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Post-Contracting Assessment Report

ROOT CAUSE ANALYSIS • JANUARY 2024 • INDIA

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About HS4TB

The USAID Health Systems for Tuberculosis (HS4TB) project seeks to transform the way country leaders and health system managers understand and work toward TB control and elimination. HS4TB is a five-year USAID contract focusing on health systems priorities that most directly support achievement of TB outcomes, with a focus on health financing and governance in the USAID TB priority countries. The project helps countries increase domestic financing, use key TB resources more efficiently, build in-country technical and managerial competence and leadership, and support policy formation and dissemination. HS4TB is led by Management Sciences for Health (MSH).

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Acronym List

CDMO	Chief District Medical Officer
CTD	Central TB Division
DST	drug susceptibility testing
DTC	District TB Cell
DTO	District TB Office
GFR	General Financial Rules
GoI	Government of India
HLFPPT	Hindustan Latex Family Planning Promotion Trust
HR	human resources
HS4TB	Health Systems for Tuberculosis
INR	Indian Rupee
MOU	memorandum of understanding
MSH	Management Sciences for Health
NHM	National Health Mission
NTEP	National Tuberculosis Elimination Program
PFMS	Public Finance Management System
PIP	Project Implementation Plan
PIU	Partnership and Innovation Unit
PPM	Public Private Mix
PPSA	Patient Provider Support Agency
Q	quarter
RFP	request for proposals
ROP	record of proceedings
SNA	single nodal agency
SOP	standard operating procedure
STC	State TB Cell
TAT	turn-around time
TB	tuberculosis
TBNR	TB Notification Register
TPA	third-party administrator
UDST	universal drug susceptibility testing
USAID	US Agency for International Development

Executive Summary

The Government of India (GoI)'s National Tuberculosis Elimination Program (NTEP) has set an ambitious goal of tuberculosis (TB) elimination by 2025. To achieve this target, it is imperative that the NTEP leverage the inputs of diverse organizations, including via the use of contracting. For example, the GoI has contracted non-government organizations to act as Patient Provider Support Agencies (PPSAs); those PPSAs then engage private health care providers to improve the quality of care of TB patients. GoI contracting now extends to a range of TB services. However, delays in contracting and in making payments for services delivered lead to poor contract performance including disruptions in service delivery. Contract management issues may also lead to reduced interest of the private sector to participate in such contracts. The US Agency for International Development (USAID)-funded Health Systems for Tuberculosis (HS4TB) Project is working in five states to support the NTEP in increasing capacity and efficient use of tools throughout the entire contract management cycle.

One of the key issues affecting smooth execution of contracts is the long delays in payment of invoices to contracting agencies. As outlined in this document, HS4TB conducted an assessment of the invoice submission and payments processes to better understand the reasons behind the invoice and payment delays and to recommend potential solutions to relieve bottlenecks. A four-step approach was used for the assessment: 1) identifying relevant contract information to be used in the analysis, 2) mapping the post-contracting cycle to identify all activities or tasks related to invoicing and payments, 3) collecting data on invoice and payment dates and conducting key informant interviews to identify bottlenecks in the payment cycle, and 4) performing a root cause analysis using responses from key informant interviews and discussions with HS4TB's Project and Innovation Units in five states. Findings showed that the turn-around time (TAT) for payments, based on invoices included in baseline data (July 1, 2021–November 1, 2022), was as high as 296 days with a median of 63 days. Delays in the payment cycle were related to delays in invoice submission, delays in the verification and validation process, and delays in release of payment after administrative approvals. There was large variation across PPSAs in the timeliness of invoice submission and across and within states in the time needed to process claims.

Recommendations to reduce TAT include improving communication across relevant parties in the process, standardizing memoranda of understanding (MOUs) with clear information on invoicing dates and payment timelines, and introducing improved invoicing, verification and validation tools, and trackers. These interventions should be discussed in the public-private knowledge sharing platforms—the partnerships and learning collaboratives—that are currently being established. Other solutions will vary from PPSA to PPSA and state to state and include capacity building of all contracting parties, improving documentation, granting more authority to local representatives, and adhering to agreed-upon invoice verification and validation processes for payment. This baseline assessment report documents the systematic approach undertaken by HS4TB to use existing data to identify bottlenecks and root causes to invoice and payment timeliness. It outlines why some root causes and associated programmatic solutions are specific to different contexts and will inform how intervention packages can be contextualized for each individual state. HS4TB began developing intervention packages for each of its project states in early 2023 and has worked to address many of these root causes in the most recent project year. These interventions are expected to improve delays in invoice submission and payment TAT in the post-contracting phase, ultimately improving the operations of PPSAs and other contracted agencies to deliver quality services for TB.

Introduction

In alignment with the Prime Minister of India's vision, the NTEP has set an ambitious goal of TB elimination by 2025.[1] As part of the larger effort to achieve this target, it is imperative that providers in the private sector be included in the care of TB patients according to national quality norms. The PPSA mechanism is one of the ways the GoI contracts the private sector for TB services. The PPSA offers a package that covers a range of services including provider management, diagnostic linkages, drug linkages, HIV testing, drug susceptibility testing (DST) linkages, facilitating notification, provider incentives, and patient support service and treatment linkages. The NTEP has been engaging the private sector since 2001 through partnerships for delivery of services; however, delays in contracting and payments for services delivered lead to poor contract performance including disruptions in service delivery. Contract management issues may also lead to reduced interest of the private sector to participate in such contracts.

The USAID-supported HS4TB Project, implemented by Management Sciences for Health (MSH), is working in five states to support the NTEP in addressing obstacles to efficient contract management and PPSA onboarding, as well as strengthening local capacity through technical and managerial leadership to finance, manage, and sustain TB programs for improved outcomes. HS4TB India is a strategic initiative toward strengthening systems and processes to achieve NTEP targets. As part of this intervention, Partnership and Innovation Units (PIUs) were established in five states to support state governments in streamlining contract management systems as a step toward reducing payment delays to PPSAs.

Patient Provider Support Agency (PPSA): an interface agency between the NTEP and the private-sector health care system. PPSA acts on behalf of the NTEP to liaise with private-sector clinical/medical establishments to ensure access to high quality TB services to patients seeking care in the private sector with minimum out-of-pocket expense.

PPSA objectives are:

- To efficiently engage with private sector providers
- To ensure high-quality diagnostics, provide treatment and adherence support
- To ensure public health action, to facilitate linkages of services
- To actively follow-up with patients until the completion of their treatment

PPSA service package:

- Diagnostic linkages and specimen transportation
- Patient management (public health action, counselling, adherence support)
- Linkages for Ni-kshay Poshan Yojana
- Contact investigation and chemoprophylaxis
- Linkage support and services (HIV, diabetes mellitus, drug-resistant TB, etc.)
- Demand generation, logistics and supply chain management of public sector

Figure 1. Patient Provider Support Agency

As of November 2022, HS4TB was working in five states: Andhra Pradesh, Delhi, Gujarat, Odisha, and Telangana. Of the five HS4TB states, three have opted for and implemented the PPSA model while one state has partially onboarded a PPSA; only Delhi is awaiting approval for PPSA onboarding. Many other TB partnership options and their contracts are in place in these states, but the financial values of these contracts were not large enough to include them in the current analysis (details below).

The project officially began February 2022, and the PIUs in each state were in place and implemented by November 2022. In November 2022, only three states had existing PPSA contracts: Andhra Pradesh, Odisha, and Gujarat. Therefore, these three states are the focus of this analysis and report. Andhra Pradesh and Odisha had invoice and payment data to review as part of this assessment; however, in Gujarat, there were no submitted invoices or payment data to review. Thus, only delays in invoice timeliness have been assessed.

1 National Strategic Plan to END Tuberculosis in India 2020–25, June 2020 See *https://tbcindia.gov.in/WriteReadData/NSP%20Draft%2020.02.2017%201.pdf (accessed 1 Sept 2023)*

Findings from these three states, as well as strategic solutions emanating from the baseline assessment, can be applied in the other project states with similar payment and invoice processes.

Purpose of the Assessment

One of the key issues affecting smooth execution of contracts is the long delays in payment of invoices to contracting agencies. The TAT[2] for payments, based on invoices included in baseline data (July 1, 2021–November 1, 2022), was up to 296 days with a median of 63. HS4TB conducted an assessment of the invoice submission and payments processes to better understand the reasons behind the invoice and payment delays and to recommend potential solutions. The purpose of this report is to document the contracting process, systematically review bottlenecks and their root causes in the post-contracting phase, and measure the current invoice submission timeliness and payment TAT. This assessment report reviews the processes involved in establishing a contract, the release of funds to PPSAs, and the reasons for delays along with recommendations for improving timeliness of invoices and TAT for payments.

