Process evaluation of the adoption and use of standard treatment guidelines under AB PM-JAY
Process evaluation of the adoption and use of standard treatment guidelines under AB PM-JAY

September 2023
# Table of contents

**Abbreviations**  xi
**Executive summary**  xii

1. **Introduction**  1
   1.1. Background  1
   1.2. Standard treatment guidelines under AB PM-JAY  2
   1.3. Need and objectives of the study  4

2. **Review of literature**  6
   2.1. Definition and need  6
   2.2. Challenges in implementation  6
   2.3. Implementation frameworks  7

3. **Method and data**  10
   3.1. Study design  10
   3.2. Qualitative data and analysis  10
   3.3. Quantitative data and analysis  11
   3.4. Conceptual framework  12
   3.5. Objective wise methodology  13
   3.6. Ethical consideration  14

4. **Findings and discussion**  16
   4.1. Overview of AB PM-JAY and STG in the two regions under primary study  16
   4.2. Reach and awareness of STGs amongst EHCPs, physicians and claim adjudicators  18
   4.3. User experience with STGs and their perspective  22
   4.4. Effect of STGs on claim processing and patient care  29

5. **Conclusion and recommendations**  39
   5.1. Conclusion  39
   5.2. Recommendations  40
   5.3. Limitations  42

**Annexures**  45
**References**  60
**List of tables and figures**  64
Acknowledgements

This report presents key findings from a study conducted on the ‘Process evaluation of the adoption and use of Standard Treatment Guidelines (STGs) Under PM-JAY’. The study provides an overview of the extent to which the recently launched STGs have been adopted by hospitals & their understanding and views on the same.

The WHO would like to acknowledge the Goa Institute of Management for their contribution to the execution of this study. The study team would also like to express their gratitude to officials and experts at the National Health Authority (NHA) and participating State Health Authorities (SHA). Additionally, the team would also like thank the functionaries of insurance companies and third-party administrators, as well as empaneled hospitals, for their cooperation in conducting this study.

Project Team

World Health Organization
Dr Grace Achungura
Mr Jaidev Singh Anand
Dr Hilde De Graeve

Goa Institute of Management
Dr Nafisa Vaz
Dr Arif Raza
Dr Kheya Furtado

National Health Authority
Dr Basant Garg
Dr Pankaj Arora
Mr Praveen Sharma
Mr Vipin Kumar
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AB PM-JAY</td>
<td>Ayushman Bharat Pradhan Mantri Jan Arogya Yojana</td>
</tr>
<tr>
<td>ALOS</td>
<td>average length of stay</td>
</tr>
<tr>
<td>AM</td>
<td>Ayushman Mitra</td>
</tr>
<tr>
<td>CEO</td>
<td>chief executive officer</td>
</tr>
<tr>
<td>COPD</td>
<td>chronic obstructive pulmonary disease</td>
</tr>
<tr>
<td>CPD</td>
<td>claims processing doctor</td>
</tr>
<tr>
<td>CFIR</td>
<td>consolidated framework for implementation research</td>
</tr>
<tr>
<td>DHR</td>
<td>Department of Health Research</td>
</tr>
<tr>
<td>DIU</td>
<td>district implementation unit</td>
</tr>
<tr>
<td>EHCP</td>
<td>empaneled health care providers</td>
</tr>
<tr>
<td>HBP</td>
<td>health benefit packages</td>
</tr>
<tr>
<td>HWCs</td>
<td>health and wellness centers</td>
</tr>
<tr>
<td>ICMR</td>
<td>Indian Council of Medical Research</td>
</tr>
<tr>
<td>ISA</td>
<td>implementation support agency</td>
</tr>
<tr>
<td>J&amp;K</td>
<td>Jammu &amp; Kashmir</td>
</tr>
<tr>
<td>LMIC</td>
<td>low- and middle-income countries</td>
</tr>
<tr>
<td>MEDCO</td>
<td>medical coordinator</td>
</tr>
<tr>
<td>MP</td>
<td>Madhya Pradesh</td>
</tr>
<tr>
<td>NABH</td>
<td>National Accreditation Board for Hospitals and Health-care Providers</td>
</tr>
<tr>
<td>NHA</td>
<td>National Health Authority</td>
</tr>
<tr>
<td>OOP</td>
<td>out-of-pocket</td>
</tr>
<tr>
<td>PARIHIS</td>
<td>promoting action on research implementation in health services</td>
</tr>
<tr>
<td>PMAM</td>
<td>PM-JAY Arogya Mitra</td>
</tr>
<tr>
<td>PPD</td>
<td>pre-authorization processing doctor</td>
</tr>
<tr>
<td>SECC</td>
<td>socio-economic caste census</td>
</tr>
<tr>
<td>SHA</td>
<td>State Health Agency</td>
</tr>
<tr>
<td>STG</td>
<td>standard treatment guidelines</td>
</tr>
<tr>
<td>STW</td>
<td>standard treatment workflow</td>
</tr>
<tr>
<td>TAT</td>
<td>turn-around time</td>
</tr>
<tr>
<td>TPA</td>
<td>third-party administrators</td>
</tr>
<tr>
<td>TMS</td>
<td>transaction management system</td>
</tr>
<tr>
<td>UHC</td>
<td>universal health coverage</td>
</tr>
<tr>
<td>UT</td>
<td>Union Territory</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
</tbody>
</table>
Executive summary

Background

Since the launch of AB PM-JAY scheme in 2018, the National Health Authority (NHA) of India has introduced policy measures to address the issue of quality of care being provided by empaneled health-care providers (EHCPs). These include establishing a quality-based certification system for health-care facilities and paying an incentive to accredited/certified health-care facilities. An earlier evaluation study indicated that while these measures were primarily driving improvements in the infrastructure and processes of health-care facilities, additional specific measures were needed to address the dimension of clinical care. As a continuing effort, NHA undertook the task of developing Standard Treatment Guidelines (STGs) for each treatment under its scope, to establish evidence-based clinical practice and to reduce the variation in care being offered by tens of thousands of health-care facilities across the country. Post-implementation of STGs, there was a need to assess early experiences and effects of this measure in the field, to obtain insights for strengthening the practice of STG-based medical care.

Purpose and objectives

The purpose of this study was to explore the early effects and experience of the users of STGs. This is the first study after STG implementation and was limited to mapping the experience of two states. Objectives of the study were a) to evaluate the extent of adoption of the STGs by PM-JAY empaneled hospitals; b) to review the STG implementation process and identify impediments faced about the same; c) to evaluate the effect of STG implementation on the claims management processes including fraud control; and d) to analyze the early effect of standard treatment guidelines on the standard of care.

Method and data

A mixed-method approach was adopted. To evaluate the first and the second objective, two regions were selected, the state of Madhya Pradesh (trust mode) and the Union Territories of Jammu and Kashmir (insurance mode). Primary qualitative data was collected through semi-structured in-depth interviews with a sample of the primary users of STGs. The users include, care providers (physicians and administrators of EHCPs), claim adjudicators (claim and pre-authorization processing doctors and managers of TPA/ISA and the insurance company), and governing officials (officials of state health agency). In total 35 physicians, of different specialities from 14 EHCPs, administrators and Ayushman Mitra (AMs) of each EHCP, claim and pre-processing doctors and managers from 4 TPAs/ISAs and 1 insurance company, and officials from 2 SHAs were interviewed. To supplement the qualitative data, a structured self-reported survey of all physicians at EHCPs visited, was also conducted, in which a total of 98 usable responses were received. The survey collected responses from physicians on their level of awareness, level of utilization and feedback on STGs of AB PM-JAY.

1 In Trust mode, the payment for medical services provided to beneficiaries of the scheme is done by a Trust formed and controlled by the state government, while in Insurance mode it is done by an Insurance Company for a premium that they receive from state government
To evaluate the effect on claim and standard of care, secondary quantitative data on clinical care from claims submitted by empaneled health-care providers (EHCPs) was analyzed. A before and after comparative analysis was done on a sample of claims from six states.

Findings

Reach of STGs: The knowledge about STGs under AB PM-JAY, among care providers - administrators and physicians of EHCPs - vary between the two study regions. Health-care providers in J&K, under the insurance mode, were observed to be substantially better informed than their counterparts in MP, under trust mode. In both regions, the awareness of STGs was lacking more in public EHCPs and their physicians compared to private EHCPs. A systematic approach to promoting the uptake of STGs amongst care providers was lacking in both regions studied.

Irrespective of the level of awareness of care providers, in both regions STGs were integrated into the transaction management system and were used by the claim adjudicators for processing pre-authorizations and claims management. As a result, EHCPs were required to provide mandatory clinical documents while submitting claims, which compelled them to comply with the STGs.

Users’ perspective: All key users involved in the implementation of STGs were in general agreement about the positive impact of STGs on standardizing clinical quality, transparency in claim and preauthorization processing and its ability to control fraudulent behaviour. However, each user type had some benefits and limitations to share for STGs

- Positives
  - For physicians, it served as a reference document, reduced subjectivity and provided clarity on clinical matters.
  - For EHCP administrators it brought transparency and clarity over clinical expectations and points on which claims will be scrutinized.
  - For TPA/ISA it benefited by streamlining the claim management process and helped in better documentation and record keeping.

- Negatives
  - Restrictions in treatment decisions, irrational expectations and increased paper work as experienced by doctors.
  - The increased cost of care, irrational expectations, and misuse of STG for claim delay and rejections are the key negatives shared by administrators of EHCPs.
  - Ambiguity in some STGs and operational issues were the limitations faced by TPAs.

Based on the experiences and perspectives shared by users, enablers and barriers to the uptake of STGs have been identified. A clear contradiction was observed between care providers and claim adjudicators for the level of flexibility STG should offer. In the view of care providers, STG should be broad and flexible serving only as a reference document, without restricting their clinical autonomy, as actual clinical decisions can differ from case to case and there is generally a need to customize the treatment. On the other hand, in the opinion of claim adjudicators, discretion and subjectivity make STGs vulnerable to misuse and can stimulate fraudulent behaviors, which can be difficult to control.
It is to be noted that, while STGs under AB PM-JAY were designed to serve only as a reference document and not to surpass the clinical decisions made by physicians, in practice, the STG-based claim processing was observed to be indirectly influencing or limiting the clinical autonomy of physicians.

The difference in the level of awareness and experience with STGs in the two-region studied are indicative of contextual factors playing a key role in determining the effectiveness and fidelity with which STGs are implemented. Since claim management was driving the STG implementation, the degree and fidelity of compliance can be impacted by the stringency level of claim scrutiny.

**Effect on claims and patient care**

The pre- and post-STG claims data is indicative of a reduction in claim rejection rates from 13.48% to 7.7%. The reduction was observed both in public and private EHCPs, which could be due to clarity to EHCPs on essential clinical documents required for claim submission and integration of STG checklist into TMS. Average Length of Stay (ALOS), has increased in all EHCP types and in most specialities. This could be due to the availability of ALOS as a reference in STG and the use of the same as a checkpoint by the CPD of TPA/ISA during claim processing. The study also found that while the absolute amount of claim generated under PM-JAY increased substantially, the proportion of AB PM-JAY patients handled by public EHCPs has significantly increased and that by private EHCPs have decreased after STG implementation. The reason for this need to be explored by looking in to broader and data.

The quantitative analysis was limited as the data available for analysis were consolidated package-wise and were not individual-level patient level data. Also, while the pre and post-analysis comparison was done, with the absence of controls to compare with, other factors contributing to the change in measures cannot be ruled out.

**Conclusion**

STGs issued by AB PM-JAY are being used as a checklist for scrutinizing clinical components of claims and deciding claim processing outcomes. This in turn has compelled EHCPs to comply with the clinical requirements outlined in STG documents. There was an absence of a systematic approach to directly orient and encourage physicians for STG implementation. Any system or platform to engage the users of STGs for incorporating their feedback was also lacking. Due to this, the implementation of STG at the care provider level appears to be forced in nature. The level of awareness and compliance to STG by care providers is likely to be determined by the level of stringency with which STGs are used for the claim processing. There are specific expectations that are acting as enablers or barriers for different users of STGs. Unambiguity and transparency in STGs are common expectations by all users, less documentation intensive and rationality are expected by physicians and administrators of EHCPs, while administrators of EHCPs also expect STGs to be cost-effective in implementation. Physicians also expect STGs to be flexible and not limit their autonomy in clinical decisions, which contradicts the claim adjudicators who expect STGs to be firm and not have much room for discretion.

The contradiction is possibly resulting in differences between care providers and claim adjudicators, like in the interpretation of some specific elements of STGs. There is no defined system or independent body to resolve differences or clarify interpretation, in the absence of
which, the differences manifest in form of dissatisfaction or occasional conflicts.

Reduction in claim rejection rate post-STG implementation indicates improved medical documentation and record keeping, which is a positive effect of STG. STG-based claim scrutiny could have likely restricted the ability of certain EHCPs to indulge in fraud or abuse of the AB PM-JAY scheme.

The increase in ALOS post-STG implementation indicates that more resources are being used for treating patients. However, as indicated by several EHCPs, some part of the increase could also be unnecessary due to compulsion on them to match the hospitalization days of each patient with the ALOS stated in STG. Unnecessary stays can lead to reduced patient satisfaction and could be detrimental to patient safety as it unnecessarily increases their exposure to health-care-associated infection.

While there is an increase in the number of claims in absolute terms, the proportion of claims by private EHCPs has markedly reduced, the reason for which needs further exploration.

In absence of requisite individual patient-level data effect on clinical care outcomes and claim processing efficiency could not be assessed.

**Recommendations**

The benefits of using standard and evidence-based guidelines for treatment are well recognized globally and there is a clear movement in most countries to adopt and promote STG-based medical care. The STG system established under PMJAY is a move in the right direction and this study recommends that it must be continued and further strengthened by gradually addressing the demerits. Some of the key recommendations in this regard are - Clarifying the role of STGs in clinical decision-making; having an independent body to resolve interpretational differences on STG; systematic strengthening of STGs by periodic updating focused on the incorporation of the latest development in medical science and eliminating ambiguity in guidelines; establishing a system for recognizing and tracking deviations from the STG; tracking and monitoring deviations; strategize to encourage care providers through using frameworks such as CFIR or PARIHS and having a platform for engaging with users, and monitoring variance in clinical quality and claim processing. Further studies recommended are to explore internal and external environmental factors that are influencing the adoption and fidelity of implementation of STG, and to assess the cost impact of STG compliance.
1

Introduction

1.1 Background

Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB PM-JAY), the flagship scheme of the Government of India was launched in line with the recommendation of National Health Policy, 2017 to achieve the vision of universal health coverage. The scheme is designed to provide financial protection to poor families in India for availing of secondary and tertiary-level medical care. It is operational for over four years since its nation-wide launch in September 2018. The scheme is governed by National Health Authority (NHA), which is an apex body set-up for implementing PM-JAY at the national level. Since the launch of the scheme, NHA has taken several policy measures to address the issues and challenges that the scheme face or may face in the future.

