quality of life scores for patients because the private sector was able to offer better QOL scores as compared to public sector – a trend opposite of the care experience one. The front-line providers can focus on two controllable factors: managing the physical health scores through better management of adverse effects and complications, and managing mental health through counselling support and psychiatrist referral. Even though a third of the patients suffered from financial issues, it may not be fully controllable factor for frontline providers or program staff – they can focus on reducing the proportion of spend that is borne by the patient. Following is the proportion of people having some issue on

the domains of the quality of life we measured: physical (27%), anxiety (19%), depression (13%), disclosure hesitation (32%), lack of social support (2%), financial issues (33%).

Cost: The proportion of people borrowing or selling assets to fund their diagnosis and treatment (19% and 8% respectively) is important to manage to reduce impact of cost. Reducing avoidable hospitalization should be a top-priority in managing cost because, when a hospitalization happens, not only does the absolute cost increase significantly, the percentage of cost borne by patient goes up too. Patients with DR-TB, EP-TB and co-morbidities (diabetes) should be monitored more closely as these personas have significantly higher baseline costs as well as hospitalization costs. Data suggests that, for these patients, the increase in hospitalization cost is caused by higher hospitalization rates and days per hospitalization. Following are the average baseline OOP costs for different patient personas in INR thousand: DS-TB (8.9), DR-TB (17.6), diabetes (8.2), EP-TB (19.9), mental health issues (10.5). 47% of health system cost is because of frontline staff salary. To optimize that, following are drivers: number and duration of visits, especially home visits, percentage of non-clinical time.

Improvement loops: From our experience of running the improvement loops the success factors were hypothesis-driven facilitation, willingness to engage in improvement dialogue, openness to operational experiments despite imperfect information and mindset of bottom-up improvement rather than top-down appraisal/comparison. Front line stakeholders richly contributed to these dialogues to validate how our findings, offer their perspectives on what analyses would work better and brainstorm about improvement opportunities. There was lot of interest in looking at the data themselves and analyzing TU level performance. When we evaluated the mental health intervention, there was marked improvement in the mental health QOL scores after intervention vs. the scores at screening (before beginning the intervention). Most patients showed no mental health issues at all after the intervention.

The next steps

The CGC project will continue to gather the QOL, CEC, and cost data. They will continue to use this data for improvement loops in the following years. This year the data was collected in a cross-sectional manner. However, the CGC project will now collect the QOL, CEC, and cost data alongside the intervention cohorts. This integrated data collection will enable higher accuracy and effectiveness and allow the CGC project to evaluate new interventions for “value”. For the broader ecosystem for TB care in India, the potential next steps are: to integrate the measurement and improvement activities into the mainstream program guideline, evaluate new interventions on value, and introduce value-based private purchasing.

Acknowledgements:

USAID:

USAID funded a four-year (2020-2024) project -- Closing the Gaps in TB Care Cascade (CGC). It is implemented in 4 districts: Ranchi & East Singhbhum (Jharkhand) and Surat & Gandhinagar (Gujarat). This report is a learning report based on VBC workstream which was part of the CGC project.

Apart from funding USAID provided strategic guidance and thought partnership through their health systems and a TB expertise.

CTD:

Central TB division has observed this workstream closely from time to time and shown interest in being a scale partner for this effort at a national level. Many senior officials and sub-teams have contributed to thought partnership on this project and the way forward.

Consortium of partners led by WHP:

This project implemented by a World Health Partners (WHP) -led consortium consisting of Indian Institute of Public Health Gandhinagar (IIPHG); Everwell Health Solutions; Harvard Medical School; and Leapfrog to Value. We acknowledge contribution of WHP as the overall implementation of this workstream and all consortium partners for their thought partnership

DTO at SMC:

The District Tuberculosis Office team at the Surat Municipal Corporation participated actively in the improvement loop process, enriched our understanding of the data analysis, helped us arrive at the right type of analysis that would drive the improvement in TB care delivery.

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Challenge:

India shoulders more than a quarter of the global tuberculosis burden. The mortality rates from TB have doubled over 2015 to 2019 while the spending has increased by 130%. (refer to figure 1) Our programs have focused on adherence to treatment and patient tracking, yet only ~40% of TB patients achieve recurrence-free survival status. The pandemic has only exacerbated those figures.

This reality raises important questions:

- How can we improve the *value of TB care*; i.e. or the outcomes we generate per rupee invested?
- Why are patients dropping out of care?

Health system design underlies these challenges—specifically how we measure performance and deliver care.