Limitations of the Baseline

The baseline included all states *(n=3)* that met the inclusion criteria outlined in the methodology below. The largest limitation of the baseline is the lack of documented granular information about the intermediate steps between invoice submission and payment. We were able to map the approval process within states and quantify the time from the start to the end of the approval process, but data on the time taken at each approval step was often either not available or not shared. This presented problems with data quality and finalizing the baseline data. Data quality should improve as documentation of the contracting process is standardized and institutionalized. We compensated for the lack of quantitative data in the intermediate process steps by conducting key informant interviews. Also, since we took a structured approach to the root cause analysis, we believe we can extrapolate findings to other states with similar issues and root causes. A subsequent case study will document implementation in all five states and outline which strategies are most effective in each state to further test this assumption. Finally, we did not conduct a detailed review of the PPSAs whose contracts were included in this study for their size, reach, performance characteristics, etc. Further work might include a more in-depth review of what PPSA factors drive better and faster invoicing.

Assessment Methodology

The HS4TB team took a four-step approach to analyzing the invoicing and payment processes and to systematically identify bottlenecks and root causes impacting post-contracting invoice timeliness and payment TAT. The planned methodology was described in Deliverable 2a1 of the HS4TB India project work plan. The methodology is reiterated below along with notes about any deviations from the proposed approach as well as rationale for any deviations. Steps 1 and 2 required a macro view of the entire (pre- and post-) contracting process while Steps 3 and 4 focused specifically on the post-contracting phase. The results of each step are included in the findings section below.

The PIUs in Andhra Pradesh, Odisha, and Gujarat went through the following four steps to complete the assessment.

Step 1: Identify and collect contracts information

Each state went through a process to identify which contracts should be included in the analysis. The inclusion criteria (established in Deliverable 2a1) stipulated that a contract must be an annual minimum of

2 *Difference between invoice submission date and payment receipt date*

Indian Rupee (INR) 50 lakhs.[3] To ensure sufficient baseline data, the contracts also needed to be operational for at least one year (providers engaged by the end of 2021). The teams used HS4TB's contract management tracker to identify the contracts satisfying this criterion.

The PIUs also collected information about the contracts, including the performance-based payment matrix that was used to establish the contract terms. This included the frequency of payment, linked deliverables, quantum of verification, and mode of payments (state level or district level). The teams also noted any contracts that included a provision for an advance payment or for partial payments made immediately after invoice submission but prior to validation.

Step 2: Map the post-contracting cycle

To map the post-contracting process, the teams identified all activities or tasks in the invoicing and payment cycle, starting with the deadline for the submission of the invoice. The teams also identified the individual(s) responsible for each step and where formal government approval was required. Then, the teams identified any dependencies—tasks, milestones, or approvals—that rely on the completion of a prior component before the task can be started. "Standard" TAT for the overall process was estimated by identifying the standard expected time that each individual step in the cycle should take. This step was based on HS4TB's experience and was supplemented with key informant discussions with government officials or procurement experts and a review of the MOUs. Lastly, each team created a flow chart that represents the full invoice and payment process, indicating the individuals or positions responsible for the completion of each step, the standard (expected) TAT for each step (where available), and the dependencies. These flow charts for each state are included in the results section below and have been covered in separate documents.

Step 3: Data collection and identification of bottlenecks

Each state team collected data on actual contracts in their state during the baseline period of 16 months (July 2021–November 1, 2022; all data below describing the situation "at baseline" refer to this period). They collected the invoice and payment dates for all contracts identified in Step 1 for the analysis. To the extent possible, they collected the detailed breakdown of the time taken for each step, based on records kept by the state TB offices and the service providers. This required interviewing the people responsible for the various steps in the invoicing and payment process and reviewing documents. The State TB Officer, Joint Director, State Public Private Mix (PPM) Coordinator, State Accounts Manager, District TB Officer, State Procurement Consultant, and state managers of the PPSA agencies were among the persons interviewed to capture information on the grants and contracts process, including bottleneck identification.

Once the teams collected the actual TAT data for the payment process, they compared these against the standards estimated in the previous step to identify the bottlenecks in the process. Each state team created a matrix outlining each step in the payment process and showing the TAT for the step by state and contract using a simple template with traffic light color-coding system to indicate the steps with the most severe delays versus those that are progressing in a timely manner.

As part of the qualitative inquiry, project staff sought inputs on additional questions:

1. Are there any partial payments made immediately after invoice submission and prior to verification and validation (as per Revised General Financial Rules [GFR] 2017. Rule 172 (2). Clause 12.1 and 12.3, which encourages the use of an ad hoc payment of 75% to be made within 10 days of submission of invoices, with the remaining 25% made within 28 working days of submission of the invoice)? If not, why not?
2. Would it ever be viable to include, within new contracts, penalties that governments must pay if their invoice processing is unduly delayed? If yes, how would that work and what is the precedent? If not, why not?
3. For any areas in the payment cycle that are suffering due to poor communication (either between government units or between government and implementing agencies), what are the reasons and power dynamics responsible for these communication breakdowns, and how could they best be addressed and alleviated?
4. Has a third-party administrator (TPA) for payment processing ever been considered? What are or might be some of the practical issues in implementing such a solution?

3 The unit 1 lakh is 100,000 or 0.1 million.

Step 4: Root cause analysis

Last, as part of the root cause analysis, each state team used multiple methods to identify bottlenecks, root causes, and potential solutions. Interviews with State TB Cell (STC) representatives and District TB Cell (DTC) and PPSAs, as well as several joint discussions with DTC and PPSA representatives, helped to understand reasons for coordination gaps, procedural challenges, and capacity building needs. Following the interviews and discussions, the HS4TB PIU teams used the "five whys" approach to identify root causes for the bottlenecks identified in Step 3 and in the interviews and discussions. A summary of the root causes is presented in the Findings section of this report. Additionally, the identified potential solutions were used to inform HS4TB's programming during the year.

Assessment Findings

Identified contracts included in the assessment

Based on the inclusion criteria explained in the methodology, 134 contracts (10 PPSA and 124 non-PPSA) across the 3 states were reviewed; 9 PPSA contracts were included in the analysis based on the inclusion and exclusion criteria. One from Andhra Pradesh, one from Gujarat, and seven from Odisha were selected. The one in Gujarat was included even though it did not have one year of baseline data because we felt it had valuable insights to invoice submission delays for the first two quarters of its operationalization and met all the other assessment inclusion criteria. All of the non-PPSA contracts and one PPSA contract were not included in the analysis because they did not have an annual contract value greater than INR 50 lakhs. Even lowering the requirement to 15 lakhs would not have allowed us to include these contracts. Therefore, all 9 contracts included in the analysis were PPSA output-based contracts with the National Health Mission (NHM) as the source of funding.

Table 1. Summary of contracts that met inclusion criteria at baseline

Contract ID	State	District	Level	Payment level	Date of contract signing	Date work began	Value (INR '000/ year)	Contract duration (years)	Quarterly invoice submission timeline (days)	Quantum of validation [4] (5% or more)
APPP01	Andhra Pradesh	Alluri Sitharama Raju	State	State level	7/28/2021	8/1/2021	66,600	3	30	10%
GJPP01	Gujarat	Arvalli	State	State level	7/9/2022	7/25/2022	72,585	1	15	10%
ODPP01	Odisha	Ganjam	District	District level	5/31/2021	7/1/2021	3,718	3	30	5%
ODPP02	Odisha	Bhubaneswar MC	District	District level	7/6/2021	7/6/2021	3,146	3	30	5%
ODPP03	Odisha	Khorda	District	District level	7/6/2021	7/6/2021	2,002	3	30	5%
ODPP04	Odisha	Sambalpur	District	District level	6/8/2021	7/1/2021	2,304	3	30	5%
ODPP05	Odisha	Cuttack	District	District level	5/28/2021	7/1/2021	3,146	3	30	5%
ODPP06	Odisha	Sundargarh	District	District level	6/30/2021	7/1/2021	1,313	3	30	5%
ODPP07	Odisha	Mayurbhanj	District	District level	6/21/2021	7/1/2021	2,020	3	30	5%

Invoicing and payment maps by state

The entire contract process is divided into pre-contracting, contracting, and post-contracting. Figure 2 outlines only the post-contracting phase (all three phases are summarized in Deliverable D1a2: best practices in contract management).

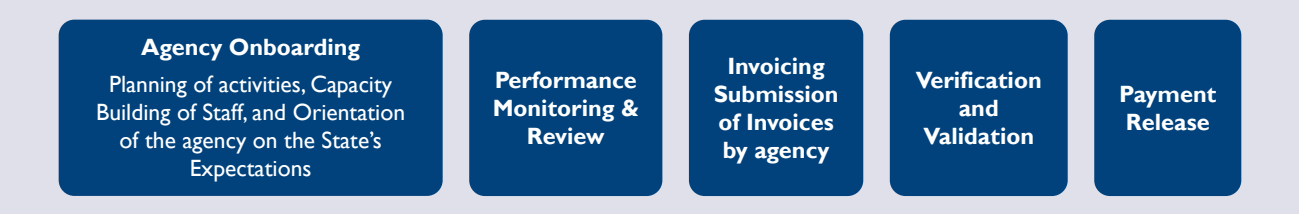


Figure 2. Post-contracting (payment) process flow chart

4 The percent of claims reviewed to confirm invoice accuracy

While the pre-contracting and contracting phases are not relevant to this assessment, budget and funds flow processes that may result in payment delays are important to consider. Every two years, each state submits an estimated budget in the form of a Project Implementation Plan (PIP) to the central government (Central TB Division [CTD] for TB Program). After discussion, the approvals—in the form of record of proceedings (ROP)—are shared with the states. This occurs around March-April of the subsequent year. The ROP covers a two-year period. In the first quarter (Q1) of the financial year—which runs from April 1 to June 30—the states request the central government to release the first tranche of funding based on approved budget in the ROP as well as the previous year's provisional Statement of Expenditure report. At this stage in the baseline assessment process, the funds flow was also mapped, but this assessment found that the funds flow from the national government to the states was not a bottleneck in the post-contracting phase—except during the ROP phase which occurs in Q2 (April-June) every two years. Annex 1 details the full funds flow mapping process undertaken by HS4TB as part of this baseline assessment.