One of the challenges is to ensure a desired level of quality in service and care being provided to the beneficiary of the scheme. Two specific actions were taken in this regard.

1) Establishment of a quality certification system that recognizes and certifies the empaneled health-care providers (EHCPs) as bronze, silver or gold category, depending upon pre-defined criteria.

2) Paying an incentive to health-care facilities according to the level of accreditation or quality certificate that they hold. A previous study indicated that these measures have the potential to positively impact the infrastructure and services of health-care facilities, however additional specific measures will be required to address the quality of clinical care services.1 Likelihood of sub-standard care in clinical services with a high amount of variability among different types of care providers was the pressing concern for NHA.

To address the same, in early 2021, NHA started the process of documenting Standard Treatment Guidelines (STGs) to serve as a reference document for clinical decisions. The STGs were issued in batches, as and when they were developed and as of September 2022 STGs for about 1572 treatments have been issued. To implement STGs in practice, a strategy used was to integrate the key requirement of STGs in the transaction management system (TMS), which is a computerized system for the operationalization of claims and pre-authorization processing. With this integration, empaneled EHCPs are required to submit a list of mandatory clinical documents for every case they treat under AB PM-JAY. The list of mandatory clinical documents is specific to each treatment package and is as per the STG of that treatment. The third-party administrators (TPA) or implementation support agency (ISA), that adjudicates the claims are required to verify the clinical documents uploaded by the claiming EHCP and decide about the claim settlement. Earlier, when STGs were not introduced, the empaneled hospitals were required to upload the clinical document without reference to any standard list of medical documents.
With the rolling out of STGs for most of the treatment under the scope of PM-JAY, there was a need to assess early experience and effects that it has created in the field, to generate information for strengthening the policy and system for STGs. This study was carried out to serve this purpose.

1.2 Standard treatment guidelines under AB PM-JAY

The aim of AB PM-JAY behind developing STGs was to have guidelines for clinical care under each of its health benefits packages. To develop STGs, available Standard Treatment Workflows (STWs) developed by the Department of Health Research - Indian Council of Medical Research (DHR/ICMR), National Cancer Grid (NCG), State Guidelines, Ministry guidelines, and other globally accepted standard treatment protocols were adopted and customized to scheme’s requirement. PM-JAY identified four specific objectives that STGs should be able to meet:

1) to aid the pre-authorization processing doctor (PPD) and claims processing doctor (CPD) at the time of pre-authorization and claims processing by specifying the mandatory documentation required and specific things to look for in these documents for the prescribed procedure.

2) to help prevent and control fraud and abuse.

3) to provide quality care to the beneficiaries by bringing uniformity in documentation across empaneled health-care providers.

4) to serve as a guidance tool for treating physicians, EHCPs, TPAs/ISA, SHAs and medical auditors.²

The STGs under PM-JAY were not conceptualized to recommend clinical management of patients, for which the EHCPs and their physicians were expected to refer to other relevant material as per the extant professional norms and use the judgment of the health-care professionals.

Process of development of STGs - A long-drawn process involving the onboarding of experts and deliberations at several levels. The overall process flow followed by NHA for conceptualization to rolling out of STGs is described in the figure below:

![Fig. 1 - The process flow for STG development](image)

NHA collaborated with DHR/ICMR, Tata Memorial Hospital (TMH) and NCG to rationalize the health benefits packages (HBPs) and to have STGs in place. Memorandum of Association (MoA) were inked with the above agencies for the development of standard treatment workflows (STWs) and to guide the development of STGs. Overall development and execution of STGs were done in two phases.
In phase 1, STGs were conceptualized and introduced for most abuse-prone packages as identified by the National Anti-Fraud Unit (NAFU) team of NHA. Out of this list, 53 packages were identified for which STWs were already available by ICMR. These were adapted to develop STGs and were piloted in six volunteering states.

With positive feedback and request from states for STGs for more packages, the second phase was initiated. Other sources for base documents were explored for remaining treatment packages, using which STGs were developed and rolled out nationally in batches. Before rolling out, each STG went through internal and external expert reviews, was approved by NHA and was then integrated into TMS.

To ensure the technical appropriateness of STGs, a medical cell was constituted by onboarding a set of experts from various medical specialities. The main objective of the medical cell was to engage experts for the review and rationalization of STGs.

**Structure of the STGs:** A uniform format was followed to develop STGs, which includes

- **An introductory section** that contains package and procedure names, relevant HBP codes, essential and desirable qualifications of the treating doctor, and the linkage to empanelment criteria of the EHCP in which the treatment can be undertaken. A disclaimer is also stated in this section, clarifying that the purpose of the document is to guide claim processing, and while EHCP can refer to this document for understanding how the claim will be processed, the document doesn’t intend to recommend clinical management, which is the prerogative of the treating physicians.

- **Part 1** of the STG follows the introductory section and is intended for EHCPs and physicians. This part includes key clinical pointers such as signs, symptoms, indications, contraindications, admission, discharge and referral criteria, etc. Guidance for the MEDCO is also included, to select the appropriate package based on what to look for in the documents/clinical notes of the patient and give a glimpse of the standard treatment workflow referred. This part also lists the mandatory documents required to be submitted by the EHCPs both at the time of pre-auth and claims submission.

- **Part 2** of the document is for doctors at TPA/ISA (PPD and CPD) and consist of guidance on mandatory documents required for processing, specific to the package.

- **Part 3** is the IT guidance part and includes significant alert questions to be answered at the EHCP level. This serves as a cross-check mechanism to ensure the right packages are being booked.

In a few STGs that are abuse-prone, part 4 is also included which contains guidelines for Medical Auditors.

**Implementation of STGs:** While the STGs were integrated into TMS for implementation, the NHA also conducted training sessions with states. Through training, teams across India were oriented on how to upload files and related data and how to process claims and pre-authorization using STGs. On 15 August 2020, the STGs were officially launched, published and disseminated. Soft copies of all STGs were uploaded on the AB PM-JAY website for public view and download.
**Monitoring and analysis:** To monitor the implementation of STGs, a dashboard was developed that provides an overview of STG utilization and highlights areas where further monitoring and analysis are required. STG dashboard is open to states for continuous self-monitoring at their level. The NAFU team also utilizes the inputs from this dashboard as triggers to monitor flagged cases by either desk audit/field audit.

In the future, the NHA plans to review and revise STGs from time to time and develop new STGs for a new treatment package that would be introduced.

### 1.3 Need and objectives of the study

After almost one and a half years of the roll out of STGs, there was a need to evaluate the effectiveness of the guidelines and to map the early experience of users involved in the utilization of STGs. It needs to be understood as to what has worked and what areas should be considered for course correction to achieve the stated objectives as well as the overall goals of UHC. The purpose of the study is to inform policy modifications required with respect to STG system. Specific objectives of the study include:

1. To Evaluate the extent of adoption of the STGs by AB PM-JAY empanelled facilities.

2. To review the STG implementation process and identify impediments faced about the same.

3. Evaluate the effect of STG implementation on the claim's management processes including fraud control.

4. To analyse the early effect of standard treatment guidelines on the standard of care.
2 Review of literature

2.1 Definition and need

Standard treatment guidelines (STGs) also known as clinical practice guidelines or standard treatment protocols are increasingly being used worldwide as a means to ensure the provision of evidence-based and standardized clinical care to patients. STGs are defined as “a systematically developed statement” designed to assist practitioners and patients in making decisions about appropriate health care for specific clinical circumstances. They serve as a source of readily available evidence, reviewed and agreed upon by experts, which can be transformed into practice recommendations. Basing clinical practice on methodologically developed STGs has demonstrated improvement in process of care and patient outcomes. Studies on specific STGs have generally observed improvements in patient care and outcome of care, for example, reduced morbidity after appendectomy for complicated appendicitis, better and faster outcomes in patients with psychiatric disorders, better physical functioning outcomes, and less use of low back pain care.

Multifarious benefits of STGs have been reported in the literature. For health-care providers, it provides standardized guidance and encourages high-quality care by directing practitioners to the most appropriate treatment plan for a given health condition. For health-care officials, it provides a basis for evaluating the quality of clinical care and a system for controlling costs by using funds more efficiently. To patients, STG enables them to receive consistent and predictable treatment from all levels of providers and at all locations across the health care system. Owing to the benefits of STGs, there is a well-established movement to develop and disseminate STG for over a decade now, which is rooted in the need to restrict practice variation in the health-care system. STGs are increasingly used in parts of the United States, Europe, Latin America, Asia, Africa, and the Western Pacific.

2.2 Challenges in implementation

While literature established the benefits of STGs, implementation of STGs has been a challenge in most parts of the world. A general observation about the lack of adherence to guidelines worldwide across different conditions and levels of care has been reported. Studies in the United States and the Netherlands have suggested that in about 30-40% of patients, treatment guidelines are not adhered to. In care provided to cancer patients by Australian nutritionists, evidence suggests two-thirds of the guidelines are routinely not followed. Low compliance to practice guidelines and high variation in patient care undergoing stem cell transplantation were reported from Switzerland and Norway. Another study from Norway indicated poor adherence to the palliative care guidelines by general practitioners.
Translating treatment guidelines into practice is a challenging process and requires adaptation at the individual, organizational and health system levels.\textsuperscript{21} Identifying and addressing the barriers and facilitators of implementing STGs is a key step for achieving those changes and driving implementation.\textsuperscript{13,21} Several synthesis studies have identified and described various factors that influence the clinical decisions of health-care providers. A systematic metareview classified the factors that influence the implementation of STGs into - those related to the characteristics of the guidelines, implementation strategies, professionals, patients and the environment.\textsuperscript{22} A later systematic review, using a synthesis of frameworks and expert consensus, developed a checklist of factors that enable or restrict health-care professionals’ adoption of treatment guidelines.\textsuperscript{9} The list consists of 57 factors which were grouped into those related to guidelines, individual health professionals, patients, professional interactions, incentives and resources, the capacity for organizational change, and social, political and legal factors.

Other studies have also reported numerous factors that influence the acceptance and use of guidelines. These factors can occur at the micro level like individual behavior of clinicians and patients, meso level which is organizational culture and systems, or macro level, which is the context and system within which health-care services is being provided.\textsuperscript{23} Some of these factors are inherent to the nature of the new system of practice or technology through which STGs are implemented, individual characteristics, and the capacity of the organization to apply evidence.\textsuperscript{24,25} Other factors are related to the guidelines developed; for instance, guidelines are not explicit or are ambiguous, distorted, have a conflict of interest, are poorly written and are perceived to be inapplicable or reducing physician’s autonomy.\textsuperscript{26–28}

With the above challenges in implementing STGs as described in the literature, just producing and providing high-quality guidelines is not enough to ascertain that the recommendations will be implemented in health-care practice. Hence, an active implementation strategy is essential to encourage practitioners to adhere to the guidelines.\textsuperscript{29} Some studies have recommended that implementing STGs should be planned as an iterative process with several steps that include, adapting guidelines to the local context, identifying barriers, planning a customized intervention for promoting the uptake of guidelines and monitoring the associated outcomes. Irrespective of how guidelines are developed or who is responsible for implementation, detailed instruction for the implementation of STGs must form an essential part of moving to evidence and standard-based health care.\textsuperscript{29,30}

### 2.3 Implementation frameworks

Several models and frameworks have been developed to guide the implementation of STGs, such as the Consolidated Framework for Implementation Research (CFIR) and the Promoting Action on Research Implementation in Health Services (PARIHS) framework. These models highlight the importance of considering the context in which the guidelines will be implemented and the need for multilevel and multifaceted interventions.

The Consolidated Framework for Implementation Research (CFIR) is a systematic and comprehensive framework that was developed to guide the implementation of evidence-based interventions in health-care settings.\textsuperscript{31} It consists of five domains: intervention characteristics, outer setting, inner setting, characteristics of individuals involved, and the process of implementation. These domains have several constructs and they interact in rich
and complex ways to influence implementation effectiveness.32

The Promoting Action on Research Implementation in Health Services (PARIHS) framework is a theory-based framework that was developed to guide the implementation of evidence-based practices in health-care settings.33 It consists of three key elements:

- **Evidence**: This refers to the quality and strength of the evidence supporting the intervention.
- **Facilitation**: The strategies and activities used to support the implementation of the intervention.
- **Context**: The organizational and environmental factors that may impact the implementation of the intervention, such as culture, leadership, and resources.

The PARIHS framework emphasizes the importance of aligning the evidence, facilitation, and context to successfully implement evidence-based practice.

The RE-AIM (Reach, Effectiveness, Adoption, Implementation, Maintenance) framework is another tool that can be used to evaluate the potential public health impact of an intervention or program. The framework can be used to assess the potential public health impact of an intervention or program and identify areas for improvement. It is often used in conjunction with CFIR or PARIHS framework, to guide the implementation and evaluation of interventions or programs.44

The literature review provides sufficient evidence of the positive impact that health care based on evidence-based guidelines can have on patient care processes and outcomes of care. However, the literature also highlights that implementing STG in practice is complex and challenging and requires a planned effort. Several methods and models are suggested in the literature that can aide in the successful implementation of STGs.
3

Method and data

The study aimed to assess how have STGs translated into practice and what have been the effect against the stated objectives for which they were developed. Specific objectives of the study include:

a) to evaluate the extent of adoption of the STG by AB PM-JAY empaneled hospitals

b) to review the STG implementation process and identify impediments faced about the same

c) to evaluate the effect of STG implementation on the claims management processes including fraud control d) to analyze the early effect of standard treatment guidelines on the standard of care.

3.1 Study design

To address the objectives of this study, a mixed methods study design was used. Effects of STGs on claim management and clinical care were evaluated using secondary data on claims, while uptake of STGs and implementation process was assessed using primary qualitative data generated through in-depth interviews of those involved in the implementation and utilization of STGs. The findings from primary qualitative data and secondary quantitative data were integrated where applicable.