- 1) **Measurement:** currently, measurement systems track drug adherence, and overlook quality of life (e.g. ability to return to work, difficult with drug side effects) and dignity of care. This compromises patient engagement with care which in turn leads to poor care-seeking and adherence to care. (refer to figure 2)
- 2) **Delivery:** Similarly, our delivery systems focus on drug adherence and largely omit social, behavioral, and environmental determinants of health. Non-biomedical determinants of health account for 2/3rd of health outcomes; yet current programs don't give them proportional prioritization. While one area "nutrition" is addressed through Direct Benefit Transfers (DBT), there is an opportunity to address other determinants such as housing and social vulnerabilities.
- 3) **Pay:** Payment and financing systems lack the accountability and flexibility for providers to deliver high-value care. TB care in India is primarily financed through government budgets and international donors. In both scenarios, the budgeting is driven by top-down line-item budgets with little room for flexibility on how the budgets are spent. The compensation for healthcare providers involved in TB care is in the form of fixed salaries. The only variable compensation component is the incentive for case-reporting. There are no incentives for quality of services, care experience created, or patient-level outcomes achieved.

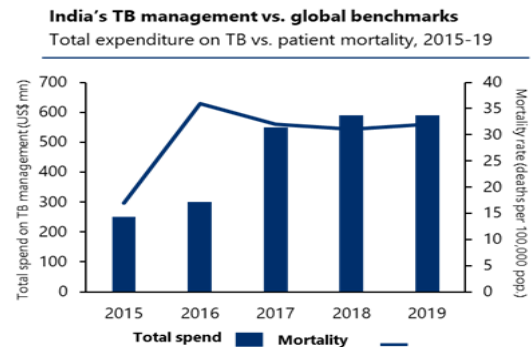


Figure 1: TB spend and mortality in India

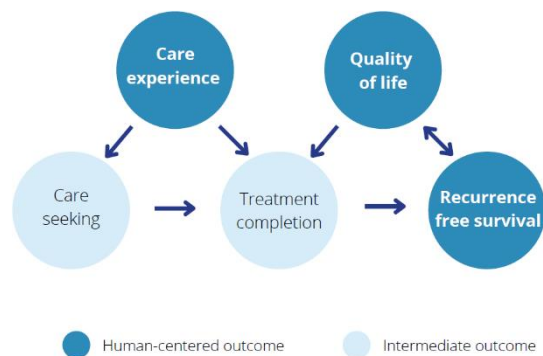


Figure 2: Human-centered outcomes

Vision

Closing the Gaps in TB Care Cascade (CGC) is a four-year (2020-2024) project funded by USAID and implemented by a World Health Partners (WHP) -led consortium consisting of Indian Institute of Public Health Gandhinagar (IIPHG); Everwell Health Solutions; Harvard Medical School; and Leapfrog to Value. It is implemented in 4 districts: Ranchi & East Singhbhum (Jharkhand) and Surat & Gandhinagar (Gujarat).

For this work, we have adopted a value-based care approach to address the underlying health system issues. Adapting the Leapfrog to Value framework, USAID's implementing partner World Health Partners is integrating best practices in measuring, delivering, and paying for value.

Measure: We look beyond clinical outcomes and consider other outcomes from the patient's point of view. We are creating a measurement framework that assesses

- Quality of life, e.g. ability to work; depression and anxiety; catastrophic expenditures; symptoms of TB and drug side effects; stigma and isolation
- Patient experience; e.g. dignity of care, timeliness, convenience
- Clinical outcomes as tracked in current systems

Deliver: We are going beyond the traditional drug adherence model, to deliver patient-centered care through improvement loops that draws on value-based metrics

Pay: Given this is implemented in the public sector, once we establish a data track for one to two years, we can design non-financial reward mechanisms to reinforce the value-based care approach. For example, we will be able to rank and recognize TUs by performance on patient-reported parameters.

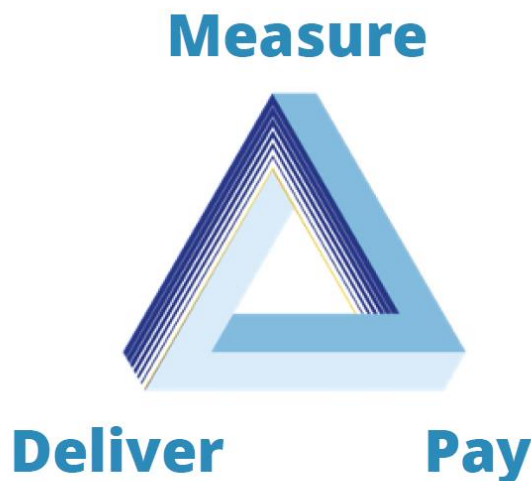


Figure 3: Leapfrog to value's framework for VBC in LMICs

Methodology and process

In April 2020, Leapfrog to Value (with support from Dalberg Advisors, with funding from USAID's Center for Innovation and Impact, and in partnership with USAID's India mission) developed a management approach to TB care in India based on value-based care. USAID's India mission proposed that we integrate those recommendations into the "Closing the Gaps in Care Cascade" work that World Health Partners is leading. That integration focused on value-measurement and delivery of high-value care.