Payments of the invoices submitted should be ideally made within 60 days (30 days for invoicing and 30 days for payment). The payment process does not begin until the invoice is submitted and comprises many tasks and steps but has been consolidated into four main steps occurring quarterly: verification, validation, administrative approvals, and payment release. As part of the baseline assessment, in addition to figure 2, each state created flow diagrams detailing the steps and person(s) responsible that comprise the post-contracting phase (figures 3, 4, and 5).

In all three states included at baseline, PPSAs submit their invoices to districts and/or the state where they have been contracted. After verification and validation of a claimed invoice, it is submitted to the next-level authorities, after which it is put up for payment through the Finance Department, NHM, in the state/district for release of payment. Two states included in the baseline report have state-level payment processes, but both have different steps in the invoice and payment process.

As shown in figure 3, in Andhra Pradesh, PPSAs submit data to the District TB Office (DTO) for verification on a monthly basis. NTEP's DTO then conducts monthly data verification and validation (10% of the patients) processes and finalizes the data monthly. Then, the PPSA state team prepares quarterly invoices for each district. The DTC signs the invoices and attaches the document with the verification and validation that had been done monthly. PPSAs then submit the data to the STC and the STC then cross-checks invoices with the DTO records. The State TB Office then approves invoices, and approved invoices are sent to the Chief Financial Officer for payment.

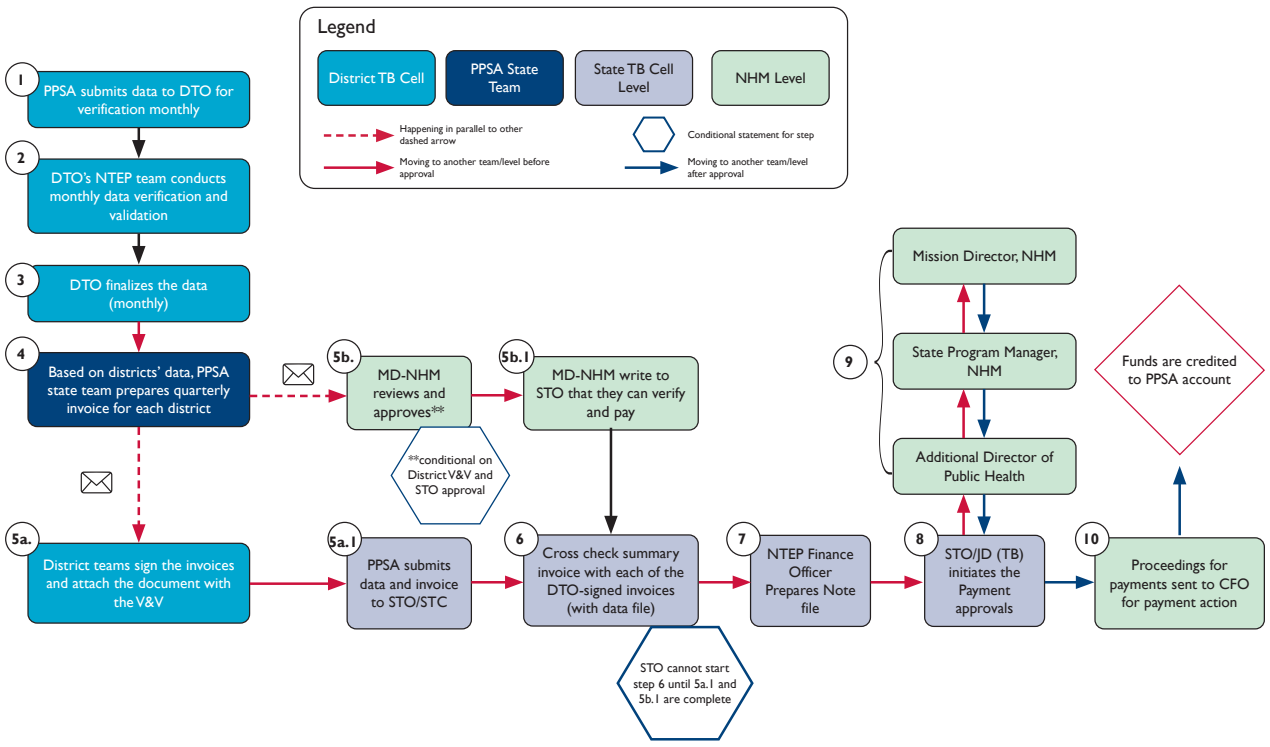


Figure 3. Andhra Pradesh payment flow chart

As shown in figure 4, in Gujarat, the PPSA compiles the invoice submission data on a quarterly basis. Data is then submitted quarterly to the PPSA's Delhi head office and that office then conducts cross-verification and submits the invoices to the STC. The state NTEP team conducts the data verification (in Ni-kshay) and samples a subset of data for validation (10% of the patients) through field visits. This handling of verification and validation at the state level in Gujarat makes the overall pathway less complex than in Andhra Pradesh, where these processes occur at district level due to a shortage of state-level human resources. After verification of invoices by state officials, these invoices are submitted to the finance department for payment. The finance department clears the PPSA payment subject to availability of funds.

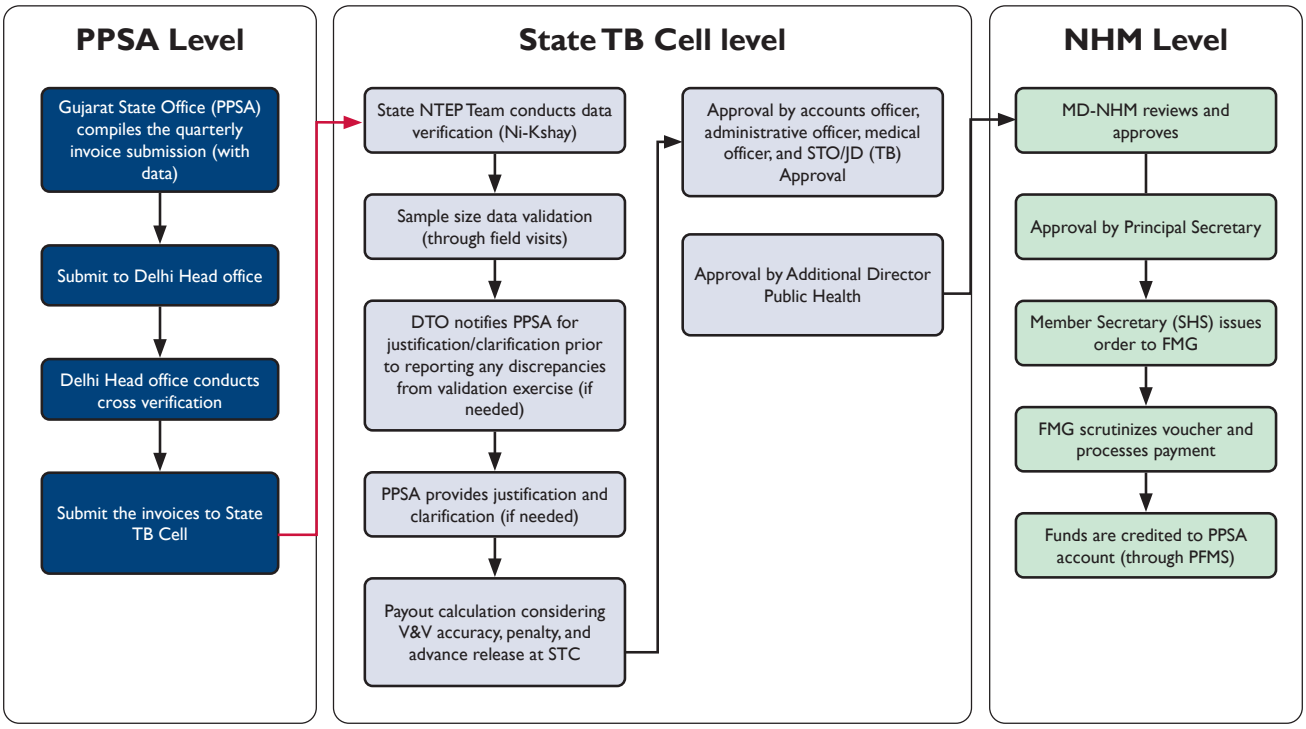


Figure 4. Gujarat payment flow chart

As shown in figure 5, Odisha has a district-level payment model. In Odisha, the PPSA field staff share data monthly to the district PPSA team. The PPSA district team then submits compiled documents to the PPSA state team for verification who in turn verifies and finalizes data after approval from the PPSA national team. PPSA state teams submit quarterly invoices and supporting documents to the Chief District Medical Officer (CDMO). At the district level, the DTO conducts data verification from Ni-kshay data and then a sample receives data validation (5% of the patients) through field visits or phone calls. Invoice and supporting documents are verified and cross-checked by the district project coordinator and PPM coordinator before being forwarded to the district accountant to prepare a note file. Authorization and approval from the CDMO are then received by the NHM accountant for payment processing. Thus, there are none of the multiple state-level approvals required in Gujarat.