3.2 Qualitative data and analysis

The qualitative data were the primary data collected through the conduction of a series of in-depth semi-structured interviews of the involved in the utilization and implementation of the scheme. The users consist of the following two types:

- Those involved in the provision of care which includes physicians and administrators of EHCPs
- Those involved in claim adjudication which includes pre-authorization and claims processing doctors (PPDs and CPDs) and managers of TPAs/ISAs and managers of Insurance company.

In addition, officials from state health agencies were interviewed as the apex agency responsible for the implementation of STGs in the state.

The respondents for the interviews were selected from two regions - the state of Madhya Pradesh (MP) and the Union Territories of Jammu and Kashmir (J&K). In MP, two districts
- Bhopal and Hoshangabad were selected, while in J&K, districts of Jammu, Samba and Srinagar were selected. While the selection of state and UTs were based on discussion and recommendation of NHA, the selection of districts was done to cover STG users from both rural and urban areas and also based on the availability of different types of EHCPS (such as public and private, accredited, small and large). EHCPS that were actively involved in treating PM-JAY beneficiaries, as evidenced by their number and currency of claims submitted, were preferred, as their experience of using STG was essential for ensuring relevant responses in interviews.

**Fig. 3 - Geographical representation of study regions for primary data collection**

![Map showing study regions in Madhya Pradesh and Jammu & Kashmir](image)

Total 14 EHCPS, two TPAs, three ISAs, one insurance company and two SHAs were visited. The EHCPS consists of four public and 10 private facilities, five NABH accredited, seven large, three mid-sized and four small facilities. From each EHCPS, the administrator and Ayushman Mitra (AM) were interviewed. A total of 35 treating Physicians were interviewed across all 14 EHCPS. The physicians interviewed include specialists from general medicine, general surgery, orthopedics, ophthalmology, radiology, medical oncology, surgical oncology, radiation oncology, obstetrics and gynecology, cardiology and pediatric cardiology.

In TPA/ISAs, a total of 10 PPDs and CPDs and five managers were interviewed. From the insurance company, four officials involved in the management of the scheme were interviewed in a group. About five officials from two SHAs were also interviewed.

A semi-structured interview guide developed for each user type was used to guide the interview (Annexure). The interview was an iterative process with discussion leading to further questions. Verbal consent was taken before the interview by informing the respondents about the purpose of the interview and by committing that confidentiality of their identity will be maintained. Detailed notes of the interview were taken. Most interviews were also audio-recorded with due permission from the respondent and where permission to record was not given, copious notes were taken. A memo of each interview was documented immediately after the completion of the interview that summarizes key points discovered in the interview. The audio-recording was transcribed for textual analysis.

### 3.3 Quantitative data and analysis

The quantitative data used for the study consist of secondary data on claims submitted by EHCPS. The data were taken from the duration of three months period before the implementation of STG (pre-STG data) and three months period after the implementation
of STG (post-STG data). The data were sampled from six states, which include the two states from where primary data was collected and the remaining four were randomly selected. These states were UT of J&K, MP, Uttar Pradesh, Kerala, Tripura, Jharkhand and Chhattisgarh.

The data on clinical details of individual patients who took treatment under AB PM-JAY could not be made available. Instead, the clinical data consolidated by patients’ gender and age group were provided for each treatment package. A total of 176,347 set of consolidated data was available for the pre-STG implementation period and 843,273 set of consolidated data was available for the post-STG implementation period.

The quantitative data were analyzed using a before and after comparison design. The measures indicating claim management and clinical care were calculated using descriptive statistics and compared between the pre-STG and post-STG periods. However, since STGs were rolled out nation-wide, control samples were not available to compare the change in measure over time. This has limited the study’s ability to attribute the change in measure to the STG, as the effects of other factors on the change of measures cannot be adjusted.

3.4 Conceptual framework

To understand and assess the adoption of the standard treatment guidelines, the RE-AIM framework was used as a concept. This methodology helps inform prospective and iterative research aimed at determining the possible implementability of evidence-based healthcare interventions. The RE-AIM theory was established in 1999 in connection to the need for an approach to evaluate population health and impact. Five dimensions are included in RE-AIM to call attention to the significance of measuring an outcome that is rarely assessed, but essential for creating impact. The five RE-AIM dimensions are - reach, effectiveness, adoption, implementation, and maintenance. The framework as represented in Fig. 4, was used in the methodology design for this study.

**Fig. 4 - RE-AIM Framework for the process evaluation in the adoption and use of STGs**

*Source: [www.re-aim.org](http://www.re-aim.org)*
3.5 Objective wise methodology

a) **To evaluate the extent of adoption of the STGS by AB PM-JAY empanelled EHCPs, TPA/Insurance company and the SHA.**
The extent of adoption was evaluated to understand the reach and penetration of the STGs amongst the users like EHCPs, treating doctors, Arogya Mitras, SHA, and TPA/Insurance, through qualitative in-depth interviews. The guiding questions for the same were developed using the RE-AIM framework as a basis. Key issues concerning reach were to understand the awareness of the STGs, why these users accept or decline participation and describe the characteristics of participants versus non-participants and how often they refer to the STGs for guidance.

b) **To review the STG implementation process and Identify Impediments faced about the same.**
Here the process of adoption and implementation was assessed through qualitative interviews which was conducted with the EHCPs Administrators, PMAMs, TPAs, insurance company and the SHA.

c) **Evaluate the effect of STG implementation on the claims management processes.**
To evaluate the Claim management processes the Claim data were analyzed quantitatively for the different types of EHCPs and medical specialities. A comparison of data from the 3-month pre-STG implementation and 3-month post-STG implementation was done.

d) **To analyse the early effect of standard treatment guidelines on the standard of care.**
To analyse the early effect of standard treatment guidelines on the standard of care quantitative analysis was used where clinical care measures were calculated and compared for the pre and post-STG period.

Table 1 summarizes the objective-wise method and data.

**Table 1: Objective-wise method and data**

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Objective</th>
<th>Scope</th>
<th>Data source</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>To evaluate the extent of adoption of the STGS by AB PM-JAY empanelled EHCPs and other users</td>
<td>Assessment of the level of Reach of the STGs amongst doctors, EHCPs, AMs, DIUs, TPAs, SHA and ISAs &lt;br&gt; To Understand the below: &lt;br&gt; • Penetration and Awareness &lt;br&gt; • The practitioner’s confidence in the process &lt;br&gt; • Feedback and Scope of improvement</td>
<td>Primary qualitative interviews of HCPs in AB PM-JAY empaneled EHCPs.</td>
<td>Qualitative analysis of interview data</td>
</tr>
<tr>
<td>S.N.</td>
<td>Objective</td>
<td>Scope</td>
<td>Data source</td>
<td>Method</td>
</tr>
<tr>
<td>------</td>
<td>-----------</td>
<td>-------</td>
<td>-------------</td>
<td>--------</td>
</tr>
</tbody>
</table>
| b.   | To review the STG implementation process and identify impediments faced about the same. | Understand the process of implementation, issues faced when implementing, bottlenecks in the system, and compliance monitoring of the STGs in the:  
- SHA  
- EHCPs  
- AM’s  
- TPA/Insurance  
- Treating Doctors  
- DIU/ISA | This was done through in-depth interviews with the users of the scheme, specifically the SHA, TPA, Insurance company, EHCP, PMAMs and treating physicians. Some secondary data related to LOS and other Quality Indicators that are maintained by the EHCP was used. | Qualitative analysis of interview data |
| c.   | To Evaluate the effect of STG implementation on the claims management processes including fraud control. |  
- Claim rejection rate  
- The proportion of claim between public and private EHCPs |  
- Secondary data on the claim submitted amount and claim approved amount, for the pre and post-STG period | Comparison of quantitative measures for pre-STG and post-STG period. The comparison was done for overall and as per types of EHCPs |
| d.   | To analyze the early effect of standard treatment guidelines on the standard of care. |  
- Average Length of stay (ALOS) | Secondary data on ALOS for each claim | Comparison of quantitative measures for pre-STG and post-STG period. The comparison was done for overall and as per types of EHCPs |

### 3.6 Ethical consideration

Ethical considerations were followed during data collection and analysis. The study proposal including methodology and data collection instrument were submitted to the Institutional Review Board (IRB) of Goa Institute of Management, and its approval was obtained for ethics, before data collection. Each respondent was informed about the purpose of the study and their verbal consent was taken before initiating interviews. The respondents were explicitly informed that their identity will be kept confidential and their responses will be used only for this study. Specific verbal permission was also taken for the audio-recording of the interviews. Wherever permission was not given, audio-recording was not done and only copious notes were taken. The secondary data were received without the identification details of the patient. This data is being used only for this study.
Findings and discussion

This section describes the detailed findings of the study. It is organized into sub-sections, each covering a specific objective or a part of it. At the start, a brief description of the two regions in which the primary study was carried out, is given along-with the status of their AB PM-JAY scheme and STGs. This is followed by two sub-sections on awareness, experience and perspective of each user type on STGs. The perspective of each user type is described in detail with examples and ends with a listing of enablers and barriers for each one of them. The sub-section on effectiveness of STGs is based on quantitative data analysis and reports pre and post-STG change in claim rejection rates, ALOS and proportion of claims by EHCP type. Finally, the key findings are discussed, linked with relevant literature and where applicable logical explanations have been offered.

4.1 Overview of AB PM-JAY and STG in the two regions under primary study

The qualitative analysis part was based on the primary data conducted through in-depth interviews of users of STG from the state of Madhya Pradesh (MP) and the Union Territories of Jammu and Kashmir (J&K).

Located in central India, MP is the second largest state of the country and is home to about 85 million people, as of 2022. It is one of the Empowered Action Group (EAG) states of the Nation Health Mission (NHM). The state has a total of 52 districts. The health index of the state is 36.72 and is ranked 17 out of 19 large states in the country. Union territory of Jammu and the Union Territory of Kashmir, together referred to as J&K is the northernmost region of the country. It has a population of 13.64 million in its 20 districts. As of 2019-2020, the J&K health index stands at 44.74 and is ranked sixth out of seven union territories of the country. Two districts in MP and three in J&K were visited for interviewing the STG users. A geographical representation of the two regions is given in Fig. 3 in the section on Method and Data.

4.1.1 AB PM-JAY in MP and J&K

AB PM-JAY was launched in MP in the year 2018 as Ayushman Bharat-Madhya Pradesh “Niramayam” Yojana. A total of 10.86 million families are eligible for benefits under this scheme, which constitute 74% of the state’s population. Out of this, 8.36 million families are as per the socio-economic caste census (SECC) deprivation list who are the defined beneficiaries of AB PM-JAY as per national guidelines, while the remaining are additional families who are covered by the state. About half of the eligible population have been enrolled in the scheme. A total of 977 health-care facilities are empaneled for providing health care to beneficiaries out of which 466 are private health-care providers (as of September 2022 - NHA data). The scheme is operational under Trust mode and the state has contracted three implementation
support agencies (ISA), MD India Healthcare Services TPA Pvt. Ltd, Vidal Healthcare services Pvt. Ltd. and FHPL TPA Ltd. for claim management functions.

In J&amp;K, AB PM-JAY was launched in the year 2020 as the AB PM-JAY SEHAT scheme. SEHAT stands for “Social Endeavour for Health and Telemedicine”. The scheme is universal and for all residents of J&amp;K, about 2.1 million families, irrespective of their socio-economic status are eligible to receive cover under this scheme. Out of this about 0.6 million families are as per the SECC beneficiary list of AB PM-JAY and the remaining are additional families covered by the UT. A total of 269 health-care facilities are empaneled for providing health care to beneficiaries out of which 148 are private health-care providers (as of September 2022 - NHA data). The scheme in J&amp;K is operational under insurance mode and at the time of the study IFFCO-Tokio, a private health insurance company was contracted for carrying out claim management and other related functions of the scheme. The insurance company had further contracted two TPAs - Good Health Insurance TPA Pvt. Ltd. and MD India Healthcare Services TPA Pvt. Ltd. for the claim processing. Table 2 provides a snapshot of the AB PM-JAY scheme in the two regions.

Table 2: AB PM-JAY scheme in MP and J&amp;K

<table>
<thead>
<tr>
<th>Scheme name</th>
<th>Madhya Pradesh</th>
<th>Jammu and Kashmir</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implementation Mode</td>
<td>AB PM-JAY Niramayam Yojana</td>
<td>AB PM-JAY SEHAT scheme</td>
</tr>
<tr>
<td>Insurance company</td>
<td>Trust</td>
<td>Insurance</td>
</tr>
<tr>
<td>TPA/ISA</td>
<td>MD India, Vidal Health and FHPPL</td>
<td>MD India and Good health Insurance</td>
</tr>
<tr>
<td>Total eligible beneficiaries</td>
<td>10 861 653</td>
<td>2 054 298</td>
</tr>
<tr>
<td>Eligible beneficiary families as per SECC/RSBY</td>
<td>8 357 257</td>
<td>597 801</td>
</tr>
<tr>
<td>Total health-care facilities empaneled</td>
<td>977</td>
<td>269</td>
</tr>
<tr>
<td>Private health-care facilities empaneled</td>
<td>466</td>
<td>148</td>
</tr>
</tbody>
</table>

4.1.2 Standard treatment guidelines in the two states

STGs were officially launched and rolled out on 15 August 2020 and both regions received the STG copies along-with all other states of the country. Training sessions were conducted by NHA to which representatives from SHA, TPA, ISA and EHCPs were invited. With the launch of STGs, the TMS has been modified and both regions now use the STGs for claim and pre-authorization processing. As conceptualized by NHA, the STGs are expected to guide the pre-authorization and claim processing, while EHCPs can refer to the document for clinical management of the patients. STG implementation requires it to be utilized at two levels - first at the treatment level, where EHCP and their physicians are expected to refer the STG of the treatment package that they are undertaking, and second at the pre-authorization and claim adjudication level where the TPA/ISA are required to scrutinize the claim in light of the checklist given in the STG of that treatment package.
Fig. 5 describes how the STGs are expected to be integrated into the flow of activities, both at the treatment level and at the claim processing level.

**Fig. 5. Flowchart explaining STG implementation**

The study evaluated how STGs have been adopted and used for treatment as well as claim processing in MP and J&K. At the state level, two broad groups of stakeholders are expected to utilize and implement STGs and hence are most affected by the STGs. The first user group is health-care providers, which includes the physicians, administrators and Ayushman Mitra of EHCPs and the second group is claim adjudicators which include PPD, CPD, and managers of TPA/ISA and Insurance companies. Officials of SHA were another group of stakeholders whose experience and perspectives were taken from the governance and overall implementation point of view.