Measurement:

Currently, the measurement systems in TB overlook quality of life (QOL) and client experience of care (CEC). Similarly, while there are small-scale efforts to measure care experience, they not designed for routine measurement. The VBC intervention seeks to change that in the context of CGC project first and then advocate to integrate a sharply defined version of these metrics with the national program. We need to measure 1) outcomes that matter to patients and 2) longitudinal cost of care.

1) Outcomes that matter to patients

- Since clinical outcomes are captured in Nikshay, we focused on **care experience** and **quality of life**. Our thesis is that improving these two will keep patients engaged and lead to better outcomes.
- In Jan 2021, we conducted two workshops with TB stakeholders in India. The first focused on sharing the principles of value-based care and illustrating them with relevant case examples. The second workshop then focused defining what matters to the patients and how to capture it. Through focus groups with frontline providers and experts in TB, we **identified what metrics mattered to patients**: e.g. ability to work, symptom control, social support, mental wellness, and being treated with dignity. Refer to [VBC 101 presentation](#) and [metrics workshop presentation](#) for more details.

- We **developed a tool** to measure these drivers of quality of life and care experience. In terms of the methodology we had a few choices to make. We deliberated on various decisions along with the consortium partners.

Decision	Choices	Chosen method
Tools	Validated vs. custom	Custom
Questionnaire development	Start small and expand, start broad and shrink, develop perfect version	Start small and expand
Answer option types	Likert scales vs. descriptive options	Descriptive options

Figure 4: Decisions and choices for methodology

- The methodology we design had to balance for insightfulness and the feasibility of such data collection process. We designed a nimble method for collecting patient-centered outcomes. Refer to [this presentation](#) (pg. 37) for more details.
- However, there were some decisions we could take only using real life patient feedback. So, to come to data-backed decisions on which method works two versions of the questionnaire were developed. Both of them included same areas of enquiry however the depth, number of questions and nature of answer options varied across these two questionnaires.
- This was followed by a small home-based pilot. We interviewed ~60 patients across the two states/four districts where CGC project is active. The objective of this pilot was to fine-tune the methodology using direct patient feedback on the questionnaire structure, language and discussion facilitation. The data was collected using the [CommCare](#) tool by non-profit organization Dimagi.
- Based on the feedback received, the comparison of qualitative and quantitative feedback we modified the questionnaires to develop a single version that can be used for telephonic interviews. The questionnaire mainly contained 9 questions: 1 question on Care Experience, 6 questions on quality of life and 2 questions on socio-economic status. The single questionnaire combined the best approaches from both the questionnaires. Besides the 9 questions, the questionnaire included qualitative follow up questions to understand the findings in more detail.

- Index questions for QOL and care experience for all patients

Quality of life

- Index question for four domains of QOL (physical, mental, social, financial)
- Followed by open-ended question on "what can be done differently"

Care experience

- Single index question for care experience
- Followed by open-ended question on "what can be done differently"

- Social determinants

Socio-economic status

SHOW CARD/READ OUT

Q1a Please take a look at this list and tell me which of these items do you have at home? (It could be owned by you, your family, or provided by the employer or it could be available in the house you live in; but it should be for the use of just you or your family)

Q1b Does your family own any agricultural land, by agricultural land I mean land that is currently under cultivation or plantation?

SHOW CARD/READ OUT

Q2 Could you tell me something about the person who makes the biggest contribution to the running of the household. To what level has he studied?

RECORD IN GRID. USE GRID TO DETERMINE NEW SEC.

- A total of nine questions, plus follow-ups
- Designed for scale up to all patients