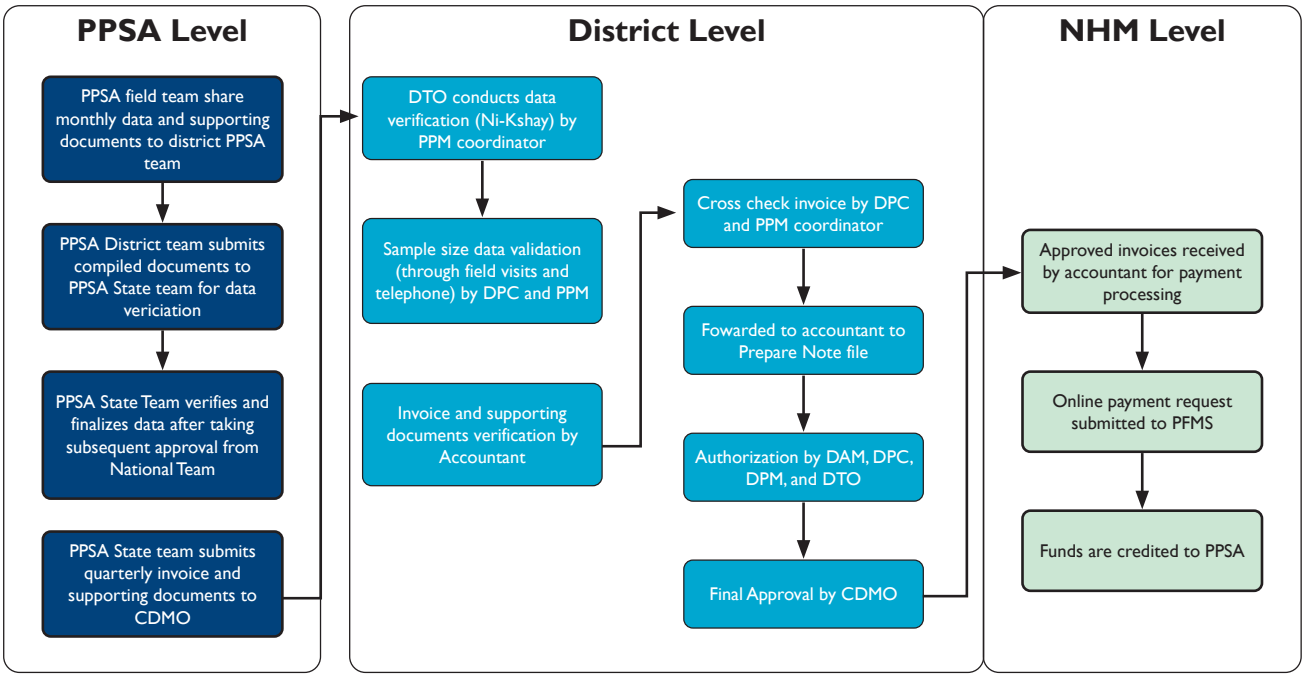


Figure 5. Odisha payment flow chart (district-level payment system at district levels)

Invoice and payment timeliness

This section outlines the analysis of the invoice and payment timeliness in the post-contracting phase. For the nine contracts (one in Andhra Pradesh, one in Gujarat, seven in Odisha) included in this assessment, the state PIU teams collected the invoice and payment dates and, to the extent possible, also collected details of the time taken at each step in the invoice submission and payment process. Key definitions in the post-contracting phase used as part of this analysis are presented in figure 6.

- Due date/On-time invoice submission: Invoices are considered on-time if they are submitted within 30 days of the end of the invoice performance period (except Gujarat which is 15 days)
- Invoice submission delay: Difference between due date for invoice and date submitted
- On-time payments: Invoices paid within 30 days of invoice submission
- Payment TAT: Difference between invoice submission date and payment receipt date[5]

Figure 6. Key post-contracting phase definitions

A. Overview of contracts included in the analysis

Baseline data included any invoice eligible to be submitted up through Q3 2022 (i.e., for the performance period up until the end of September 2022) if they were submitted by October 31, 2022. The data is organized by invoice performance period.[6] Table 2 summarizes the invoices reviewed as part of the baseline with Andhra Pradesh and Odisha providing most of the invoice data. Those eligible for submission which were not submitted by October 31, 2022, were not included in the baseline analysis but are provided as supplementary information in annex 2.

During the baseline period of July 1, 2021–November 1, 2022, there were 42 invoices expected of which 31 were submitted and included in this review. The remaining 11 invoices were pending submission as of November 1, 2022 (annex 2). Of the 31 invoices submitted within the baseline period, only 6 invoices (19.4%) were submitted on time (average of 6.3 days). The average number of days for invoice submission was 19 in Andhra Pradesh and 88 in Odisha. In both states, throughout the baseline period, the range

5 *Data use in this analysis has not been verified by the NHM and is not meant to be considered government official data.*
6 *For example, Q2 2022 is the performance period April–June 30, 2022, whose invoices would be expected to be submitted by July 31, 2022.*

(minimum and maximum) was wide. Andhra Pradesh ranged from 0 days to 69 days (median of 3.5 days) and Odisha ranged from a single day to 320 days (median of 81 days). These submission delays reflect the time to reach the first submission, unless otherwise noted as reflecting resubmissions (e.g., after the government rejected an earlier submission as incomplete).

Table 2. Summary by state of on-time invoice submission at baseline

	Andhra Pradesh	Gujarat	Odisha
# of invoices expected during baseline period	5	2	35
# of invoices submitted	4	0	27
# submitted on time	3 (4) [7]	N/A, no invoices submitted	3
Average, median, minimum, and maximum invoice submission (days)	Average: 19 Median: 3.5 Minimum: 0 Maximum: 69	N/A, no invoices submitted during the baseline period	Average: 88 Median: 81 Minimum: 1 Maximum: 320

Table 3 similarly summarizes the baseline invoice payment TAT. Gujarat did not have any invoices submitted and therefore did not have any relevant data on payment TAT at baseline. Across Andhra Pradesh and Odisha, of the 31 invoices submitted, 21 had been paid at baseline and less than half (9) of the payments were paid on time. In Andhra Pradesh, none of the 3 payments were received on time and Odisha had 9 (50%) of 18 payments that were received on time.

Table 3. Summary by state of invoice payment TAT at baseline

	Andhra Pradesh	Gujarat	Odisha
# of payments expected during the baseline period (i.e., # of invoices submitted before November 1, 2022[8])	4	0	27
# of payments received (for invoices submitted during baseline period)	3	N/A	18
# paid on time	0	N/A	9
# pending payments for baseline invoices as of November 1, 2022	1	N/A	9
Average, median, minimum, and maximum payment (days)[9]	Average: 89 Median: 66 Minimum: 41 Maximum: 184	N/A	Average: 95 Median: 63 Minimum: 2 Maximum: 296

B. State-specific TAT review

In tables 4-6, the first column presents the code for the included invoices while the remaining columns represent the steps in the contracting process as well as the total number of days from the end of the implementation period to the date of the invoice payment. There are variations between states on standards for the number of days for sub-steps between invoice submission and payment and these are noted in column headers. "Traffic light" colors are used to denote if the step was on time or delayed for each of the contracts included in the baseline. A traffic light color key is provided in figure 7.

7 Andhra Pradesh's MOU specified a due date for invoice submission 90 days after the end of the period. According to the MOU, all 4 Andhra Pradesh invoices were submitted on time. However, for the purposes of standardizing the analysis for comparison between states, we have used the 30-day post period standard as the on-time invoice submission criteria. Going forward, when the MOUs are renewed the standard 30-day post period will be encouraged.

8 If an invoice was submitted before October 1, 2022, we could expect the payment to be made before November 1, 2022, since 30-day TAT is considered on-time payment.