### 4.2 Reach and awareness of STGs amongst EHCPs, physicians and claim adjudicators

- The knowledge about STG amongst physicians, administrators and Arogya Mitras of EHCPs was significantly higher in J&K as compared to MP.
- The SHA, Insurer, ISA and TPA in both states were well aware about STGs being integrated into TMS and are implementing the same for pre-authorization approvals and claim management.
- Efforts to percolate STGs amongst empanelled hospitals and doctors were sporadic and in both states. The method and approach for orienting doctors of empanelled hospitals or of TPA/ISA is not systematized.

We studied the penetration and awareness about STGs amongst the two main involved agencies - EHCPs and TPA/ISA. The empaneled EHCPs are the unit-level points where STGs are to be implemented for providing medical treatment to AB PM-JAY beneficiaries. Within
the EHCP, there are two main players involved in STG implementation - The treating physician and the EHCP administrators. STGs being clinical, the treating physicians become the ultimate audience to whom STGs must reach so that they can provide treatments accordingly. EHCP administration’s role involves ensuring that STGs are effectively communicated to the physicians and that facilities and support systems are available for providing treatments as per STGs. TPA/ISA is required to review and process the claims in accordance with the STG, making them instrumental in ensuring that treatments given to beneficiaries are in adherence to the STGs. For this, the doctors at the TPA/ISA (PPD and CPD) need to be well aware of STGs and the various key requirements that treatments listed under AB PM-JAY should fulfill.

4.2.1 Awareness of STGs amongst physicians of EHCPs

At the physician’s level, we observed that the reach of STG differs in MP and J&K. While in J&K almost all physicians who were interviewed reflected reasonable awareness and knowledge about STGs issued by NHA, in MP very few physicians echoed their awareness about the STGs under AB PM-JAY. When asked about STGs, most of the physicians in MP could not relate it with the STGs of PMJAY, instead related it with treatment protocols that they are aware of or use based on what they have learned from medical text books or treatment protocols issued by any other body, like an association of a specialty. When shown a sample of the STG document issued by AB PM-JAY, most physicians in MP were not able to recognize having seen such a document to date. “I don’t know about this document, but we do follow standard protocols that we made for NABH”; “Do you mean package rates?” are a few of the responses received while interviewing physicians in MP. Most of the EHCPs in MP confirmed that they had received the HBP 2.2 file which stated the mandated documents, tests and the price of the package which they referred to from time to time. While the EHCPs in MP are referring to HBP 2.2, part 2 of the STG document contains more details and explanations on how treatment for a package must be decided. Only by referring to HBP, compliance with various clinical pointers may not be ensured.

Contrary to this, the physicians in J&K, were able to confirm their awareness of STGs issued by AB PM-JAY and could identify the sample documents shown to them. The physicians were also rightly aware of the purpose of STG as a guideline for clinical management and claim adjudication. Most of the physicians in J&K have confirmed that they have seen the STGs, used them in managing patients, were able to share their experiences concerning the implementation of STGs and also provided feedback on where it is to be improved.

The self-reported survey of 98 physicians from the two states resulted in about 36% of physicians from MP and 88% of the physicians from J&K stating that they are partially or fully aware of the STG, which is in line with the findings from qualitative interviews. The proportion of physicians who said that they have a copy or have access to STGs were less than 10%, overall.

The awareness percentage does not vary with speciality of the physician, but doctors in Private EHCPs showed slightly better awareness of STGs in both regions.
4.2.2 Awareness of STG amongst administrators and AMs of EHCPs

The administrators of private EHCPs in MP and public and private EHCPs in J&K were well aware of the STGs, their purpose and expectation from the EHCP, with J&K EHCPs reflecting a deeper knowledge about STGs. The public EHCPs in MP were largely unaware of the STGs and their purpose. EHCPs that were aware also confirmed that they have received the STGs and a representative from their EHCP has participated in the meetings or training conducted in this regard. The level of awareness about STGs in Ayushman Mitra (PMAM), varied between MP and J&K. While in J&K the AMs were well aware of the STGs in their current format, those in MP were vaguely aware. The AMs in MP shared that they realized that for each package some medical documents have been made mandatory and they cannot submit the claim unless these are uploaded. However, most of them were not aware that this is due to the incorporation of STG in the TMS. When checked with the AMs on where the STG document could be found on the TMS, the AMs in MP did not have any idea on the same and stated that they refer to the HBP 2.2 which had most of the details. They also shared that they were aware of the requirements for each procedure through their years of experience and the queries raised in the past and would have to refer to the HBP Manual only for rarely performed procedures. On the other hand, the AMs in J&K was able to show us where the STGs could be downloaded from and accessed for each case. As per the AMs, they have not received any orientation or training in this regard.

4.2.3 Awareness of STG amongst TPA/ISA

In both regions, the claim processing agencies - TPA/ISA - were well aware of the STGs being rolled out under AB PM-JAY. The STGs of each package were available as Pdf documents in the system used by the Preauthorization processing doctor (PPD) and claim processing doctor (CPD). In all TPA/ISA interviews, PPD and CPD shared that they use STGs as a basis for reviewing and processing claims. The PPD and CPD reflected their knowledge about what to look for in a claim, as per STG. The Insurance Company in J&K was also aware of and actively using STG as a basis for claim processing.

To summarize, the STGs had a noticeably better reach amongst all user types in J&K with all involved parties, SHA, Insurance Company, TPA, EHCP administrators, Ayushman Mitras and physicians well informed and aware about the STGs to be followed under AB PM-JAY. In MP
the SHA and the TPA were well aware of STG while administrators and physicians at EHCPs were partially aware.

4.2.4 Efforts for awareness and encouragement of STG among care providers

To comprehend the efforts taken by each region for ensuring that STGs are accessible to physicians, we collected information from the SHA, TPA/ISA, insurance company, EHCPs, and physicians. In MP, whenever the NHA rolled out a new set of STGs, the SHA emailed the information to participating EHCPs, but the physicians were not educated or encouraged to refer to the STGs. Few of the meetings and training that SHA had with the empaneled EHCPs included STGs on the schedule, but only EHCP administrators and one or two EHCP physicians participated. Neither the SHA nor ISA scheduled a meeting or orientation on STGs specifically for reaching out to physicians. At the time of this study, the majority of the SHA team at MP had joined the organization during the past three to six months and were not aware of the initiatives carried out with regard to STG implementation.

At the EHCP level, each institution used a different strategy to communicate to physicians about STGs. Some EHCPs did not share the STGs with their physicians, while others did so via email or WhatsApp. However, no EHCP made a significant effort to distribute the STGs to physicians.

In J&K, the STGs were communicated by email, and the Insurance Company actively monitored STG implementation via their TPAs. Following the push from the Insurance Company and with the assistance of the TPA’s field team, EHCPs ensured that physicians are aware of STG. Whenever a new PMAM was hired, the TPA’s field personnel would travel to the EHCP to provide training on the TMS, including STGs. The insurance company organized training for doctors at the TPA and ISA, and they kept their understanding of STGs current through their work of processing claims. The NHA provided the insurance company with training on the STGs, and the SHA advised them of updates. The TPAs in J&K were found to have readily available printed STGs for the most prevalent procedures.

In both regions, the efforts to disseminate and percolate STGs amongst EHCPs and their physicians were sporadic without any well-defined method.
4.3 User experience with STGs and their perspective

- All user types experienced and perceived unique positives and negatives of STGs.

**Positives**
- For physicians, it served as a reference document, reduced subjectivity and provided clarity on clinical matters.
- For EHCPs it brought transparency and clarity over clinical expectations and points on which claims will be scrutinized.
- For TPA/ISA it benefited by streamlining the claim management process and helped in better documentation and record keeping.

**Negatives**
- Restrictions in treatment decisions, irrational expectations and increased paperwork as experienced by doctors.
- Increased cost of care, irrational expectations, misuse of STG for claim delay and rejections are the key negatives shared by administrators of EHCPs.
- Ambiguity in some STGs and operational issues were the limitations faced by TPAs.

In MP, due to the limited reach of AB PM-JAY’s STGs in EHCPs, there was very little experience of administrators and physicians of EHCPs on STG as an intervention for standardizing the quality of care. Most of the perspectives received were based on their general opinion about standardization of medical care and when we showed them some STG documents to get their feedback on the same. However, ISAs in MP were using STGs for claim processing and have had some relevant early experience with regard to the same. Contrary to MP, in J&K all parties have experienced STG implementation. Clinicians, policymakers, and payers view guidelines as a tool for increasing the consistency and efficiency of care, as well as for bridging the gap between what clinicians do and what scientific evidence supports.

4.3.1 Physicians’ experience and perspective

Most physicians in MP and J&K generally opined that STG as a system can be an effective measure to ensure that basic quality care is imparted to patients and uniformity of care is assured irrespective of who or where the patient is being treated. The STGs also served as a reference for junior doctors or new doctors to undertake the treatments.

In MP, while most physicians did not recall any communication on STGs being issued by AB PM-JAY, after understanding what the STG system is all about, shared their opinion about the likely effects. While the opinion varied from physician to physician, both in type and degree, the common message that they all tried to convey is that STG should only be used as a guidance document and should not be made mandatory for physicians. One of the physicians quoted - “STGs are helping in eliminating biases and may improve the care quality”. From the feedback received on a survey of 98 physicians, 73% thought that STGs are helpful and have the potential to increase the quality of care (fig. In MP the MEDCOs felt that the claim rejections had come down since they were complying with the STGs and the mandatory requirements set in the TMS. With time they have understood what is expected of them and the number of queries has come down as the doctors as well as the AMs are well aware of the requirements.
A lot of the doctors shared that they would refer to the guidelines that they were exposed to during their medical school training if in doubt.

**Fig. 7. Opinion of physicians on whether STGs of ABPMJAY is helpful in improving quality of care**

However, physicians, especially those who have used STGs, have shared limitations and areas that need improvement concerning STG implementation. Key points shared by them are explained below:

- **Over-standardization:** While most physicians agreed that a generalized guideline will help, they also shared concerns about too much standardization. In their experience, they often have to tailor the treatment plan which is in the best interest of the patient and too much standardization can reduce their ability to design and execute patient-specific treatments. And as quoted by one of the specialists - “Each case, even with same diagnosis, differ from each other. Doctors often have to customize treatments based upon many factors that are patient specific and situation specific. A standardized approach may not work in all cases. However, a general, broad-based guidelines is possible and in-fact could be beneficial, but specifics should be decided based upon each case requirements. Also, STGs should not be binding, but allow doctors to have option for modifying when required.” (sic)

Another remark in a similar line is - “Flexibility and freedom should remain with the doctor to choose (sic) best medications. For an outline or people with less clinical exposure or those who are interns or students, it’s a great initiative.”(sic)

- **Restrictiveness:** Physicians who have been using STGs stated that they sometimes felt restricted in their treatment plan and choice, due to STG. The clinical pointers for undertaking a treatment could differ from patient to patient and STG must allow this flexibility. In several cases, modification in the treatment plan is required based on new findings or how a patient is responding to treatment. However, if a patient is booked under a package, then STG makes it difficult to make modifications, as HCP worries about claim rejection. One of the examples cited by a physician - “Suppose a TURP procedure is planned because USG showed the prostate size as 80 grams. But sometime USG can
give incorrect prostate size and when during procedure, they looked through camera, the prostate size was 150 grams. Now this size prostate cannot be fixed through TURP. It needs open surgery and TURP procedure was abandoned. Now, though we have spent time and money in pre-investigation and TURP preparation, the claim will be rejected as the procedure was not performed. This is a loss to hospital” (sic).

The physicians shared that there is no defined provision for deviating from STG. Ideally, they would like to have a system where they can deviate from STG if required, by recording a clinical justification for the same, and it should be considered by the TPA.

- **Limited choice of treatments**: A type of restrictiveness, pointed out was that several other treatments are needed in several cases but are not within the scope of AB PM-JAY. This restricts them to use only those treatments that are listed in the AB PM-JAY package list, even when they feel a better treatment option could have been used. As said by one of the physicians - “In cardiology, I don’t know why they included so few treatments and tests in AB PM-JAY. There are many more which we can do if the patient requires it. I can give you names - Ivus, Rotablator, FFR, Carotid Angioplasty, Renal Angioplasty, EVAR/ TEVAR, CRTD, CTO procedures through Microcatheters and CTO wires… These are some which are required to be done in several patients. But AB PM-JAY doesn’t list it and we do this then hospital will not get reimbursed. So, we are restricted to the very few options of treatment that AB PM-JAY has in its list” (sic)

Along similar lines physicians also pointed out that there is a need for re-looking into the allocation of treatments between specialties. Several treatments are used in multiple specialties but are included only as a part of one. One of the physicians quoted - “Many diseases are included only in medical packages, though many of them are treated actually by the surgeons without any operative intervention for example like severe sepsis, acute pancreatitis, etc.; a more thorough consultation and redefining of specialties for various packages is required.” (sic) A similar comment by another physician states - “Certain packages codes like severe sepsis, high end radiology etc. have been mandatorily been made part of General Medicine but in fact are required by the other departments as well for patient treatment.”

- **Increased paper work**: Too much paper work was reported as a cause of concern by physicians. In their opinion, STGs have increased their load to maintain too many records and documentation and sometimes they find it superfluous. According to them, they had to spend more time on paper work, rather than on patients, because the AM will keep asking for the documents and notes for submitting claims. As quoted by one of the physicians - “Detailed notes for everything and every patient is required, especially as per STG. We see so many patients and do not have time to write so much of details. They should think about how much time we are wasting in documentation”

- **Irrational requirements**: A feeling of some of the STG requirements being irrational was shared by physicians. A commonly cited example of this was the length of stay. In J&K, the EHCPs were required to admit the patient for the minimum number of days which is stated as the average length of stay in the STG of the procedure the patient is admitted for. As per physicians, the length of stay varies from patient to patient and discharge decisions should be made based on the clinical condition of the patient and not by STG. As quoted by one of the physicians - “In Lap Choly (Laparoscopic Cholecystectomy),
they ask the patient to be kept for minimum three days. But several of my patients are fit to be discharged next day or maximum in two days. Why should I unnecessarily keep the patient? Even the patients do not want to stay in hospital unnecessarily”. Another physician from Orthopedic quoted - “For TKR most patients can be discharged on 3rd day, if there are no complication. But STG ask to keep patient for five to seven days. This is unnecessary strain on us and on patient”. (sic)

Another example in this context was given for the size of Gall-Stone as a precursor of conducting Cholecystectomy. As one of the physicians explained - “We have been asked that only if the stone size is of 10 mm, can the procedure be carried out, else the claim will be rejected. Now, I get patients with smaller stone sizes, but they are in pain. Even if I give them symptomatic treatment, they come back later. Also, the stone size will eventually grow, so why not allow Choly for stone of lesser size also.”