Figure 5: Questionnaire design

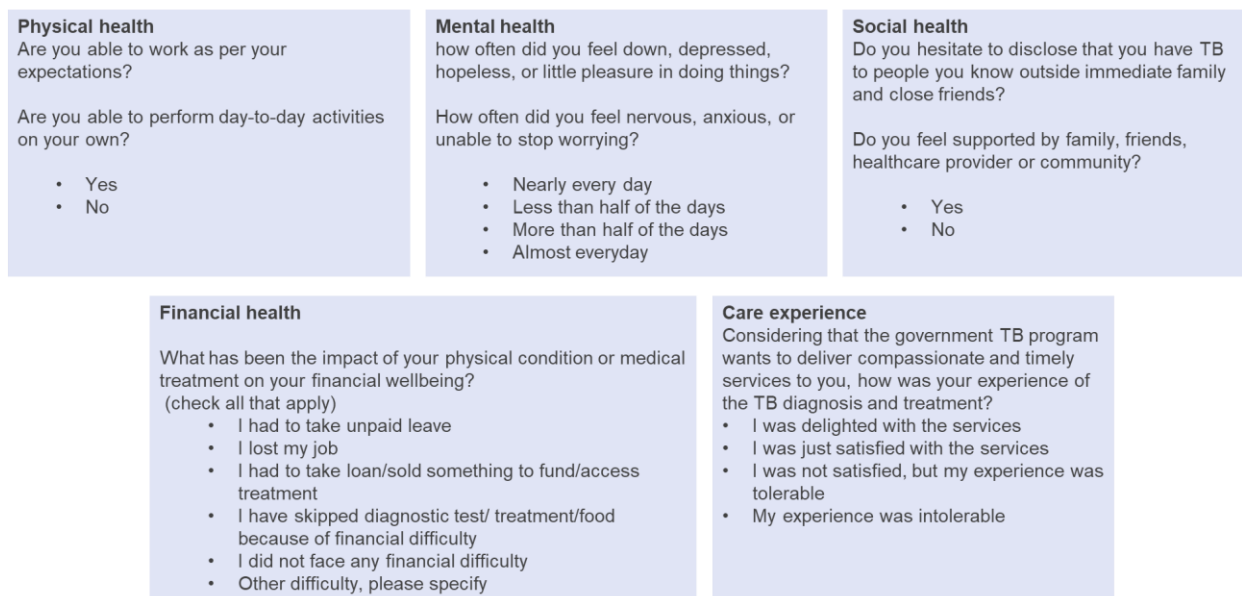


Figure 6: Actual questions on QOL and CEC

Refer to this presentation with [pilot feedback analysis](#) for more details.

Telephonic pilot: The single version of the questionnaire was further piloted with a large number of patients during the month of August. When the team reached out to the patients, they were asked if they would be able to participate an improvement activity survey. With their informed consent and permission for using their time, the telephonic interview was conducted. The questionnaire could be completed in 15-20 min time on telephone. In case the patient did not have enough time at that time of the day, the team sought a different time. The questionnaire completion rate was approximately 45% of people reached out.

- Thus, we refined the data collection method through iterative piloting. The final tools are available here [English](#), [Hindi](#), [Gujarati](#). In the month of August through November, >10000 patients were reached out to and >5300 patients were interviewed. Minor updates to the questionnaire were made based on the feedback on an ongoing basis. The data analysis was conducted at a state level and presented to the USAID team. Refer to this [state level findings presentation](#) for more details. The state level data analysis included understanding trends in QOL and CEC data across states. Similarly, analysis at a district level and other data cuts were looked at for improvement loops.
- **Limitations:** 1) The patients who are dropping out of treatment are likely to be also refusing to answer the questionnaire hence their point of view may not be represented well enough in this analysis, hence the ratings may be skewed towards more positive. 2) We observed that a proportion of people tend to give positive quantitative ratings and have complaints when a qualitative question is asked. This creates a bias towards positive rating and qualitative feedback on care experience becomes very important to analyze. We have minimized this bias training the tele-calling staff to reconfirm quantitative rating when the qualitative comments have a mismatch. 3) QOL usually also includes a spiritual domain, however, we did not include it in our measurement as it appeared way more subjective and difficult to measure with single index question.

2) Longitudinal cost of care:

The objectives of the costing effort were to calculate the end-to-end cost for TB across the care cascade, to identify cost drivers and to bring the patient and providers/health system costing perspectives together. Towards these objectives, we developed a methodology by August 2021 and conducted a cross sectional study of both health system and patient cost of TB care over October to December 2021. For **health system costs** we used a simplified activity-based costing method and for **OOP patient costs** we captured direct, indirect and coping costs.

The health system costs:

- We captured costs on **Health System** side using a simplified TD-ABC methodology for calculating the costs. We interviewed 10 health system stakeholders in one district. The IIPHG team conducted these interviews in the Gandhinagar district leveraging their existing relationships and knowledge. We plan to estimate the time costs using both top down (high level estimate of time) and a bottom up method (more detailed intervention wise calculation).
- **The types of health system costs captured were:**
 - Salaries: doctors, nurses
 - Other direct costs: drugs, test reagents
 - Overheads: facility usage, electricity
 - Irrespective of the source of funding which can be from donations, government, private spending
 - The health system cost did not include investment in infrastructure etc.

Patient OOP costs:

- On the patient side, our method follows the patient journey to understand the costs across the pathway. This includes direct costs (e.g. OOP medicines, travel), indirect costs (e.g. loss of wages) and coping costs (e.g. loans etc.). We planned to interview 108 patients across all the CGC districts. We leveraged existing standard tools and methods (e.g. For patient side costing Stop TB tool: 2008, USAID funded, WHO Patient cost survey handbook 2017 and for Health System side, WHO Value TB 2019, WHO costing tool)
- Since the cost of TB can vary based on the patient profiles significantly, we developed five patient personas for which we did the cost analysis. The personas selected were:
 - Pulmonary DS TB
 - DR TB
 - DS TB with Diabetes
 - Extrapulmonary TB
 - DS TB with Anxiety or depression
- The personas were chosen based on the qualitative assessment on secondary research findings and criteria such as impact on outcome, impact on cost, incidence, amenable to intervention. We interviewed 178 patients across the CGC intervention districts ensuring a good balance for gender and urban/rural.
- The type of patient-costs captured were
 - Direct costs: diagnosis and treatment
 - Other direct costs: travel
 - Indirect costs: loss of wages for patient and caregiver
 - Coping costs: selling assets, loans etc.
 - However, the costs at societal-level because of change in incidence and existing infrastructure investments are not captured.