9 These calculations exclude pending invoices.

- **Green**: Notes on-time invoice submission or payment (i.e., the step was completed per the standard timeline or faster)
- **Yellow:** Indicates invoice submission or payment step required more than the standard time, up to double the standard time
- **Red:** Indicates invoice submission or payment step that resulted in a delay that more than doubled the standard timeline
- **Gray:** No data is available
- **N/A:** Indicates the step is not relevant in that state

Figure 7. "Traffic light" color key

As shown in table 4, one PPSA is operational in Andhra Pradesh and a total of four invoices were included in the baseline analysis. Data was available for invoice submission dates, district level verification and validation, administrative approvals, payment release, and payment receipt. The MOU established with the PPSA specified that invoices should be submitted within 90 days from the end of the period, which is 3 times longer than the standard of 30 days. The MOU was established prior to HS4TB's establishment of PIU and did not use the standard number of days for invoice submission. Going forward, contract modifications/new contract requests for proposals (RFPs) will be modified to be in line with standard guidelines. For consistency, we used the 30-day standard to analyze the invoice submission data for timeliness.

Overall, none of the 4 invoices submitted during the baseline period received payment within the 30-day payment period. Of the 4 invoices submitted during the period, 3 were submitted well within the 30-day period; however, the invoices were not paid until much later, with one invoice being paid over 6 months later (184 days). This was due to delays in verification (2 out of 3 invoices), delays in administrative approvals (2 out of 3 invoices submitted on time), and delays in the release of funds by the single nodal agency (SNA).[10] Two of the 4 invoices submitted were paid slightly over the 30-day window (48 and 41 days) while the remaining invoices were paid almost 3 months to over 6 months later (83 and 184 days). Some of the contributing factors cited for delays in invoicing and verification were the lack of a standard invoicing format, lack of sufficient human resources (HR) initially, no synchronization between Ni-kshay and invoicing, delays in data from the field for verification, and no specified procedures and formats available for verification and validation reports.

Additionally, the administrative delays in Andhra Pradesh in 2022 were mainly due to the effects of the bifurcation of districts. The division of 13 districts into 26 led to a restructuring of responsibilities, particularly affecting the DTOs. Former nodal officers for non-communicable diseases programs were now tasked with overseeing the TB program. Some DTOs found themselves responsible for multiple districts, hindering their ability to efficiently complete PPSA data and invoice bill verification and validation.

Table 4. Timeline summary for Andhra Pradesh contracts over 4 quarters (n = 1 PPSA contract)

Process	Invoice submission	District level verification & validation	State level verification & validation	Administrative approvals	Payment release	TAT invoice submission to payment receipt	Total days from end of period to payment
MOU	90 days	N/A	N/A	N/A	N/A	30	120
Standard	30 days	15 days	N/A	10 days	5 days	30	60 days
Q3 - 2021	69	19	N/A	25	4	48	117
Q4 - 2021	7	31	N/A	10	0	41	48
Q1 - 2022	0	35	N/A	40	8	83	83
Q2 - 2022	0	6	N/A	38	140	184	184

10 To streamline payment processes and public financial management of centrally sponsored schemes, the GoI introduced SNAs in July 2021. Each state names an SNA to receive and hold all the funds from the centrally sponsored schemes in a single account at a commercial bank and payments to implementers are drawn from this account. State governments have complete control over these accounts, increasing their ability to effectively monitor and allocate funds.

Process	Invoice submission	District level verification & validation	State level verification & validation	Administrative approvals	Payment release	TAT invoice submission to payment receipt	Total days from end of period to payment
Average	19	22.8	N/A	28.3	38	89	108
Median	3.5	25	N/A	31.5	6	65.5	100

As shown in table 5, in Gujarat the PPSA contract was operational as of July 25, 2022, and two invoices were eligible for submission within the baseline period, but neither were submitted. Both invoices were eventually submitted 139 days after the invoice performance period. The reasons for late submission included lack of clarity in the MOU regarding how to submit the invoice; district-wide invoices compiled at the state level by the PPSA and cross-checked; and verification of all the invoices by the PPSA national headquarters.

Table 5. Timeline summary for Gujarat by quarter (n = 1)

Process	Invoice submission	State level verification	District level validation	Administrative approvals	Payment release	Total days
Standard	15 days	7 days	10 days	10 days	7 days	49 days
Contract G01						
Q3 – 2022 - #1	139	N/A	N/A	N/A	N/A	N/A
Q3 – 2022 - #2	139	N/A	N/A	N/A	N/A	N/A
Average	139	N/A	N/A	N/A	N/A	N/A

As shown in table 6, in Odisha, the contracts with the PPSA are at the district level and the submission of invoices is also at the district level. After submission of invoices to the DTC, the invoices are verified and validated, following which the payment is processed by the DTC without state involvement. Hence, the intervening dates for verification which are sent as a confirmation letter by the districts to the state is not done in Odisha and the process of payment is done at the district level. For this reason, in table 6, the column noted as "payment release" actually reflects the combination of several steps (verification and validation, administrative approvals, and payment release) that are depicted for Andhra Pradesh and Gujarat in tables 4 and 5. In Odisha, one district had issues with verification and validation delays, but in other districts the delays were mainly due to administrative approvals and payment release issues.

Most of the invoices from PPSAs in Odisha were submitted very late (19 out of 27 invoices) with a range of 68 to 320 days past the invoice performance period. Of the remaining invoices, 3 were submitted within the 30-day window with an additional 5 invoices submitted in under 60 days. Despite large delays in invoice submission time, 9 of the invoices submitted late were paid on time. In contrast, all the invoices submitted on time (3) were paid very late (beyond 2 times the standard limit of 30 days).

In four out of five contracts (OD-01 to OD-05), there were improvements in invoice submission time between Q3 and Q4 2021, but then a consistent increase in submission delays was observed between Q4 2021 and Q1 2022. Three of the contracts had consistently higher rates of timely payment release when compared to the other contracts (OD-01 75% on time, OD-04 75% on time, OD-05 100% on time).

Since the invoice verification and validation process, as well as payment of the verified invoices, is dependent on DTO staff, it is greatly affected by the DTO's ownership and leadership capabilities.

The variability in invoice submission and payment timeliness in Odisha can be partially attributed to the large number of contracts in place: seven different districts overall and three different PPSA agencies responsible for multiple contracts. The contracts are also decentralized to the districts with invoice submission and payments at the district level; this leads to a large variation in how the invoicing and payments are handled.

Table 6. Timeline summary for all Odisha contracts included in the baseline review (n = 7)

Process	Invoice submission	District level verification/validation	Payment release (TAT)	Total days from end of period to payment
Standard	30 days		30 days	60 days
Q3 - 2021	165	Data not available	16	181
Q4 - 2021	73	Data not available	16	89
Q1 - 2022	96	Data not available	55	151
Q2 - 2022	83	Data not available	2	85
Q3 - 2021	142	Data not available	283	425
Q4 - 2021	50	Data not available	283	333
Q1 - 2022	95	Data not available	296	391
Q2 - 2022	84	Data not available	216	300
Q3 - 2021	141	Data not available	63	204
Q4 - 2021	49	Data not available	63	112
Q1 - 2022	98	Data not available	112	210
Q2 - 2022	67	Data not available	87	154
Q3 - 2021	165	Data not available	16	181
Q4 - 2021	73	Data not available	16	89
Q1 - 2022	96	Data not available	55	151
Q2 - 2022	83	Data not available	2	85
Q3 - 2021	53	Data not available	2	55
Q4 - 2021	81	Data not available	6	87
Q1 - 2022	102	Data not available	19	121
Q3 – 2021 - #1	1	Data not available	111	112
Q3 – 2021 - #2	320	Data not available	133	453
Q4 - 2021	19	Data not available	83	102
Q1 - 2022	11	Data not available	102	113
Q2 - 2022	47	Data not available	133	180
Q4 - 2021	41	Data not available	57	98
Q1 - 2022	73	Data not available	179	252
Q2 - 2022	68	Data not available	161	229
Average	88		95.1	181
Median	81		63	151

As part of the bottleneck review and qualitative inquiry, project staff asked NTEP staff at state and district levels additional questions related to payment delays:

Question #1: Are there any partial payments made immediately after invoice submission and prior to verification and validation (as per Revised GFR 2017. Rule 172 (2). Clause 12.1 and 12.3, which encourages the use of an ad hoc payment of 75% to be made within 10 days of submission of invoices, with the remaining 25% made within 28 working days of submission of the invoice)? If not, why not?

A) Through this process, it was determined that there have been no instances of partial payments made within 10 days of invoice submission. A partial payment was made against the Q3 payment invoice in Andhra Pradesh (row 5 in table 7 below), although not within the 10 days of submission, and this was not intended as part of the GFR process for early payment. Instead, full payment was not made due to a lack of funds at the state level, resulting from an insufficient state allocation and timely fund transfer to the state NHM.

The failure to use the GFR provision for early payment is primarily because there has been minimal precedent for using this practice and the language in GFR 2017 Rule 172 (2) specifies only goods, but does not mention applicability to services.[11] However, the rare example of the partial payment made in Andhra Pradesh leads the project to believe that competent authorities at the state level do have some leeway to make provisions for partial payments against invoice submission in RFPs/contracts. Therefore, the project will focus on working with the state NTEP and NHM teams, advocating for these provisions to be included in RFPs and contracts.