This issue was noted only in J&K and not in MP. We looked into the STGs and spoke to the TPA staff to understand more about the above experience shared by the Physicians. The STG states ALOS as a reference and does not mandate it to be treated as a minimum length of stay for claim approval. For gall stone size also, we did not find the requirement of minimum size for Cholecystectomy. When asked about the same to the TPA, they indicated that their system does not allow for readily calculating hospital-wise ALOS for every procedure. So as a practice they check for the length of stay of each patient to be matching the ALOS. On the aspect of Gall-stone size, the TPA responded that this is done to avoid unnecessary Cholecystectomy as this is one of the most frequently claimed packages. However, they generally allow for Cholecystectomy if the patient with a small stone size repeatedly complains of pain. The actions of TPA were as per the instructions they receive from their insurance company. Our understanding of the above scenario is that some of the aspects, like the length of stay, which is given as indicative in STGs are being incorrectly used as mandatory criteria by the TPA and Insurer. This has resulted in a perception of irrational requirements in the minds of physicians. This could be due to a lack of clarity on some specific aspects of STGs.

**Specialty-wise variation**

During interviews, the reluctance to use standard treatment guidelines was also observed among physicians, specifically among tertiary care specialists and those associated with Medical College hospitals. According to them, the treatment varies for each patient and they can’t think of how a standardized treatment approach could be used. However, when the sample STGs were shown to the physicians for reference, most of them agreed that the STGs seem to be basic and relevant, which in their opinion is already being done by the physicians even without referring to the STGs and they do not see any problem in implementing them.

**Public vs Private EHCP physicians**

Most of the inputs on STGs were received from physicians associated with private EHCPs. The physicians at Public EHCPs in MP did not reflect much awareness about STGs, however, there was interest amongst physicians to treat patients of AB PM-JAY. In MP, an incentive system is in place that makes the treating physician at Public EHCP eligible for certain financial incentives, for every case they treat under AB PM-JAY. In both MP as well as J&K the Public EHCP doctors stated that the STG did not include several tests that were important to treat patients and in some cases, the STG had tests that did not make sense to run. The Public EHCP doctors would
anyhow get the test done for the patients as in the case of MP other multiple schemes would be running which has larger coverage.

The physicians in public EHCPs in J&K were aware that STGs have been issued for AB PM-JAY packages. However, they reflected lesser importance to STG compared to their counterparts in private EHCPs. As per them, they continue the treatment as usual and if something is not matching with STG, the AM gets back to them and they try and fulfill whatever deficiencies are there. Overwork and lack of time were cited as a common reason for their limitation in referring to the STGs. One feedback that the doctors in Public EHCPs shared was that the STGs need revision and a feedback mechanism should be made available for the doctors to give their comments on STG improvement. Several procedures need revisions in the STGs and mandatory tests and the doctors have no place where they can provide their feedback.

4.3.2 EHCPs administration’s experience and perspective

At the time of the study, the private EHCPs in Jammu reported that they were facing problems of pending payments to a very high degree. Since the SEHAT scheme is universal, almost all patients who come to them, undertake treatment under this scheme and EHCPs do not have other sources of revenue. With the delay in payments and large pending amounts, the EHCPs find it difficult to meet the operating expenses. One EHCP claimed that they are unable to pay their visiting physicians on time thus, many visiting physicians are now showing disinterest in treating in their hospital. Another EHCP claimed that they had to delay the salary paid to their staff as their payments were pending. As informed by the SHA and the Insurance company, J&K faced a very high claim ratio of up to 170% in the past. After the change of the insurance company, they have been scrutinizing the claims with some level of stringency and have been able to reduce the claim payout ratio to about 130%. While claim payment is not the objective of this study, this situational context may have influenced the opinion of EHCPs on STG. The EHCPs in MP did not report any such concerns.

The EHCP administrators in MP were generally observed to be indifferent to the STGs, while those in J&K reported several issues and advantages. Like physicians, most EHCP administrators did agree that STG as a system is good provided some lacunae are taken care of.

**Positive experience:** Administrators of EHCPs stated that the STG has brought transparency of clinical actions between EHCPs and TPA. Now the EHCPs and the TPA/ISA have the same understanding of what is required in each case and the ambiguity is reduced. The second benefit cited by them is clarity. Compared to pre-STG time, the EHCPs are clearer on what clinical intervention and to what extent is required to be done in each case. This helps them in planning the cases and appropriately submitting the claim. The third benefit as per them is about having a reference document that they can use for justifying the query raised by TPA/ISA. One of the EHCPs quoted - “Earlier we were completely at the mercy of TPA about what they comment on our claim, but now we have STGs and we can show it to them that, see, what you are asking, where is it written in STG”. Another EHCP stated -“With STG now we and TPA have the same list of things for each case. So, this has reduced the communication gap between us. Yet another head of the EHCP in MP stated that “Post STG implementation the number of queries have come down and the rejections have also come down by 12-15% as compared to before implementing STGs. We have a few rejections which are revoked when we address the issues”.
**Negative experience:** of STG has been shared largely by EHCPs in J&K. Most private EHCPs have a feeling that often the STGs are being misrepresented by TPA and they raise queries or reject claims for very simple reasons, which are not the essence of STGs. One of the EHCPs quoted as “In one of the cases, they asked for ultrasound in Fissurectomy case. Now how can an ultrasound be done for anal fissures. Even STG doesn’t ask for it. I think just raise query without understanding the relevance just to delay our payments”. Another EHCP stated - “The doctors at TPA are not specialists. Some of them are not even MBBS, and they ask questions on clinical treatments that our specialist doctors have done.” (sic) Some EHCPs also shared their feeling that TPA and insurance company are intentionally misusing the STG for rejecting our claims or delaying payment so that they can manage their finances well. One of the EHCPs quoted - “The insurance company has been increasingly rejecting our claims for unnecessary reasons. After STG has been implemented, they are rejecting 10 to 20% of our claims. Earlier the rejection was much less”.

Administrators feel that unnecessary requirements have come up in some STGs. As stated under the section of physicians, EHCPs also quoted the requirement of minimum length of stay being made mandatory as a strain on EHCPs. In this regard, one of the EHCPs quoted - “Earlier we used to discharge patient whenever the patient is ready to discharge. Now, we have to mandatorily keep them for 3 days or 5 days as per STG. So, our beds are blocked unnecessarily. Even patient do not want to stay, but we have to insist which make them angry and dissatisfied.” Another example of unnecessary requirement as stated by an EHCP - “In one of the queries, the TPA asked us to upload the photograph of hemorrhoids. Now these are private parts of patients and clicking photograph is not always feasible.” (sic)

With these two negative experiences, most private hospitals feel that they have to do excessive efforts to ensure that their claims are cleared. They have to keep responding to queries or have to provide too many explanations to TPA to justify their case.

### 4.3.3 Perspective of claim adjudicators (TPA/ISA and insurer)

The TPA/ISA in both regions and the Insurer in J&K were in general satisfied with the STGs and had reported positive experiences in their ability to manage claims and reduce fraud. A CPD at one of the TPA quoted - “With STG, we have a clear understanding of what to look for in a claim. Now we can ensure that and can communicate with hospitals based on these requirements. Another CPD stated - “I think the ability of some providers to do fraud has reduced, though may not have been eliminated. It is not easy for anyone to create documents and proofs in line with STG if the actual treatment has not happened.”

The Insurance company in J&K stated that STGs have been very helpful to them in avoiding payments to unjustified claims. As reported by them, earlier when another insurance company was managing the scheme, the claim ratio in J&K was as high as 170%, as all claims were being passed. It was unsustainable. Now, they have been able to reduce it to 130% and a lot of it is due to the stringency of claim processing. In this regard, STGs have been very helpful. We explored the perception of the Insurance company on the aspect of STG limiting clinical freedom. As per their perception, in a large public health scheme like AB PM-JAY, it is extremely important to have a high level of standardization in clinical decisions and there should be very little room for discretion. Discretionary opportunities have the potential to be misused for commercial reasons and if not controlled with strict compliance, can render the entire scheme financially unviable.
Some other improvement areas as shared by them include:

- Clarity on some STGs needs to be improved. For example, one of the TPA stated - “Some clarifications are required in Cancer-related STGs. If multiple medicines are written in the STG but only a few of them has been administered to patient, how should we process the claim?” (sic)

- The documentation from public hospitals is often deficient. However, they usually process the claim if minor deficiencies in documents are there as they do not have any reason to suspect fraud in a Government facility.

- TPAs also pointed out that there is a difference in rates stated in STG and HBP 2.2. The HBP needs to be reconciled with the STG otherwise it confuses TPA and the hospitals.

- Some operational difficulties were also shared by TPA. As of now, the STGs are available as a pdf attachment in their system and the TPA doctor has to download the same for reviewing the case. This consumes time, instead, a system where key STG requirements are available as a pop-up whenever they are reviewing a claim, the process can be made less time-consuming.

### 4.3.4 Overall experience and perspective of users of STGs

Based on experiences shared by involved parties, it appears that the STGs are effective in the following ways:

- Increased assurance that AB PM-JAY beneficiaries will receive a basic standard of care irrespective of health-care provider.

- Bringing transparency and clarity to hospitals as well as TPA on clinical expectations under each treatment package.

- Works as a guidance document for the younger treating doctors, TPA/ISA, SHA as well medical auditors.

- Better claim management as claims can now be reviewed based on relevant clinical evidence generated as a result of complying with STGs.

- Better control on fraud due to the need for essential documents and records for claim processing.

Negative effects of STGs or areas where effectiveness could not be witnessed are:

- STGs are being seen and used mostly as a claim processing requirement and the focus on using STGs for maintaining or improving clinical quality was low. There is a need to sensitize the implementers of STGs that one of the objectives of STG is also the clinical quality and this must be kept into consideration while implementing STGs.

- The feeling of restrictiveness due to STG, by the physicians, is a cause of concern and needs to be addressed.

- There is a perception amongst EHCP that STGs can or may be misrepresented by the TPA and the insurance company for delaying or avoiding claim payment.
• There is a perception amongst care providers that certain requirements in some STGs are irrational and irrelevant

4.4 Effect of STGs on claim processing and patient care

To explore the effects that STGs could have had on claim processing and patient care, we compared indicative measures between pre- and post-STG periods. The data from Union Territory from J&K and five states - Uttar Pradesh, Kerala, Tripura, Jharkhand and Chhattisgarh were used. However, there were limitations in the availability of data, as the data received was grouped and was not available at the individual patient level. This limited our analysis to a few measures that can be calculated at the aggregate level from the grouped data. It also limited us to do statistical analysis.

Key findings from data analysis are stated in the box:

**Post implementation of STGs,**

- Claim rejection rate reduced in both public and private hospitals and across most specialities
- Average Length of Stay of patients increased in public and private hospitals and in most specialities
- Proportion of claims submitted by private hospitals has reduced significantly while that of public hospitals have increased

4.4.1 Claim rejection rate

As an indication of the effect of STG on claim processing, we assessed the change in claim rejection rate from pre-STG to post-STG period. The claim rejection rate was calculated as a percentage of the claimed amount not paid. The comparison of claim rejection rate as per EHCP type is given in Table 3 and as per specialities is given in Table 4.

The data shows that the claim rejection rate dropped by a remarkable 5% after STG implementation. Public EHCPs showed highest reduction in claim rejection at 9.25%, while private EHCPs’ rejection rate was reduced by 2.57%. Within private EHCPs, only private-for-profit EHCPs showed the reduction while non-for-profit EHCP rejection slightly increased (Table 3).

**Table 3: Claim amount rejection as per EHCP type – pre- and post-STG implementation**

<table>
<thead>
<tr>
<th>EHCP Type</th>
<th>Percentage of claimed amount rejected</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-STG</td>
</tr>
<tr>
<td>All EHCPs</td>
<td>13.48%</td>
</tr>
<tr>
<td>Public</td>
<td>18.65%</td>
</tr>
<tr>
<td>Private (all)</td>
<td>8.67%</td>
</tr>
<tr>
<td>Private not for profit</td>
<td>5.62%</td>
</tr>
<tr>
<td>Private for-profit</td>
<td>9.53%</td>
</tr>
</tbody>
</table>
Speciality-wise claim rejection rates of specialities that are commonly used also show that in most specialities the claim rejection rates have reduced after STG implementation. Compared to surgical, medical discipline specialities such as general medicine, pediatrics medical, neonatal, medical oncology and cardiology showed a significant reduction in claim rejection rate. Obstetrics and gynecology, pediatric surgery, radiation oncology, neurosurgery and oral and maxillofacial surgery are the few specialities that showed an increase in rejection rates.

**Table 4: Speciality-wise rejection rate for commonly used specialities**

<table>
<thead>
<tr>
<th>Specialities</th>
<th>Pre-STG</th>
<th>Post-STG</th>
</tr>
</thead>
<tbody>
<tr>
<td>General medicine</td>
<td>21.35%</td>
<td>13.67%</td>
</tr>
<tr>
<td>General surgical</td>
<td>8.05%</td>
<td>6.38%</td>
</tr>
<tr>
<td>Obstetrics and gynecology</td>
<td>2.90%</td>
<td>4.70%</td>
</tr>
<tr>
<td>Orthopedics</td>
<td>11.69%</td>
<td>5.34%</td>
</tr>
<tr>
<td>Ophthalmology</td>
<td>2.93%</td>
<td>2.06%</td>
</tr>
<tr>
<td>Otorhinolaryngology</td>
<td>14.62%</td>
<td>6.55%</td>
</tr>
<tr>
<td>Pediatric medical</td>
<td>14.42%</td>
<td>8.18%</td>
</tr>
<tr>
<td>Pediatric surgery</td>
<td>10.52%</td>
<td>12.36%</td>
</tr>
<tr>
<td>Neonatal</td>
<td>17.05%</td>
<td>4.22%</td>
</tr>
<tr>
<td>Interventional neuroradiology</td>
<td>12.70%</td>
<td>21.66%</td>
</tr>
<tr>
<td>Surgical oncology</td>
<td>11.02%</td>
<td>5.14%</td>
</tr>
<tr>
<td>Radiation oncology</td>
<td>15.43%</td>
<td>21.49%</td>
</tr>
<tr>
<td>Medical oncology</td>
<td>16.04%</td>
<td>1.70%</td>
</tr>
<tr>
<td>Oral and maxillofacial surgery</td>
<td>9.33%</td>
<td>11.77%</td>
</tr>
<tr>
<td>Neurosurgery</td>
<td>10.80%</td>
<td>11.17%</td>
</tr>
<tr>
<td>Plastic and reconstructive surgery</td>
<td>13.81%</td>
<td>9.31%</td>
</tr>
<tr>
<td>Urology</td>
<td>6.39%</td>
<td>5%</td>
</tr>
<tr>
<td>Cardio thoracic vascular surgery (CTVS)</td>
<td>9.50%</td>
<td>2.56%</td>
</tr>
<tr>
<td>Cardiology</td>
<td>15.11%</td>
<td>3.61%</td>
</tr>
</tbody>
</table>
4.4.2 Average length of stay

To understand the change in effort and resources being used by EHCPs, for treating patients we assessed the change in Average length of stay (ALOS) between pre- and post-STG period. The ALOS as per EHCP type for pre- and post-STG period is given in Table 5 and as per specialities is given in Table 6.