We arrived at cost drivers based on our analysis of costs. These drivers can be evaluated for cost data collection from the entire patient cohort under treatment and integration with existing data systems. Refer to this [costing method presentation](#) for more details.

Limitations: The costing method employed balanced for feasibility, speed and completeness. So, there were some limitations of the method. 1) Patient personas are limited to most common ones and did not cover all SES, demography, age, gender, geography etc. 2) Patient on previous treatment were not included 3) We were not be able to cover all variations such as Private vs. public hospital, urban vs. rural, non-traditional providers, GP vs. specialist and patient types such as Patient pediatric and geriatric TB, EPTB, and co-morbidities especially HIV. 3) Since the method was recall based, there could be recall biases. 4) Lastly, because this costing study happened during COVID 19 pandemic, it might influence the costs.

Delivery:

We conducted improvement loop discussions with one DTO team i.e. Surat Municipal Corporation DTO. We conducted a series of meetings where we reviewed the variability outcome data in general by TU, age, gender, type, site of TB, private vs. public treatment etc. For an improvement activity we focused on existing intervention

from CGC project i.e. impact of the mental health intervention on mental domain of QOL. We brought the health systems costs and patient OOP costs together longitudinally for different patient personas creating a unique perspective to look at controlling costs.

The improvement loops had the following steps:

- 1) **Analyze generated data** for identifying improvement activities.
 - We analyzed the variation across the QOL and CEC rating along the following variables, from a performance improvement point of view
 - Public vs. private care
 - Geographical variation by state, district, TU
 - Stage of treatment
 - DR TB vs. DS TB
 - Pulmonary/Extrapulmonary
 - Apart from these we also looked at age, gender and socioeconomic class from an *equity* point of view
- 2) **Hypothesis-driven dialogue**: The Surat Municipal Corporation (SMC) district showed active interest in understanding the QOL and CEC data and engaging in improvement activity. The most important part of the improvement loop process was a hypothesis-driven dialogue with the front line at SMC DTO team to provoke thoughts and trigger a culture of improvement. We conducted insightful discussions around what can be improved and how.
 - **First interactive meeting** was conducted with SMC District Tuberculosis Officer (DTO) and their team members. The objective of the meeting was to present the initial findings at the district level with a few cuts across TU level, to take feedback on questionnaires, what would be the most useful data cuts. Refer to [this presentation](#) for more details.



Figure 7: September meeting with SMC DTO for kicking off improvement loops

Attendees:

- Dr. K.N. Sheladiya - District TB Officer SMC
- Dr. Mayur - Medical Officer, DTC
- Hemant Patel - District Program Supervisor
- Roshan Patel - District Program Supervisor
- Dr. Chintan Parikh - Thematic Lead, WHP
- Dhaval Trivedi - Health System Coordinator, WHP
- Dr Balkrishna Korgaonkar – Director, Innovation, L2V

The next steps agreed in this meeting included, updating the analyses in line with recommendations by the SMC DTO team and selecting the improvement area in the next meeting.

- **The second meeting** focused on insights based on the new analyses, which were done based on feedback received in the first meeting especially focusing on performance of the public vs. private treatment facilities. Refer to [this presentation](#) for more details.



Attendees:

- Dr. K.N. Sheladiya - District TB Officer SMC
- Dr. Mayur - Medical Officer, DTC
- Hemant Patel - District Program Supervisor
- Roshan Patel - District Program Supervisor
- Dr. Chintan Parikh - Thematic Lead, WHP
- Dhaval Trivedi - Health System Coordinator, WHP
- Dr Balkrishna Korgaonkar – Director, Innovation, L2V

Figure 8: October meeting with SMC DTO for improvement loops

- 3) Evaluate the improvement activity based on data:
 - In the first meeting itself, we brainstormed on the areas to focus on for improvement loops. The ideas thus generated were evaluated on criteria such as feasibility and impact to decide the focus of the learning loop. Collectively, we decided to focus on understanding the impact of the mental health intervention on patient's quality of life and care experience.
 - Later the QOL and CEC data was collected around mental health intervention (130+ patients overall and 20+ patients for SMC) and analyzed for effectiveness of the intervention i.e. impact of mental health intervention on the mental domain of quality of life. Refer to [this presentation](#) for more details.