Table 7. Andhra Pradesh analysis of PPSA payment completeness

Invoice performance period end date	Invoice submission date	Invoice amount	Invoice payment received date	Amount released to PPSA	% Amount released against invoice	Payment TAT: Invoice submission to payment receipt (days)	Reason(s) for delay or partial payment (if applicable)
09-30-2021	12-08-2021	2,357,542	01-25-2022	2,357,542	100%	48	N/A
12-31-2021	01-07-2022	7,517,050	02-17-2022	7,517,050	100%	41	N/A
03-31-2022	03-31-2022	8,604,450	06-22-2022	8,604,450	100%	83	Delay in fund release from SNA
06-30-2022	06-30-2022	16,003,050	12-31-2022	16,003,050	100%	184	Delay in fund release from SNA
09-30-2022	11-11-2022	14,243,100	05-23-2023	14,243,100	100%	155	Partial payment made (75.65 lakhs on April 15, 2023); full payment was made on May 23, 2023. The delay was due to processing the Q4 2022 invoice before this invoice.
12-31-2022	01-19-2023	18,520,920	04-13-2023	18,520,920	100%	62	Delayed due to processing Q3 and Q4 (this invoice) at the same time.
03-31-2023	03-31-2023	19,846,530	06-01-2023	19,846,530	100%	44	N/A

Question #2: Would it ever be viable to include, within new contracts, penalties that governments must pay if their invoice processing is unduly delayed? If yes, how would that work and what is the precedent? If not, why not?

A) In the past none of the PPSA contracts have included a provision imposing penalties on the government in case of payment delay to the agency, including in the model PPSA RFP document available on the CTD website. During the baseline assessment, such practices were not observed, and it would be difficult to institute such a penalty clause amid many uncertainties (i.e., fund availability, HR issues, change of leadership, competing priorities) in the system which can delay the payment. If a government were to agree to adopt such a clause in the contract, it may come in the form of compensation to the agency in case of payment delay. The project is pursuing this option, but to adopt it or not is up to the state and central government. There are instances where service delivery contracts in health care have provisions for penalties for both government and service providers, so there is a precedent for this, but it has not been enforced by the PPSA (i.e., the PPSA does not raise it with the government) even if the payments are delayed.

Question #3: For any areas in the payment cycle that are suffering due to poor communication (either between government units or between government and implementing agencies), what are the reasons and power dynamics responsible for these communication breakdowns, and how could they best be addressed and alleviated?

A) The delays in the payment cycle are related to delays in invoice submission, delays in verification and validation process, and release of payment after administrative approvals. Poor communication between the implementing agencies and the government is also one of the contributing factors since

11 GFR 2017 (page no. 50) "Rule 172 (2) Part payment to suppliers: Depending on the terms of delivery incorporated in a contract, part payment to the supplier may be released after it dispatches the goods from its premises in terms of the contract."

the agency staff sometimes do not feel confident approaching the government staff for support for query resolution during the invoice preparation. This is best addressed by regular meetings and interactions during training and cross-learning activities like the partnership collaborative which has been proposed in the project states.

B) For some PPSAs working in more than one district in the state (Odisha), there are usually no district level office or managerial staff who can coordinate with the district NTEP team. This occasionally leads to infrequent interactions and communication gaps. This would be best addressed through increasing the frequency of interactions and communication either by the state level official of the PPSA or empowering the district functionaries to communicate with the district NTEP staff.

Question #4: Has a TPA for payment processing ever been considered? What are or might be some of the practical issues in implementing such a solution?

A) The project discussed with the CTD and states the option to pilot a TPA for invoice verification and validation in calendar year 2023. After discussion with the states, it appears that none of them had considered a TPA for payment processing prior to HS4TB project implementation. The CTD has shown interest in piloting TPA for verification and validation of the invoices and discussions will begin with states for pilot implementation. The scope of the pilot will likely include testing solutions for a few practical challenges which the pilot would address, including a) financial viability for the TPA with the relatively low per-patient invoice value leading to higher transaction costs, b) the relative complexity of the overall validation process, and c) acceptance of the validation and any variation from the validation done by the district staff for the same invoice, which would raise major questions on the overall process. The major issue identified by the states for implementing a TPA for verification and validation is that it will take some time to trust the TPA results. Therefore, the states are likely to continue doing the verification and validation in parallel to the TPA.

Root cause of delayed TAT and potential solutions

The final step of the four-part methodology was the root cause analysis undertaken in all three states utilizing a "five whys" approach with key informant interviews and ultimately the development of a problem matrix. This section has been divided into root causes associated with invoicing and payment delays by state.

After mapping the time in each step, each state conducted key informant interviews to understand more detailed perspectives about the operational bottlenecks and root causes of delays. Key informant interviews were particularly important sources of information to complement the limited availability of quantitative data.

A few overarching contributing themes emerged on delays in invoice submission:

1) **Late invoice submission by PPSA:** After onboarding, the agency often does not submit invoices on time (as per contract).
2) **Improper and incomplete invoicing:** During the initial invoicing cycle, the PPSA is unaware of supporting documents required to be attached to invoices.

Table 8 below provides a summary of the identified bottlenecks, root causes, and suggested solutions for invoice timeliness across the three states.

Table 8. Root cause analysis: Invoice timeliness

Problem	Root cause	State with identified root cause			Potential solution(s)
		Odisha	Gujarat	Andhra Pradesh	
PPSA root causes					
Insufficient PPSA HR & capacity	1. There is a lack of suitable candidates with experience in PPSA implementation including technical staff experienced in invoice preparation and overseeing PPSA activities.[12]	✓			1. Conduct PPSA financial viability assessment and prepare a costing model; financial modeling should include analysis of the number of districts for viability.
	2. Low salary and high uncertainty due to the short duration of the PPSA contracts which contributes to hiring difficulties; short-term positions are less attractive to qualified professionals with experience in invoice preparation and the implementation of PPSA activities.	✓			2. Advocate for longer duration of PPSA contracts to assist in attracting a competent and sufficient workforce 3. Conduct PPSA capacity needs assessment to identify gaps in capacity for invoice preparation 4. Develop and conduct ongoing training and support on invoice preparation for PPSAs
PPSA organizational setup	1. Final approval of invoices required from PPSA's headquarters in bigger organizations leading to delays in invoice submission	✓			1. Advocate with larger PPSAs' leadership to streamline the invoice approval process to address specific process and structural challenges causing delays in invoice submission process (requires a PPSA-specific approach as the challenges are PPSA-specific)
Multi-level approval process within the PPSA for invoice preparation	1. There is no finance person in the PPSA state office leading to preparation delays	✓			1. Add account position in state office
	2. Approval is required from national level PPSA office/headquarters level leading to delays in preparation (specific to Hindustan Latex Family Planning Promotion Trust [HLFPPT] PPSA agency)	✓			2. Develop and conduct ongoing training and support on invoice preparation for PPSAs' state office staff 3. Advocate for PPSA policy-level and/or structural interventions to address inefficiencies in the current process
	3. Bills prepared by PPSA office/ headquarters as per reporting from field; bills are then sent to state/district PPSA teams for submission of payment which leads to delays.	✓			4. Develop information technology-based application to support PPSA operations and final invoice preparation

12 Although not related to invoice timeliness, these HR capacity issues may also cause low pay-outs due to inadequate programmatic performance. However, there is also under-performance due to problems with dependencies on the government (such as a shortage of cartridges/chips leading to low DST coverage).

Problem	Root cause	State with identified root cause			Potential solution(s)
		Odisha	Gujarat	Andhra Pradesh	
Internal verification process within the PPSA organization: centralized review approval processes in large organizations covering various states (for example: HLFPPT)	1. Unavailability of PPSA's supporting documents due to address mismatch, mobile number mismatch, misplace of records, and denial from TB patients leading to non-approval of the invoice within the PPSA organization thus leading to submission delays	✓			1. Develop standard operating procedure (SOP)/quality control checklists to reduce recording errors 2. Advocate for digital record keeping 3. Continue to monitor the feasibility of the verification and validation requirements for accuracy
	2. District-wide invoices prepared, compiled by cluster at state office, and then submitted to head office		✓		
	3. Cross-verification of 100% of claims at Delhi Head Office		✓		
NTEP root causes					
Low quality MOUs	1. Lack of expertise at state level for: (1) Complexity of PPSA contracting (2) Contracting of services (3) Contracting of output-based services	✓	✓	✓	1. Conduct a competency assessment that outlines expertise in these three areas 2. Capacity building of existing NTEP staff on contract management through one-on-one training as well as through formal training conducted based on a competency assessment
	2. There are no state & district-specific modifications made in MOU sample shared by CTD, leading to MOUs that aren't specific enough	✓			1. Inclusion of invoice submission due date in MOU during contract renewal 2. Develop a guideline for successful outcome calculation
	3. Details of invoice submission not included in the MOU (for example: due date of invoice submission not mentioned in MOU, guideline from CTD for successful outcome calculation)	✓		✓	
Cross-cutting					
Coordination gap between PPSA and NTEP	1. There is no district office for PPSAs in the NTEP structure. The state manager is positioned in the state capital for PPSAs leading to difficulties in part caused by infrequent interactions with the district NTEP team for query resolution.	✓			1. Establish mechanisms to facilitate frequent interaction and feedback sharing between the state and district NTEP, and between the PPSA with both state and district NTEPs