Table 5: ALOS as per EHCP type for pre- and post-STG period

<table>
<thead>
<tr>
<th>EHCP type</th>
<th>Pre-STG</th>
<th>Post-STG</th>
</tr>
</thead>
<tbody>
<tr>
<td>All EHCPs</td>
<td>2.77</td>
<td>4.24</td>
</tr>
<tr>
<td>Public EHCPs</td>
<td>3.3</td>
<td>5.72</td>
</tr>
<tr>
<td>All Private EHCPs</td>
<td>2.14</td>
<td>3.47</td>
</tr>
<tr>
<td>Private not-for-profit EHCPs</td>
<td>3.46</td>
<td>4.83</td>
</tr>
<tr>
<td>Private for-profit EHCPs</td>
<td>1.79</td>
<td>3.17</td>
</tr>
</tbody>
</table>

Post STG, a remarkable increase in ALOS is seen on an overall basis, with Public EHCPs’ ALOS increasing by 73% and private for-profit EHCPs ALOS increasing by 77%.

Table 6: Speciality-wise ALOS – pre- and post-STG

<table>
<thead>
<tr>
<th>Specialities</th>
<th>Pre-STG</th>
<th>Post-STG</th>
</tr>
</thead>
<tbody>
<tr>
<td>General medicine</td>
<td>1.86</td>
<td>6.09</td>
</tr>
<tr>
<td>General surgical</td>
<td>1.05</td>
<td>4.81</td>
</tr>
<tr>
<td>Obstetrics and gynecology</td>
<td>2.28</td>
<td>3.67</td>
</tr>
<tr>
<td>Orthopaedics</td>
<td>5.26</td>
<td>5.51</td>
</tr>
<tr>
<td>Ophthalmology</td>
<td>0.85</td>
<td>1.56</td>
</tr>
<tr>
<td>Otorhinolaryngology</td>
<td>5.18</td>
<td>4.99</td>
</tr>
<tr>
<td>Paediatric medical</td>
<td>5.45</td>
<td>5.82</td>
</tr>
<tr>
<td>Paediatric surgery</td>
<td>5.21</td>
<td>6.23</td>
</tr>
<tr>
<td>Neonatal</td>
<td>5.93</td>
<td>6.58</td>
</tr>
<tr>
<td>Surgical Oncology</td>
<td>9.93</td>
<td>7.67</td>
</tr>
<tr>
<td>Medical Oncology</td>
<td>1.2</td>
<td>4.63</td>
</tr>
<tr>
<td>Neurosurgery</td>
<td>10.45</td>
<td>10.18</td>
</tr>
<tr>
<td>Urology</td>
<td>5.27</td>
<td>3.74</td>
</tr>
<tr>
<td>Cardio Thoracic Vascular Surgery (CTVS)</td>
<td>9.44</td>
<td>10.91</td>
</tr>
<tr>
<td>Cardiology</td>
<td>3.13</td>
<td>3.14</td>
</tr>
</tbody>
</table>

The ALOS has increased in most specialities in post STG period, with General surgery, General medicine and Medical Oncology showing the steepest increase in ALOS. Surgical Oncology, Urology, Otorhinolaryngology and Neurosurgery were the only specialities where marginal reductions in ALOS were noted.
However, as understood from interviews of physicians and administrators of EHCPs in J&K, there could be a possibility of unnecessary stay just to comply with STG for avoiding the chance of claim rejection.

4.4.3 Public and private EHCP participation in AB PM-JAY

To understand how STGs have impacted the participation of public and private EHCP in AB PM-JAY, we assessed the change in the quantum of work being shared by type of EHCP from pre-STG to post-STG period, for all 6 states combined. To estimate the quantum of treatment we calculated the number of claims submitted by each EHCP type, as a percentage of the total claim submitted by all EHCPs. Table 7 provides the comparison.

Table 7: Proportion of claims by EHCP type

<table>
<thead>
<tr>
<th>EHCP type</th>
<th>Pre-STG</th>
<th>Post-STG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public EHCPs</td>
<td>45%</td>
<td>63%</td>
</tr>
<tr>
<td>All Private EHCPs</td>
<td>55%</td>
<td>37%</td>
</tr>
<tr>
<td>Private not-for-profit EHCPs</td>
<td>12%</td>
<td>8%</td>
</tr>
<tr>
<td>Private for-profit EHCPs</td>
<td>43%</td>
<td>29%</td>
</tr>
</tbody>
</table>

While the absolute claim amount has increased for both public and private EHCPs, the data indicates that the proportion of claims being submitted by public EHCPs has significantly increased while that by private EHCPs has decreased. The proportion of claims by private for-profit EHCPs has reduced even more.

In addition to the unavailability of individual-level data, a major limitation of the findings stated here is the absence of a control group of states with which the change can be compared. Since the STGs were rolled out across the country, controls were not available. Due to this other systematic or unsystematic factors could have contributed to the reduction in claim rejection rate, increase in ALOS and change in the proportion of claims by EHCP type.

4.4.4 Adoption, implementation and maintenance

This section describes the extent to which STGs have been adopted and implemented by the involved agencies and the aspects that affect the maintenance of this system.

As described in an earlier section, in MP the adoption of STG in clinical practice is indirect and is passively implemented due to the claim management process. The general practice that we found in EHCPs of MP, is that at the time of admission of an AB PM-JAY beneficiary, the AM informs the treating physician about the documents and records that are required for that case for submitting claims. As stated by one of the AM - “I print a list of documents for every case and attach it to the file, so that doctors know about the key documents and notes that are required”. Additionally, during claim submission, if the AM discovers that any mandatory document is not available, they go back to the physicians and request them to complete the records. For AMs, uploading these documents is essential without which the TMS will not allow them to submit claims. At the TPA level, these documents are verified during claim processing and if a document is inappropriate or inadequate, a query is raised.
to which EHCP is required to respond. This system of claim management has resulted in the indirect implementation of STG in MP EHCPs.

Contrary to this the J&K EHCPs and physicians exhibit active adoption of STGs. While the claim management process influences the EHCPs for using STGs, there is a more active implementation at the EHCP level.

At TPA/ISA level, in both regions, the STGs have been integrated and implemented for the claim processing. The doctors at TPA actively scrutinize the claims using STG as a basis. However, the TPA/ISA reported that they do not have an information system to generate compliance data or to identify specific STG requirements with their compliance level. If such MIS is available, they will be able to better focus on those requirements that are prone to non-compliance.

4.4.5 Barriers and enablers to the adoption of STGs

As reflected from the interviews, we classified various expectations of the users as enablers or barriers in the adoption and implementation of STGs by each type. (Table 8)

Table 8: Enablers and Barriers to STGs implementation

<table>
<thead>
<tr>
<th>User group</th>
<th>Enablers</th>
<th>Barriers</th>
</tr>
</thead>
</table>
| Physicians          | • STGs are broad in scope, evidence-based and updated with the latest medical practice.  
                     • The ability of guidelines to serve as a reference document to make appropriate clinical decisions | • STGs restrict their clinical freedom or autonomy in decision making  
                                                                  • Perception of Irrational or irrelevant content in STGs  
                                                                  • STGs not updated or not factoring local requirements  
                                                                  • Increased documentation workload |
| Administrators of EH-CPs | • The clarity over clinical requirements for each case  
                          • Transparency over the points on which claims will be scrutinized | • Perception of STGs being used unfairly for rejecting the claim or delaying payment  
                                                                 • Complying with STGs leads to an increase in the cost of care provision  
                                                                 • STG increasing the workload for getting a claim processed |
| TPA/ISA/Insurer     | • Clarity over points to be scrutinized in a claim  
                     • Higher level of objectivity in guidelines and no or less flexibility or room for discretion | • Ambiguity and subjectivity in STGs  
                                                                 • STGs are too flexible or allow discretion |
4.4.6 Maintenance and sustainability of STGs

For the effective implementation and maintenance of STGs, the uptake of STGs must be high amongst each user group. Voluntary uptake is also important to ensure fidelity in implementation. As exemplified in earlier sections, a system like STG is prone to be misused by one or more parties for their interest. The likelihood of the STG system sustaining in the long term depends upon how each involved party perceives the value of having this system. The sustainability of STGs will require the strengthening of enablers and the elimination of barriers. As can be seen from Table 9 enablers and barriers differ for each user group and in one factor, it contradicts. Whether a factor works as an enabler or as a barrier depends upon how is it affecting the interest of the user. Fig. 6 represents exclusive, overlapping, and contradicting enablers between user groups.

![Overlapping and contradicting elements between users of STG](image)

**Contradicting element:** The level of flexibility and discretion that STG should accord in clinical decisions is an element of contradiction between the physicians and claim adjudicators. Physicians expect the STGs to be broad and flexible. This helps them in customizing the treatment according to the unique case requirement, within the overall guidance of the STG. A highly specific and non-flexible STG restricts the ability of physicians in exercising their professional judgment and choice of treatment from case to case based on the patients’ needs that would otherwise be available to them. On the other hand, the claim adjudicators - TPA and insurer - will expect STG to be specific and less flexible. This helps them in avoiding subjectivity in claim processing and taking decisions for approval or rejection of claims. Flexible and broad STGs reduce the claim processing agencies’ ability to control the behavior of providers and thus their ability to control opportunities for fraud.

The STG requirements that are integrated into the TMS are being complied with due to scrutiny at the claim processing level. Those that are yet to be integrated, such as minimum qualifications of the physician and minimum infrastructure requirement are not influencing the clinical treatment.
The above scenarios indicate that claim processing using STG is a key factor in determining compliance to STG requirements. However, an unwanted effect of this is the restrictions it puts on clinical and therapeutic decisions, which as per STG should be the prerogative of the physicians. Since STGs rolled out NHA doesn’t intend it to influence clinical judgment, this contradiction needs to be addressed.

4.4.7 Effect on fraud control

A key expectation from STG is to bring fraudulent practices by care providers under control. There can be several types of frauds in health insurance that can be grouped as, claim fraud, application fraud, eligibility fraud and identity fraud. STG is specifically expected to address claim frauds, in which an empaneled care provider submits the claim for a case in which the no treatment or under-treatment has been given. Unlike poor quality care, in fraud, the compromise in treatment is intentionally done for maximizing financial benefit of self.

As per the experience shared by TPA, implementation of STG has severely reduced the ability of care providers to indulge in fraudulent behavior. STG-based claim processing requires submission of documentary evidence of medical procedures that have been carried out, as per the STG, making it difficult for the care providers to avoid the required medical procedures. However, with the absence of any mechanism to verify the authenticity of medical documents, the possibility of fake medical documents being submitted cannot be ruled out.

While STG has noticeably improved medical documentation and record-keeping systems, its effect on fraud control is only indicative. The research team could not access the data on fraud triggers maintained by “National Anti-Fraud Unit (NAFU)”, due to high confidentiality, the trend of fraud triggers pre and post-STG was not compared. It is suggested that the trend of claim related fraud be monitored to examine how much impact STG is having on fraud control.

Discussion

In both the regions studied, there was an absence of a systematic approach to orient and encourage EHCPs and their physicians for STG implementation. Still, there was a stark difference in the level of awareness about STGs between care providers in MP and J&amp;K. This is suggestive of external environmental factors that could be at play. J&amp;K under insurance mode and having a recent experience of high claim ratio seems to have been using STGs rigorously for scrutinizing claims and deciding outcomes. Stringent verification appears to have resulted in EHCPs being over-cautious in meeting STG requirements and as a result, the administrators and ultimately physicians appear to have been compelled to make themselves aware of the STGs and ensure compliance. While this has resulted in increased awareness and compliance, it is primarily due to compulsion and raises concern over fidelity in long-term, as contextual factors have been identified as significant in determining the appropriate implementation of treatment guidelines.28

The study observed differences in the interpretation of STGs by care providers and claim adjudicators. This could either be due to lack of clarity or misinterpretation, factors that have been identified in a few systematic studies as a barrier to the effective implementation of STGs.22,28 There is no defined system or independent body to clarify interpretation, in the absence of which, the differences manifest in form of dissatisfaction or conflict. A relevant
point to note here is that the objective of STG as outlined in the STG manual was to guide claim processing and not to influence clinical decision-making. However, in practice it was observed that the STG-based pre-auth and claim approvals are casting a major influence on the clinical decision-making of physicians.

Key concerns raised by physicians concerning STGs are restrictiveness in autonomy for clinical decision-making, irrational requirements and increased workload. Restrictiveness, actual or perceived, in the clinical decision, has been reported as a significant barrier to adoption or adherence of STG by physicians, in various other studies. A study in the Indian context identified “fear of losing physician's autonomy” as a major deterrent in physicians voluntarily adopting STGs. Another study focused on mapping physicians’ interests reported that most physicians are averse to accepting any change in the system that limits their autonomy in making clinical guidelines. Irrational requirements as a deterrent to adhere to STGs have also been reported in the literature. Concerns over increased documentation workload due to STG as a barrier to implementation seem logical in most health-care facilities in India, given the high amount of workload that is usually seen. Schemes like AB PM-JAY have the potential to significantly increase the number of patients accessing treatment, while the number of health-care professionals remains scarce. The overwork situation is even more pronounced in public EHCPs. Thus, all three concerns identified through qualitative interviews of physicians look reasonable.