Early learnings:

Measurement: Outcomes

The general observations which were *consistent across states etc.:*

Care experience:

- We calculated Net Promoter Score like score based on the ratings on Client Experience of Care question. The Net Promoter Score is calculated by taking difference between percentage of people giving positive ratings and negative ratings. The overall NPS score across all CGC districts was 93%. It was similar for the PMDT group but was marginally worse for Retreatment group. However, our sample size for PMDT and retreatment group was limited.
- The private sector care experience has room for improvement. The public sector score for care experience (NPS score) was at 95%, higher than the private sector, i.e. 91%. The frontline providers thought that this may be due to the fact that TB care including medicines are available free of cost at public facilities. There is need for universal access to free medications especially for private sector patients.
- Data revealed that there is an opportunity to improve care experience during “intensive phase”. The patients' care experience rating dipped at "end of IP" to the lowest level and then recovered to a better level at "end of CP". In the private sector, this dip was even more pronounced.

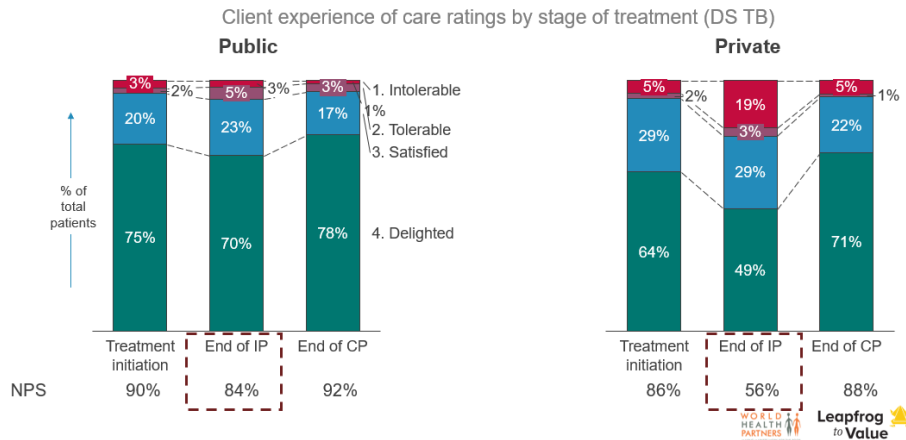


Figure 9: Client experience of care by private public and stages of treatments

- Care experience was marginally worse for males than females. Only about 42% patients who responded were females. Across age groups, it was worst in the two age groups 21-40 and 41-60 as compared to >20 and =<61 age groups. The dip was more pronounced for private sector patients.
- There was not much variation across types of TB i.e. pulmonary vs. extrapulmonary
- While the trends observed were similar across Gujarat and Jharkhand, the ratings in Gujarat were higher on all parameter as compared to Jharkhand. Given that the cultural and socioeconomic backgrounds of two states can be different.

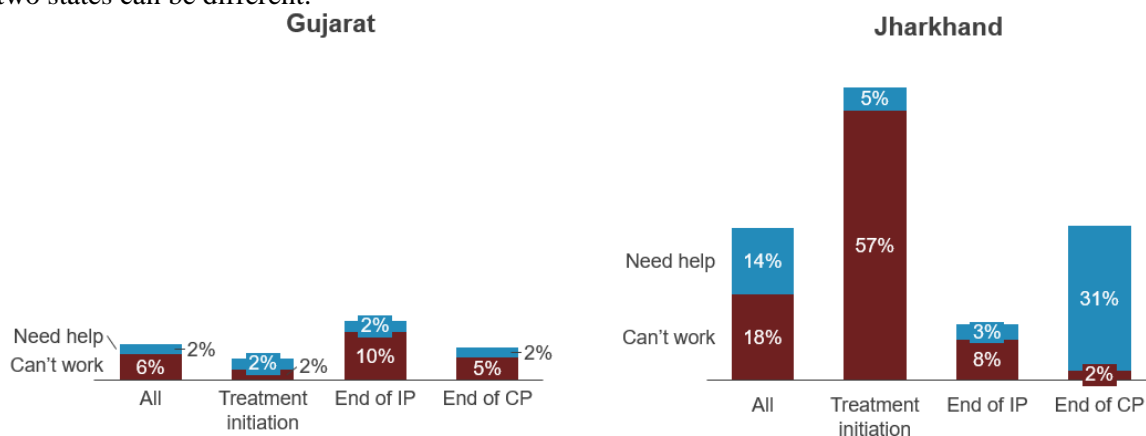


Figure 10: Comparison between Gujarat and Jharkhand, physical health ratings have been used in this comparison.

- The patients tend to give positive rating even when they have complaints in the follow up qualitative findings. On qualitative questions the main reason for poor care experience: side effects/persistent symptoms, delays/long wt. time, lack of information and out-of-pocket spending. The main reasons for good care experience were good doctor and staff attitude, good quality care at a private set-up and staff spending more time with patient. The front-line providers have an opportunity to improve care experience by addressing some of these drivers that are under their control
- Variations across TUs helped us identify TUs that are better performing and worse performing within a district. The DTO can understand the reasons and plan improvement activities around this data.