Problem	Root cause	State with identified root cause			Potential solution(s)
		Odisha	Gujarat	Andhra Pradesh	
Challenges with Ni-kshay Portal (universal drug susceptibility testing [UDST], current & diagnosis cohort)	1. Technical glitches in Ni-kshay during invoice preparation: (1) slow downloads and visualizations in Ni-kshay, (2) modules aren't always available, and (3) server issues prevent downloads in low-network areas. This leads PPSAs to rely on paper records, which is both a duplication of effort and can lead to data mismatch between PPSA data and Ni-kshay data (#3 below). 2. The status of UDST is not available in the Ni-kshay notification register, although it was available until about one year ago. These data now have to be taken out from the lab report, which is another step to be performed and many PPSA staff are not aware of this process. This makes it difficult for the PPSAs to get the list of UDST patients, making the calculation of UDST results difficult. Related issues with other indicators have been highlighted to CTD for resolution. 2a. The status of fixed-dose combination provided that was previously available in the dispensation register has also not been working. This has been highlighted to CTD by raising an issue ticket on Ni-kshay Help.	✓		✓	1. Work with NTEP to resolve Ni-kshay technical difficulties including any policy intervention required to improve accessibility of Ni-kshay in low-network areas 2. Advocate for quick resolution of Ni-kshay technical difficulties that can be resolved in a timely manner 3. Conduct additional training and support on resolving Ni-kshay technical issues 4. Develop a repository of PPSA-related issues identified in Ni-kshay to share with CTD for resolution
	2. Lack of capacity in Ni-kshay (duplication and analysis)	✓		✓	1. Conduct training and provide support to increase technical capacity of PPSA staff on Ni-kshay including data quality measures and analysis 2. Discuss with CTD possibilities for improving accessibility of Ni-kshay in low-network areas
	3. Data mismatch between paper records at PPSAs and the data in Ni-kshay	✓			1. Conduct training and support at PPSA onboarding for invoicing and quality controls

Table 9 below provides a summary of the identified bottlenecks, root causes, and suggested solutions for invoice payment timeliness across the three states. Many of the root causes of delayed payment TAT sit with NTEP, so this table is organized by the different processes of contract management.

Table 9. Root cause analysis: Payment TAT

Problem	Root cause	State with identified root cause			Potential solution(s)
		Odisha	Gujarat	Andhra Pradesh	
MOU development & renewal					
Delayed contract renewal	1. When an ROP is approved, there is an administrative delay related to the fiscal year and the subsequent receiving of funds	✓			1. Administrative direction/support to the districts regarding the approvals of the funds for PPSA continuation so the contracts can be signed timely.
	2. There is an unclear methodology and criteria for performance evaluation informing subsequent contract renewals	✓			1. Provide support in performance analysis of PPSAs through the development of a PPSA performance matrix/tool (including defining criteria for contract renewal); HS4TB will develop the matrix and support its use.
MOUs didn't include payment process timeline	1. Lack of expertise and systems at state for contracting output-based services			✓	1. Training, support, and inclusion of payment process timeline in MOUs in future
Verification & validation					
Lack of clarity of verification and validation process	1. There is no operating manual for verification and validation.	✓			1. Develop SOPs and an operational manual and provide training on verification and validation
	2. There is no existing tool for invoice calculation.				1. Develop a tool for invoice calculation and an associated SOP

Problem	Root cause	State with identified root cause			Potential solution(s)
		Odisha	Gujarat	Andhra Pradesh	
Unnecessarily exhaustive validation of all patient IDs	1. Fear of audit and legal compliance 2. Non-adherence to the verification clause; non-adherence to the verification and validation clause by the NTEP leads to: Inappropriate/inaccurate verification and validation of private-sector TB patients (it is usually 5-10% as per contract terms, which goes up to 100% as seen in Odisha and Andhra Pradesh) No standard protocols for verification/validation and payment process being followed 3. With some patients moving, and some level of transcription errors, a certain number of validation failures among the sampled patients may be inevitable, and a process that allows for zero errors may be unrealistic.	✓			1. Administrative direction/support to move the validation process toward the approved percentage (e.g., 5%) to ensure timely validation of invoices. Currently a staggered approach is used informally, reducing the required validation percentage based on previous results, but the goal is to improve adherence to meet the validation percentage stated in the contract. 2. To accommodate the inevitable data issues, explore the use of contract terms that allow for a validation outcome where less than 100% of the sampled patients are validated (but the percentage of sampled patients who are validated is still greater than a specific, pre-specified value—e.g., NTEP may specify that >90% out of the 5% patient sample need to have validated data)
Lack of role clarity among NTEP staff for verification and validation	1. There is a lack of clear job descriptions, responsibilities, and SOPs related to verification and validation	✓			1. Training on the roles expected from different personnel involved in the verification and validation process as well as support being provided in terms of training on the verification and validation process
Delays in verification and validation process	1. Insufficient dedicated manpower with expertise for contract and finance management within NTEP at district and state including: (a) Lack of expertise in NTEP contract management and finance management at district level (b) No designated data analyst at NTEP district level/state for verification of PPSA-reported data in Ni-kshay level	✓		✓	1. Conduct verification and validation capacity needs assessment of NTEP staff to identify gaps 2. Develop and conduct capacity building training and supervision of existing NTEP staff on verification and validation procedures

Problem	Root cause	State with identified root cause			Potential solution(s)
		Odisha	Gujarat	Andhra Pradesh	
Payment authorization					
Delays in payment approval and release at NHM level	1. Staff changes in key financial and approval authority at the state level (e.g., institutional turnover)			✓	1. Capacity building of existing staff with trainings that are adaptive to the high turnover rates, including details such as who would be an alternative signer/approver if certain positions are vacant, and guidance on streamlining the payment approval and administrative steps
	2. Lack of alternative staff to assure payment approval and release processes			✓	1. Advocate for developing a second line of staff for supporting the approval and release process 2. Develop and provide clear written diagram of the steps (including person[s] responsible) to review and approve payments
Payment distribution					
Unavailability of funds (challenge due to SNA)	1. If multiple payment requests or bulk payment requests are received in a short time from multiple departments of health, a payment request may sometimes bounce back in Public Finance Management System (PFMS) due to temporary unavailability of funds in the SNA. 2. The NHM faces a funds crunch in Q1 of every fiscal year for all projects in NHM.	✓		✓	1. STO advocates with the fund-approving authorities at the state level for higher initial allocation for committed expenses 2. Although this does not address the government issue directly, HS4TB could identify and implement an innovative/ alternative financing model (e.g., a First Loss Default Guarantee) to support the PPSA through this period.
Cross-cutting					
Inability to get actionable data on invoice and payment progression	1. There is no invoice or payment tracking mechanism. 2. There is no one person identified to monitor the progression and timeliness of invoice and payment processes.	✓			1. Recommend prioritizing a central payment tracker in Ni-kshay (including invoice submission tracker as well) 2. Advocacy with senior leadership in the NTEP and NHM for digitization of the post-contract management tracker 3. Recommend identifying one or two people in each state or district (as applicable) to monitor and facilitate the progression of invoice submissions and payment disbursements

Recommendations

The following recommendations are a synthesis of the detailed root cause analysis and solutions identified above. Recommendations included in table 10 will guide HS4TB's strategy and program activities to

maximize improvements in the timeliness of invoice submission and payment TAT. This will lead to increased PPSA trust and engagement in contracting of TB services and allow for expanded quality and reach of private provider TB control efforts, ultimately contributing to further coverage of services and a reduction of TB morbidity and mortality in achieving the GoI's goal of elimination of TB in India.

Table 10. Strategic recommendations for HS4TB programming

Recommendation	HS4TB planned activity scope	How this will contribute to addressing the problem/ root cause
Promote changes to MOU standard templates	Inclusion of invoice submission due date, payment timelines, guidance on outcome calculations, verification and validation procedures, late-payment penalties, and early payment options[13] in MOU during contract renewal and new contract establishment Also, establishing longer contract timelines	Creates clarity about parties' obligations and expectations; standardization may help create norms and clarity that improve the process. Additionally, late payment penalties and early payment options could help with reducing payment delays. Establishing longer contract periods creates a more predictable environment for PPSAs and reduces the risk of service gaps.
Conducting a costing/pricing analysis/survey for arriving at a figure which would be acceptable to the PPSA and also viable for the NTEP	Review PPSA financial viability and prepare a costing model for arriving at contract budget which would be acceptable to the PPSA and also viable for the NTEP	Reasonable payment levels provide some financial cushion against late payments and allow PPSAs to hire and retain staff and make investments in training and management.
Develop trackers to facilitate on-time submission of invoices and invoice payment	Develop Excel-based verification and validation tool	HS4TB team plans to introduce an Excel-based tool to reduce the duration of the verification and validation process. The anticipated tool will provide STC/State TB Demonstration Center with cross-checked verification of all patient IDs and key indicators claimed by the PPSA with Ni-kshay reports. This includes the enrollment register, TB Notification Register (TBNR)-current facility, dispensation register, and the lab register. After this process, as per the percentage mentioned in the agreement, patient IDs will be selected for random sampling. This will be taken from the TBNR (current facility) submitted by the PPSA. The Excel tool will also do payment calculations. The semi-automated Excel tool eliminates the need for a manual and lengthy verification and validation process, which will now be expedited and facilitate the timely release of payment.
SOP development	SOP development	HS4TB plans to develop SOPs for verification and validation of the invoices (i.e., instructions on the use of the Excel-based tool described above) that will help state-level functionaries and PPSA staff have clearer guidelines for processes associated with the submission of invoices and supporting documents.
	Payment tracker	HS4TB recommends the creation and use of a payment tracker to demonstrate the time lag from invoice submission to payment release, allowing for constant follow-up and thus timely payments to PPSA. If possible, this should be digital and integrated into Ni-kshay.