Reduction in the proportion of claims by private EHCPs after implementation of STGs is a concerning issue and needs to be monitored over time. In qualitative interviews, concerns about an increase in cost for complying with STG have been raised by administrators of EHCPs. There can be two aspects to this. First, in absence of STGs, EHCPs may have had the opportunity to provide clinical care at as less cost as possible, which could also mean compromise on clinical quality. Second, as has been raised by several administrators and physicians, some irrational requirements, such as mandating ALOS for each patient have been enforced due to the claim management process, which could have added cost to EHCPs, without adding value to clinical quality. While compromise in clinical quality for curtailing cost cannot be allowed, the cost incurred due to the second aspect needs to be curtailed.

Another concern raised by EHCP administrators is the perception of insurer misusing the STGs for claim rejection or payment delay. The trust deficit is likely due to somewhat contradicting interests of EHCPs and insurer, and is an external macro factor. As suggested in a study on micro, meso and macro barriers, factors that are external to STGs are also crucial in determining how well the STGs are implemented.

Overall reduction in rejection rate is indicative of improvement in medical record documentation. With implementation of STG, for each treatment package, specific medical documents have been listed, which is mandatory for claiming EHCP to upload, without which the system doesn’t allow for the claim submission process to be completed. This has compelled the EHCPs to furnish necessary documents and evidence for submitting claims, indirectly requiring them to carry out medical procedures as per STG. With all documents in place, the claim rejection rate is expectedly reduced.

The reduction in claim rejection rate of Public EHCP is remarkable. Pre-STG the claim rejection rate of Public EHCPs was noticeably higher, which could be due to inadequate submission of claim documents. With STGs mandating document submission, this lacuna would have
got addressed and an improvement in the rate of claim approval is seen. In our qualitative interviews, a couple of public EHCPs did mention that they have witnessed a significant reduction in rejection rates, post-STG implementation.

An increase in ALOS across the board after STG implementation is a noteworthy finding. In the pre-STG period reference for treatment-specific reference length of stay was not available. The need for being cost-efficient, especially in private EHCPs, could be a reason for lower ALOS in the pre-STG period. The EHCPs commonly have complaints that the package rates are low and they need to see if this will be viable in the long run. With the implementation of STGs a reference for the optimal length of stay was available for each treatment package. The reference could have influenced the length of stay of each patient in the hospital. In qualitative interviews, we observed that TPAs have used the ALOS referred to in STG as one of the bases for deciding claim settlement. For example, if the ALOS for a procedure stated 3 days and the patient was discharged in 2 days the case was rejected. This could have further influenced EHCPs to match the length of stay of the patients to what is stated in STG. Several physicians and administrators of EHCPs complained that they are being compelled to unnecessarily hospitalize the patient just to match the ALOS. This is detrimental to the quality of care, as by unnecessarily staying in hospital the patient is exposed to the possibility of health-care-associated infections. Patient satisfaction also suffers, when they realize that their stay is unnecessary.

The findings on enablers and barriers to uptake of STG by each user group indicate that at least one-factor conflicts between care providers and claim adjudicators. While high objectivity and less flexibility in STGs serve the need of claim adjudicator well, it acts as a barrier for physicians.

In both regions, systematic efforts to disseminate STG and encourage health-care professionals to use the guidelines were found lacking. However, due to the integration of STG into TMS, adherence to STGs is indirectly mandated. No such system for implementing STGs has been reported elsewhere and long-term implications of this need to be observed. Claim scrutiny enforcing compliance to STG appears to be compulsive rather than voluntary. The fidelity of STG compliance is to be examined. This can be done through a robust medical audit of a random sample of cases aimed at measuring the level of compliance with STGs. Past studies on the implementation of STGs have recommended that a well-drawn strategy with detailed instruction is essential to implement STGs.\textsuperscript{25,26}
5 Conclusion and recommendations

5.1 Conclusion

STGs issued by AB PM-JAY are being used as a checklist for scrutinizing clinical components of claims and deciding claim processing outcomes. This in turn has compelled EHCPs to comply with the clinical requirements outlined in STG documents. There was an absence of a systematic approach to directly orient and encourage physicians for STG implementation. Any system or platform to engage the users of STGs for incorporating their feedback was also lacking. Due to this, the implementation of STG at the care provider level appears to be forced in nature. The level of awareness and compliance to STG by care providers is likely to be determined by the level of stringency with which STGs are used for the claim processing.

There are specific expectations that are acting as enablers or barriers for different users of STGs. Unambiguity and transparency in STGs are common expectations by all users, less documentation intensive and rationality are expected by physicians and administrators of EHCPs, while administrators of EHCPs also expect STGs to be cost-effective in implementation. Physicians also expect STGs to be flexible and not limit their autonomy in clinical decisions, which contradicts the claim adjudicators who expect STGs to be firm and not have much room for discretion.

The contradiction is possibly resulting in differences between care providers and claim adjudicators, like in the interpretation of some specific elements of STGs. There is no defined system or independent body to resolve differences or clarify interpretation, in the absence of which, the differences manifest in form of dissatisfaction or occasional conflicts.

Reduction in claim rejection rate post-STG implementation indicates improved medical documentation and record keeping, which is a positive effect of STG. STG-based claim scrutiny could have likely restricted the ability of certain EHCPs to indulge in fraud or abuse of the AB PM-JAY scheme.

The increase in ALOS post-STG implementation indicates that more resources are being used for treating patients. However, as indicated by several EHCPs, some part of the increase could also be unnecessary and result in a compulsion on them to match the hospitalization days of each patient with the ALOS stated in STG. Unnecessary stays can lead to reduced patient satisfaction and could be detrimental to patient safety as it unnecessarily increases their exposure to health-care-associated infection.

While there is an increase in the number of claims in absolute terms, the proportion of claims by private EHCPs has markedly reduced, the reason for which needs further exploration.
In absence of requisite individual patient-level data effect on clinical care outcomes and claim, processing efficiency could not be assessed.

While there is an increase in number of claims in absolute terms, proportion of claims by private EHCPs have markedly reduced, the reason for which need further exploration.

In absence of requisite individual patient level data effect on clinical care outcomes and claim processing efficiency could not be assessed.

### 5.2 Recommendations

The benefits of using standard and evidence-based guidelines for treatment are well recognized globally and there is a clear movement in most countries to adopt and promote STG-based medical care. The STG system established under PMJAY is a move in the right direction and this study recommends that it must be continued and further strengthened by gradually addressing the demerits.

**a) Clarifying the role of STGs in clinical decision-making:** The STG documents and the manual booklet states that STGs doesn’t provide any guidance on clinical and therapeutic management of patient and hospitals and physicians can refer to other relevant material and use their professional judgment for clinical management of patients. However, in practice, due to claim approval subjected to compliance to STG, the EHCPs and physicians are being indirectly compelled to use STG as a basis for the therapeutic management of patients. This is resulting in an incongruency and needs to be reconciled, by clarifying the purpose of STG to care providers and claim adjudicators.

A well-recognized purpose of STG is to assist Medical Practitioners in making decisions for specific clinical episodes.\(^{11}\) It is recommended that the STGs of AB PM-JAY recognize this and encourage care providers to use it to support clinical decision-making.

The TPA/ISA and Insurance company who adjudicate the claim, need to be sensitized about the fact that STGs are not prescriptive but only a reference for physicians and justified deviation from the guidelines should not be a reason for rejection of claims.

**b) An independent body to clarify STG interpretation:** Treatment guidelines can often have interpretational differences, and the same was observed in this study. Since care providers and claim adjudicators have partly conflicting interests, the interpretational differences between them are difficult to be resolved mutually without leading to dissatisfaction. An independent body or a system for resolving differences by offering correct interpretation could be useful to avoid conflicts and dissatisfaction. Such a body can also issue clarifications on matters that are frequent or common.

**c) Systematic strengthening STGs:** A system for periodic updating of STGs need to be there in place, not only incorporating the new developments in medical science, but also to factor in the clinical feedback resulting from implementing STGs. Reducing ambiguity, if any, in the contents of STGs should be a part of the updating process. For this, a platform for engaging administrators and physicians of EHCPs and CPD, PPD of TPA and ISA can be created for discussing and clarifying doubts and taking their
feedback for improvement of STGs.

d) System for recognizing deviations from STG: Conceptually, the STGs under AB PM-JAY are not binding on physicians; but, in practice, physicians experienced or feared clinical decision-making restrictions. This must be addressed for patients to receive treatment based on their specific clinical needs. A mechanism that allows physicians to deviate from the STG, if necessary, with clinical justification must be developed. In the early phases of the STG, such a system will be crucial, as it is difficult for the STG to account for the country’s different requirements. The agencies that handle claims must consider clinically justified deviations from STG and process claims accordingly. As the STG documents become more robust, exhaustive, and developed, the need for deviation should diminish.

e) Tracking deviations: The data on the type and frequency of deviations that are happening in each STG should be tracked and analyzed to understand specific modifications or incorporations required in STG. The data will also serve as feedback on STG compliance that can be used to monitor and improve implementation effectiveness. In addition, the data on deviations can also help in finetuning the algorithm of groupers for DRGs and the template for the costing of medical procedures.

f) Strategy to encourage care providers: While claim processing agencies - TPAs and insurance company seems to have adopted STG well for claim management functions, the study recommends that dedicated efforts must be made to onboard the EHCPs and physicians. This is essential as, at the most unit level, it is the treating physician who will implement STG. Some of the suggestions in this regard are:

- A well-planned system and approach to reach out to all physicians and administrators of EHCPs for creating awareness and encouraging them to implement STG. There could be regular updates that go to all AB PM-JAY treating doctors on the latest STGs under their specialty.

- Established implementation frameworks such as CFIR or PARIHS should be used to develop plans and instructions for the appropriate implementation of STGs.

- Organizing periodic orientation sessions, CME, or meetings with EHCPs, physicians, and TPA doctors for clarifying STG requirements and doubts, if any alongside training.

- Making the guidelines easily accessible to physicians. The STGs can be published as booklets that are readily available to the physicians or even through an app where the physicians have access to the latest updated STGs.

- A system and platform for engaging care providers - physicians and administrators of EHCPs - can be created to capture their feedback on specific improvements required in STGs. These can be taken into consideration, depending upon their merit, relevance, and frequency, while updating STGs. Such a platform can be made comprehensive by extending it to the doctors at TPAs and ISAs.

g) Strengthening enablers and eliminating barriers: The study identified factors that act as enablers or barriers for each user type involved in STG implementation. It is
recommended that enablers be strengthened and barriers are eliminated. A challenge in this would be to address the factor that conflicts between care providers and claim adjudicators. Striking a balance could help address the challenge.

h) Monitoring variance in clinical quality: A key objective of STG is to standardize clinical care, which should ideally result in a reduction of variation in measures indicative of clinical outcomes. It is recommended that key clinical quality measures are monitored for variation to assess how well this objective is being met. As an illustration, some of the measures that can be tracked and monitored are (all measures to be treatment/package-specific):

- Average length of stay
- Re-admission rate
- Patient satisfaction with clinical outcome and service quality

i) Monitoring variance in claim processing: Another key objective of STG is to bring objectivity and transparency to claim and pre-authorization processing. It is recommended that key indicators of claim and pre-authorization processing are monitored for variance. For example:

- Turn-around time for Pre-authorization and claim approval
- Percentage of claims where a query is raised
- Variation in query raised
- Variation in reasons for rejection

All measures should be treatment package specific.

j) Future study: As explained in the limitations, this study explored the very early experience of the users of STG on its implementation, which most likely will evolve. As more EHCPs and physicians use STGs and a greater number of cases are treated using STGs additional experiences will be created. The benefits and concerns identified as of now may change and newer benefits and concerns may be realized. Accordingly, the strategy for the purposeful sustainability of STGs will need modifications. To ensure that policy and strategy are time relevant, it is recommended that a similar study be conducted in 3 to 5 years. The future study should be broad-based, covering a greater number of states and should also explore the effects of factors such as Trust or Insurance mode and EHCP type. In addition, the reduction of the proportion of claims by private EHCPs needs tracking. A study to assess the impact of STG on the cost of care should be done to understand how it might be affecting the private EHCPs business.

5.3 Limitations

The following limitations of the study must be considered while referring to the conclusion and recommendations:

1. Primary data on experiences and perspective of users of STG were collected from only two regions and was not randomly selected. Out of them, in one region the awareness about AB PM-JAY STGs amongst health-care providers was very limited and actual experience of STG implementation was largely received from one region. Thus, the
findings presented in this study may not be generalized but referred to only as indicative. A study incorporating more states will be required to have a nationwide generalized finding of STGs effectiveness.

2. The STGs were recently rolled out in a phased manner. Several EHCPs and physicians had very little experience in using STGs. With time, the system and users are likely to adapt and find ways to mitigate the current issues and concerns. Some of the findings of the study may not be relevant in the future and longitudinal studies will be required.

3. One factor that could impact the extent and nature of STG implementation is the mode (Trust or Insurance) in which the state is implementing AB PM-JAY. Hypothetically, compared to a state in Trust mode, the insurance mode state should exhibit a higher degree of stringency in STG compliance, thus further restricting the flexibility of care providers, to keep financial risks low. In our study also, we found J&K, operating under the insurance model, using STG with a higher level of stringency in claim management, compared to MP, which is in Trust mode. However, since the comparison is only between one state on each side, the study refrains from making any conclusion in this regard.
Annexure I - Interview guide for hospitals

A. Hospital details

<table>
<thead>
<tr>
<th>Hospital Name:</th>
<th>Bed Strength:</th>
</tr>
</thead>
<tbody>
<tr>
<td>State:</td>
<td>District:</td>
</tr>
</tbody>
</table>

Specialties STG has been applied for:

Public/Pvt:

If Accreditations available:

B. Respondent details

<table>
<thead>
<tr>
<th>Name:</th>
<th>Designation</th>
</tr>
</thead>
</table>

Date of interview

Guiding questions based on the Objectives and the RE-AIM Framework:

1. Guiding questions for hospital to evaluate the extent of adoption of the STGS by AB PM-JAY empanelled hospitals and other users.