Quality of life:

- The public sector providers need to focus more on improving quality of life scores for patients because the private sector was able to offer better QOL scores as compared to public sector – a trend opposite of the care experience one.

- Physical QOL: TB physically incapacitates almost a quarter of the patients. 22% could not work but could do daily activities, and an additional 5% could not even do their daily activities. The physical health scores can be improved through better management of adverse effects and complications.
- Mental QOL: Almost 15% of TB patients suffered from some level of depression. 11% felt depressed on several days but less than half of the day, another 2% on more than half of days and another 2% almost every day. 19% of TB patients suffered from some level of anxiety. 13% felt anxious on several days but less than half of the day, another 3% on more than half of days and another 3% almost every day. Mental health scores can be improved through counselling support and psychiatrist referral.
- Social QOL: 32% patients hesitated to share their diagnosis of TB with community members outside immediate family. Only 2% patients did not feel socially supported.
- Financial issues: 15% of patients had to either borrow money or sell an asset to fund the TB-related expenses, while overall a third of the patients had some type of financial difficulty. While this may not be fully controllable factor for frontline providers or program staff, they can focus on reducing the proportion of spend that is borne by the patient.

Cost

Important observations from the cross-sectional cost study are:

- The total cost of care for pulmonary DS TB patient in a baseline scenario is INR 38 thousand, out of which 29 thousand is borne by the health system and 9 thousand is borne by the patient out-of-pocket.
- In case of out of town travel and hospitalization, the total cost goes up to 67 thousand and the percentage of cost borne by patient goes up from 24% to 32%. This means the patient might end up spending 12-29% of their annual family income on TB care. Reducing avoidable hospitalization should be a top-priority in managing costs.
- 19% of people end up borrowing money and 8% selling an asset to fund their TB care. This is the one of the most important metrics to track and manage in order to reduce the catastrophic impact of OOP costs.
- Almost half of the patient costs are indirect costs (i.e. travel and wage loss)
- Following are the average baseline patient cost for different patient personas in INR thousand: DS-TB (22), DR-TB (38), diabetes (24), EP TB (47), mental health issues (26.4).
- Patients having DR-TB and EP-TB and co-morbidities (diabetes) should be monitored more closely as these personas have significantly higher baseline costs as well as hospitalization costs. The CGC workstream on clinical severity monitoring and management, can track these patients more closely. Data suggests that, for these patients, the increase in hospitalization cost is caused by higher hospitalization rates and days per hospitalization.
- Home visits are the highest contributor to health system cost of TB. The “diagnosis and treatment initiation” phase and “intensive phase” despite a small duration contribute to >40% of the total health system cost of TB.
- 47% of health system cost is because of frontline staff salary. To optimize that, following are drivers: number and duration of visits, especially home visits, percentage of non-clinical time. Another 23% is because of program staff and overheads. Within the staff, predictably doctor and nurses contribute the highest cost. Health system actors tend to grossly overestimate (4-5x) the time spent on TB care when they are asked to estimate the overall time spent on TB vs. estimating based on granular calculation.

Improvement loops:

We learnt a lot from the district TB staff who participated in the improvement loops. Refer to these [August](#), [September](#) and [October/November](#) files already referenced above for more details. Here is the summary of most important learnings:

- **Stakeholder participation:** It is critical to ensure that the frontline staff and program staff participate the improvement loop process and contribute to improvement in data collection, understanding data insights in their context, developing hypotheses for improvement and proposing new solutions. The front-line and district stakeholders richly contributed to these dialogues. They discussed on how our findings and their

insights matched and helped validate the findings. We also had the opportunity to find-tune our analyses / data cuts to make them most meaningful for the district TB staff.

- **Empowering local ownership:** Another success factor for improvement activity is to ensure that the improvement is proposed and done locally rather than a top-down activity. To encourage a dialogue rather we set these discussions, as a collaborative process –we included many open questions and actively solicited their opinions. This helped build a sense of ownership. This enables the on-ground program staff could actually conduct any particular analysis they are interested in. Another way the local ownership reflected was their invitation for us to participate in the TU level meetings to share TU level findings. It reflected in the SMC DTO team preferring to analyze the raw data themselves. To enable this, we have set-up excel datasets and analyses to be flexible for updating and any new analyses. For more details see [this excel file](#).
- **Responsiveness:** Being responsive to the needs of district staff enabled us to engage them better. We updated our analyses for the second meeting in line with their expectations. We have also recommended updates to the questions in line with their recommendations.
- **Spirit of improvement:** They also generated improvement ideas in a brainstorming discussion between SMC DTO team, WHP team and the Leapfrog to Value(L2V) team. Through these discussions, mental health was chosen area of focus for improvement loops. When the mental health intervention was evaluated for patients in SMC and other districts, there was marked improvement in the mental health QOL scores when the patients were interviewed vs. the scores at mental health screening. Also, most patients showed no mental health issues at all. It is important to highlight that the data collected was a real-world evidence rather than a designed experiment. As the CGC team continues care cascade monitoring of mental health intervention more conclusive evidence can be gathered.