13 Up to 75% of invoice submission amount per GFR

Recommendation	HS4TB planned activity scope	How this will contribute to addressing the problem/ root cause
Conduct capacity building activities	Competency assessment	The competency assessment results will identify gaps in capacity for verification and validation and monitoring/tracking of payment timeliness for PPSA and NTEP and define areas for capacity building. The competency assessment will help to identify specific gaps that can be addressed through training, support, and SOPs.
	Trainings	HS4TB recommends planning capacity building of government functionaries and PPSA staff to strengthen and boost the technical capacity/skills set of NTEP functionaries in contract management and procurement. Topics include: • Invoice preparation for PPSAs • Ni-kshay for PPSAs • Contract management (for existing NTEP staff and district staff) After a needs assessment, a training in verification and validation roles and responsibilities will address the lack of clarity in this area.
Develop verification and validation data quality assurance procedures	Implementation of the data quality assurance procedures will increase: 1. Recording of correct addresses 2. Use of digital record keeping	Improving the quality of verification and validation increases acceptance and speeds approval.
Improved communication at district level	Frequent interaction and feedback sharing with the district	Reducing TAT bottlenecks

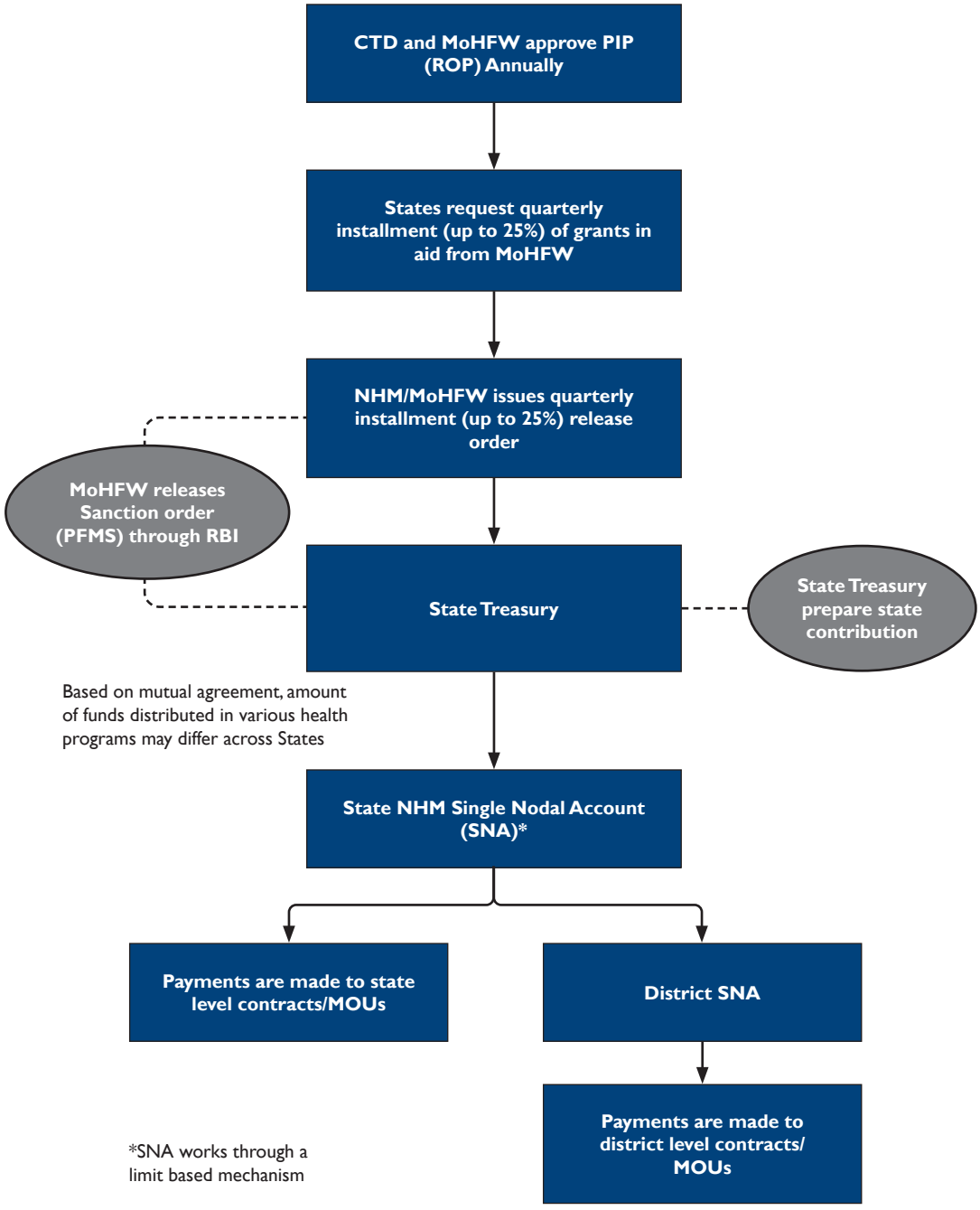
While the majority of the recommendations in the table above have been arrived at from the results of the Odisha data analysis, it is expected that they will largely be relevant across all project states.

Conclusion

The baseline assessment report findings document HS4TB's systematic approach to utilize existing data to identify bottlenecks and root causes of invoice timeliness and payment TAT to inform HS4TB's programming after November 2022. This report outlines why some root causes and associated programmatic solutions are specific to different contexts and will inform how HS4TB contextualizes intervention packages for each individual state. While only three of the five states in which HS4TB works had operational PPSAs at the time of the baseline assessment, results from the assessment of these three states informed interventions in the additional states of Telangana and Delhi. HS4TB started contextualizing intervention packages for each state starting in early 2023 and has already begun addressing many of these root causes in the most recent calendar year. These interventions are expected to improve delays in invoice submission and payment TAT in the post-contracting phase, ultimately improving the operations of PPSAs to deliver quality services for TB in the five states. A subsequent case study will explore if invoice submission timeliness and payment TAT in the five states has improved and how HS4TB has contributed to any changes.

Annex 1: Fund Flow Analysis

The fund flow process from central to state governments is similar for all three states included in the baseline and is also similar in Telangana and Delhi. After submission of the PIP, a detailed discussion is held on the submitted PIP. Post-discussion and amendments, the PIP is approved in the ROPs. In Q1 of the current financial year (2023-24), the states requested the central government to release the first tranche based on the approved budget in the ROP as well as the previous year's provisional Statement of Expenditure report. The central government released 25 percent of the approved budget in the ROP after adjusting the unspent balance from the previous financial year through the PFMS, wherein funds are directly transferred to the state treasury. Thereafter, states transferred the limits/funds to districts for onward payments. Where SNAs are implemented, the state releases the limit to respective districts. Through this process it was determined that fund flow is not a major barrier to TAT (except during the quarter when the ROP is occurring), and therefore this information has been placed in this annex.



Annex 2: Supplementary Data Tables

Table 2.1 depicts the invoice submission timeliness and payment TAT for the invoices that were not included in this assessment report. These 11 invoices were expected to be submitted during the baseline period but were submitted late and could not be included in the assessment. However, the team captured their actual submissions and subsequent payment data in this supplementary table to provide follow-up data and information which may have been considered when forming the recommendations section of this report.

Table 2.1. Invoice submission and payment TAT for invoices pending as of baseline (expected by November 1, 2022, but not yet submitted)

	Invoice submission	Invoice payment TAT
Pending AP01_Q3 2022	41	193
Pending OD05_Q2 - 2022	142	5
Pending OD07_Q3 - 2022	45	92
Pending OD02_Q3 - 2022	91	117
Pending OD05_Q3 - 2022	91	5
Pending OD03_Q3 - 2022	95	41
Pending OD04_Q3 - 2022	150	17
Pending OD01_Q3 - 2022	150	17
Pending OD06_Q3 - 2022	151	3
Pending G01_Q3 - 2022	139	--[14]
Pending G01_Q3 - 2022	139	--[14]

14 The verification and validation for the Gujarat invoices has been completed and payment is pending for all the submitted invoices. The process is stuck at the level of administrative approvals as of submission of this report.