1. When did your hospital decide to implement the STGs?

2. What was the purpose for adopting the STGs in your hospital?

3. What is the process you followed to implement STGs?

4. How did you get access to the STGs?

5. Did you face any resistance from the staff with regards to the uptake of the STGs? If yes, How did you deal with it?

6. What are the various components of the STGs?

7. What were the opinions of doctors and other medical staff with regards to the adoption of the STGs?

8. Did the patient care service improve because of the implementation and adoption of STGs?

9. In your opinion how has implementing STG’s impacted your hospital?

10. What are the benefits of adopting these STGs?

11. Do you think quality of care has improved with this? If not, why?

2. Guiding questions for hospitals to review the STG implementation process and Identify Impediments faced with regard to the same.
1. What was the process followed for the implementation of STGs in your hospital?
2. Was there adequate training provided with regards to the STGs implementation?
3. What were the additional requirements that you had to put in place so as to implement the STGs successfully?
4. Are the STGs readily available for the doctors and medical staff?
5. Was your hospital able to get the doctors with the specified qualification, as stated in the STG’s?
6. Do you organise internal training? If yes how often? How are new staff joining, introduced to STGs?
7. How often have they visited the online training videos and modules.
8. Did you face any difficulties in the process of implementation? If yes then please elaborate.
9. How often have you had to deviate from the STGs?
10. Was the upload on the software smooth?
11. Did you face any technical difficulties or any other impediments
12. What are the other challenges that you face with regards to the implementation?
13. What are the positives of the process followed for the implementation?
14. What problems do you encounter on a day to day basis that need to be improved?
15. What are your views on the approval process and monitoring from the SHA/TPA’s?
16. If this had to be done differently what are the changes in the process that you would recommend?

3. Guiding questions to evaluate the effect of STG implementation on the claims management processes including fraud control. (Effectiveness)
1. How are deviations noted and what actions are taken?
2. How often are there claim rejections because of deviation?
3. What are the difficulties you faced in adding this to your tasks?
4. Has this STG implementation made your work tougher or easier?
5. How did you organize and prepare for this implementation?
6. What problems do you encounter on a day to day basis when monitoring the implementation?
7. What are the most common complaints you here with regards to the STG implementation.
8. Do you think this has brought down fraudulent behaviour among EHCPs?
9. Do you think the number of unnecessary procedures has come down with the implementation of the STGS?
10. What do you suggest can be improved to fine tune this entire process?

4. Guiding questions for hospitals to analyze the early effects of standard treatment guidelines on the standard of care.

1. Do you think the standard of care has improved with the implementation of STGs?
2. How has this benefitted you or your organisation?
3. Have the medical staff spoken positively or negatively about these?
4. Do you think the quality of care provided to patients has improved with the implementation of the STGs? If yes, explain how?
Annexure 2 - Interview guide for SHA officials

Extent of adoption of STG
- Plan of action taken to roll out stg in your state, process from inception till now
- Team members for completion of roll out
- STG impact in small, medium, large hospital
- Opinions, grievances from the empanelled hospital
- Resistance on the implementation process

STG implementation and impediments
- Training - external and internal
- Team members allocated for training of stg
- Deviations from the process - spoc, documents, process
- Impediments and Challenges for SHA/hospital
- Query/rejection - 1- frequency
  2- plan of action
  3- tms, frauds
- Process- unspecified packages - process - problems
- Audits for claims - members, workflow
- Fraud trigger system and team delegation for the same
- Benefits of STG - IT integration for reducing fraud and improving Quality
- Reimbursement process, TAT, has it changed because of STG Implementation?

Standard of Care
- Has STG-IT implementation had any effect on the standard of Care
- Quality of care improved and fraud reduced? If yes do you measure it?
- Important feedback and reviews
Annexure 3 - Interview guide for district coordinators

PART 1
Extent of adoption of STG
- What is STG?
- Purpose
- Components
- Place to extract STG from benefits and negativities

Approaches and issues
- Opinions of users of the hospital
- STG impact on the institution
- Resistance while implementation, at present

STG facts
- How many package and STG implemented from inception
- Periodically how many?
- Plan of action, your role in STG implementation

PART 2
STG implementation and impediments
- Process from inception till now
- Training - external and internal
- STG-IT implementation - software/technical
- Deviations from the process - spoc, documents, process
- Pre auth, post auth, query process and impediments
- Daily work and issues
- Challenges for - patients, relatives/hospital staff

PART 3
CLAIMS
- Role in claims process
- Whole process and challenges
- Pre auth post auth and daily impediments
- What help STG-it integration helped in claims management
- Query/rejection - 1- frequency
  2- plan of action
  3- tms, frauds
- Process- unspecified packages - process- problems
- Audits for claims

PART 4
STANDARD OF CARE -
- On STG, STG-IT implementation
- Quality of care and fraud
- Important feedback and reviews
Annexure 4 - Interview guide for PPD and CPD

Respondent details
Name:
Designation:
Qualifications:
Date of interview:
Guiding questions based on the Objectives and the RE-AIM Framework:

1. How often do you have to refer to the STGs?
2. What are the various components of the STGs?
3. What were the opinions of doctors and other medical staff with regards to the adoption of the STGs?
4. Do you think patient care service has improved because of the implementation and adoption of STGs by the hospitals?
5. What are the benefits of adopting these STGs?
6. Has this affected the claim process positively or negatively?
7. Do you feel that implementing STGs has reduced frauds that are done by hospitals?
8. Do you find the implementation of STGs has decreased the unnecessary delay in processing of pre-auth and claims and aided to timely payment to hospitals?
9. If this had to be done differently what are the changes in the process that you would recommend in this system?
10. How deviations are noted during pre-authorization, claims processing and what actions are taken?
11. How often are there claim rejected because of deviation from higher authorities?
12. What are the difficulties you face in your regular claims tasks?
13. Has this STG implementation made your work tougher or easier?
14. Has this brought in more accountability amongst the MEDCO?
15. What are the most common complaints/query you get with regards to the STG claims process?
16. What is the plan of action if any case is rejected from concerned authority during claims processing? What is your role in here?
17. How helpful is the questionnaire checklist for mandate documentation during claims
processing? Any suggestions?

18. Do you feel this has promoted choosing the relevant package as per the patient requirement?

19. Do you think the number of unnecessary procedures has come down with the implementation of the STGS?
Annexure 5 - Interview guide for PMAM and MEDCO

**Hospital details:**
Hospital Name:
Bed Strength:
ALOS:
State:
District:
Specialities empanelled under AB PM-JAY:
Public/Pvt:
If Accreditations available:

**Respondent details:**
Name:
Designation:
Qualification:
Date of interview:

**Guiding questions based on the Objectives and the RE-AIM Framework:**
1. What is the process you followed to implement STGs?
2. In your opinion how has implementing STG’s impacted your hospital work?
3. Was there adequate training provided with regards to the STGs implementation from SHA/NHA?
4. Are the STGs readily available for the doctors, PMAM/MEDCO? If yes where and how it is available?
5. How do you visit the online training videos and modules? How often?
6. Did you face any difficulties in the process of implementation? If yes then please elaborate.
7. Did you experience any lag or delay in implementation of IT Integration?
8. How was the training to PMAM/MEDICO given and reviewed periodically on STGs?
9. Was the upload on the software smooth?
10. Did you face any technical difficulties or any other impediments?
11. Did you receive enough support from AB PM-JAY/ SHA on STG implementation process and further queries?
12. What problems do you encounter on a day to day basis that needs improvement?
13. What are your views on the approval process and monitoring from the SHA/TPA’s?
14. If this had to be done differently what are the changes in the process that you would recommend?
15. How are deviations noted during claims documents processing and what actions are taken?

16. How often are there claim rejections because of deviation?

17. What are the difficulties you faced in adding this to your regular claims tasks?

18. Has this STG implementation made your work tougher or easier?

19. Do you have periodic review or follow up after the implementation of STGs regarding claims management?

20. What are the most common complaints/query you get with regards to the STG claims process?

21. Have you benefitted from this STG implementation?

22. According to you what are the different ways by which STGs and its implementation can be improved from your daily work perspective?
Annexure 6 - Interview guide for Physicians

Guiding questions based on the Objectives and the RE-AIM Framework:

**Hospital details:**
Hospital Name:
State:
District:
Specialities STG has been applied for:

**Respondent details:**
Name:
Specialisation:
Years with the Hospital:
Total Years of Experience:
Date of interview:

1. Did you face any issues in diagnosis and treatment planning with regards to the uptake of the STGs? If yes, how did you deal with it?

2. What are the various components of the STGs?

3. What were the opinions of other doctors and medical staff with regards to the adoption of the STGs?

4. Did the patient care service improved because of the implementation and adoption of STGs?

5. What are the most beneficial aspects of adopting these STGs?

6. Do you think quality of care has improved with this? If not, why?

7. Was there adequate training provided with regards to the STGs implementation?

8. Are the STGs readily available for your team of you? if yes where and how it is available? often have they visited the online training videos and modules?

9. If you want to deviate from the set protocols of STGs and their mandate documents in your medical practice, is it possible?

10. How often you had to deviate? What protocol do you follow?

11. Did you face any technical difficulties or any other impediments?

12. What problems do you encounter on a day to day basis that needs improvement?

13. If this had to be done differently what are the changes in the process that you would recommend?
14. Has this STG implementation made your work tougher or easier?

15. Do you think the standard of care has improved with the implementation of STGs? If yes elaborate on what ways.

16. According to you what are the different ways by which STGs and its implementation can be improved?

17. How often do you reach out to the STGs documents on a daily basis?
Annexure 7 - Doctor’s feedback on STGs

This feedback is being collected as a part of the study on Utilization of Standard Treatment Guidelines (STGs) in AB PM-JAY hospitals. The study is being done for National Health Authority and is being conducted by World Health Organization (WHO, in partnership with Goa Institute of Management.

Objective of the study is to assess the experience of health-care providers (doctors and hospitals) with respect to the use of STGs that have been recently rolled by Ayushman Bharat - AB PM-JAY. The findings will be used to further improve the process of designing and implementing STGs with an ultimate aim of improving health care quality being offered to patients.

Personal details and individual responses collected from you will be kept strictly confidential. Only aggregate responses will be used in the final report. Names, contact details or identification of responders will not be released to any-one. It may only be used by research team for the purpose of analysis.

By responding to this feedback form, we will assume that we have your consent for using your responses for analysis. Thank you

Section A - Respondent’s Details

<table>
<thead>
<tr>
<th>Your Name (Optional) -</th>
</tr>
</thead>
<tbody>
<tr>
<td>Email ID (Optional) -</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>30 years or less</td>
<td>31 to 50 years</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Medical Degree</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Specialization</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Years of clinical experience in years</th>
</tr>
</thead>
</table>

| Years of experience under AB PM-JAY- |

Section B - Uptake

1. How much aware are you about the Standard Treatment Guidelines (STGs) (Master code dictionary) issued by Ayushman Bharat-AB PM-JAY?
   a. Not aware at all
   b. Partially aware
   c. Fully aware

2. Are the STGs (Master code dictionary) available & accessible for your reference?
   a. Yes
   b. No
   c. Partially
   d. I am not aware
3. How frequently do you use the STGs (Master code dictionary) issued by AB PM-JAY while providing treatment to your patients?
   a. I use it always
   b. I use it most of the time
   c. I use it some time
   d. I never use it

4. If you never used it or only use it some time, please state the reason for the same
   a. I am not aware or I do not have access to the STGs
   b. I do not feel the need of using the STGs
   c. Other (Please specify..................................................................................)

(If you have used the STGs, please respond to the questions in next section else skip)

Section C (Feedback on STG(Master code dictionary) - To be answered only by doctors who have used STGs issued by AB PM-JAY for providing treatment to their patients)

5. If you have used the STGs for your providing treatment for your patient; please provide your feedback on following parameters

   a. The STGs(Master code dictionary) are clinically relevant (Tick the appropriate)
      • Fully agree
      • Agree
      • Can’t say
      • Disagree
      • Strongly disagree

   b. The STGs (Master code dictionary) are feasible to implement
      • Fully agree
      • Agree
      • Can’t say
      • Disagree
      • Strongly disagree

   c. The STGs (Master code dictionary) are helpful in improving the quality of clinical care
      • Fully agree
      • Agree
      • Can’t say
      • Disagree
      • Strongly disagree

   d. The STGs (Master code dictionary) provide sufficient flexibility to cater for differences between individual doctor’s choice of treatment
      • Fully agree
      • Agree
      • Can’t say
      • Disagree
• Strongly disagree

e. STGs (Master code dictionary) consider individual complexity of patients, including severity, comorbidity and external stressors
  • Fully agree
  • Agree
  • Can’t say
  • Disagree
  • Strongly disagree

f. Government/Hospital is making sufficient efforts in implementing STGs (Master code dictionary)
  • Fully agree
  • Agree
  • Can’t say
  • Disagree
  • Strongly disagree

6. Hospital/government is making sufficient efforts in implementing
  • Fully agree
  • Agree
  • Can’t say
  • Disagree
  • Strongly disagree

7. Overall basis, how satisfied or dissatisfied are you, with the STGs (Master code dictionary) issued by AB PM-JAY.
  • Fully agree
  • Agree
  • Can’t say
  • Disagree
  • Strongly disagree

8. Please state the treatments for which you have used the STGs (Master code dictionary)
  a.
  b.
  c.
  d.
  e.

9. Your suggestion on how STGs(Master code dictionary) can be improved for addressing clinical quality

10. Your suggestion on what can hospital/government can do to increasing the usage of STGs (Master code dictionary) by doctors.

Thank you very much for your time and response
References


12. Jaeschke R. Users’ guides to the medical literature. III. How to use an article about a diagnostic test. A. Are the results of the study valid? Evidence-Based Medicine Working


29. Straus SE, Tetroe J, Graham ID. Knowledge Translation in Health Care: Moving from Evidence to Practice Edited by.


# List of tables and figures

## Tables
- Table 1 - Objective-wise method and data ........................................... 13
- Table 2 - AB PM-JAY scheme in MP and J&K ..................................... 17
- Table 3 - Claim amount rejection as per EHCP type .......................... 29
- Table 4 - Speciality-wise rejection rate for commonly used specialities .. 30
- Table 5 - ALOS as per EHCP type for pre and post-STG period ......... 31
- Table 6 - Speciality-wise ALOS stay - pre and post-STG ................. 31
- Table 7 - Proportion of claims by EHCP type ................................. 32
- Table 8 - Enablers and Barriers to STGs implementation ................. 33

## Figures
- Fig. 1 - The process flow for STG development ................................. 2
- Fig. 2 - CFIR framework .................................................................... 8
- Fig. 3 - Geographical representation of study regions for primary data collection ........................................... 11
- Fig. 4 - RE-AIM Framework for the process evaluation in the adoption and use of STGs ................................. 12
- Fig. 5 - Flowchart explaining STG implementation .......................... 18
- Fig. 6 - Awareness about STGs amongst physicians of EHCPs in the study regions ........................................... 20
- Fig. 7 - Opinion of physicians on effect of STGs in improving quality of care ........................................... 23
- Fig. 8 - Overlapping and contradicting elements between users of STG ........................................... 34