From our experience of running the improvement loops the success factors were hypothesis-driven facilitation, willingness to engage in improvement dialogue, openness to operational experiments despite imperfect information and mindset of bottom-up improvement rather than top-down appraisal/comparison.

A dissemination meeting was held at the CTD, where we shared the findings of the VBC workstream and the potential next steps to integrate this effort with the NTEP's activities e.g. with the Nikshay Sampark outbound calls. The next steps presented at the CTD included:

Potential next steps for the CGC project:

- 1) **Continue, expand and improve value-based measurement:** In the next year and later the CGC project will build on the existing frameworks and integrate CEC and QOL outcomes as part of routine care cascade monitoring. The project will also conduct these assessments at a household level to address the limitations of call-based measures (i.e. reaching vulnerable groups and ensuring all dimensions of care are incorporated). This will also inform call-based measurement tools. The CGC project is already deploying interventions on mental health, clinical monitoring, digital adherence, adverse drug reaction management, enabling simultaneous observation of impact of these interventions on QOL and CEC in care cascade monitoring. These interventions will also be adapted as part of learning loops based on QoL and CEC outcome measures. Engagement with the additional districts team in year two provides wider learnings on how the non-financial incentives can contribute to improvement in quality of services.

This year the data was collected separately. However, next year onward the data collection will be integrated with the CGC intervention and would be done alongside CGC intervention cohorts hence would be more conclusive/ effective.

- 2) **Continue and scale improvement activities:** Both outcome and cost data would then be used for improvement loops in the next years. As a part of the hand-off the L2V team conducted a training session

with the "Thematic leads" of WHP team so that they can take the improvement the localized loop conversations forward.

- 3) **Introduce payment innovations:** The CGC project can introduce payment innovation i.e. performance linked payments/rewards for the front-line providers. Once the outcomes and cost data has been established and accepted by the stakeholder for a year or so, non-financial incentives linked to outcomes can be introduced. Later, in a phased manner, the CGC project can move towards financial incentives.

Next steps for the CTD

We recommended the following next steps to the CTD for it to integrate the methods discovered in the VBC workstream in their regular workflows.

- 1) **QOL measurement:** Add questions on QOL and cost to the questionnaire.
- 2) **Cost measurement:** The suggestion received in the meeting was to quantify the OOP costs for patients in a simple and effective manner through this questionnaire. We will be exploring ways to do so
- 3) **CEC measurement:** The current questionnaire used 19 questions to get detailed feedback on client experience of care. However, in the VBC workstream we have used a single question which gives us an NPS like rating.
- 4) **Additions:** Apart from existing questions we will be recommending some other questions to ensure priorities of NTEP are well covered. The overall aim is to ensure that the questionnaire can be completed in 5-7 minutes and feedback is captured at the right points in the patient journey. We will also be exploring integration with the government's other patient feedback capture systems such as Kaya Kalp project.
- 5) **Routine measurement** of the QOL, CEC and cost parameter sampled along the three points in patient journey i.e. start of treatment (0-30 days), end of IP (60-90 days), and end of CP (150-180 days) will lead to better understanding of what matters to patients and hence better solutions to address their issues.

Implications for the ecosystem

For the broader ecosystem for TB care in India, the potential next steps are:

- 1) **Integrate the measurement and improvement** activities into the mainstream program guideline so that all districts start collecting meaningful outcome and cost data and optimize their improvement efforts for these two variables.
- 2) **Evaluate interventions on value:** the value-based measurement (outcomes and cost) can enable us to evaluate any interventions especially new ones on the value they create for patients and health system. This can help us making prioritization and budget allocation decisions for new interventions.
- 3) **Introduce value-based private purchasing:** Currently, the only variable payment for the providers is the case notification incentives. Measuring outcome and costs in real-world in line with service delivery, would enable us to design a private sector purchasing program for TB services which can include a performance-based incentive.

In this project we applied the value-based care best practices to TB care in India. Shifting the care paradigm in India to a more value-based and patient-centric approach can change the incentives for 1) providers: to move from prescribing meds to ensuring that patients successfully complete their treatment and 2) for patients to put effort themselves to seek care and continue treatment.

In summary, this workstream has helped us test a health systems model that shifts the paradigm of TB care which in long-term would potentially result in

- 1) Better patient engagement which leads to better outcomes
- 2) Lower costs, because of less reliance on second-line therapy and fewer complications
- 3) More patients seeking care early because the perception of care improves