Optimizing Real-World Evidence Framework for Oncology: Challenges, Opportunities, and Way Forward for India
Executive Summary

In recent years, there has been a growing interest in real-world evidence (RWE) to answer policy-relevant questions in oncology. RWE can offer useful insights into patient profiles, disease diagnosis, treatment selection, dosage, and managing toxicity associated with oncology treatment. With the growing incidence of rare and metastatic cancers, RWE could become a potential enabler to accelerate drug approvals, especially when randomized clinical trials are not possible. Although developed countries have identified and accepted the importance of RWE in health care/regulatory decision-making and guiding clinical practice, real-world data (RWD) generation and the leveraging of RWE in India are still in their nascent stages, necessitating a robust RWE framework to assist health care providers and decision-makers. Pfizer partnered with IQVIA to bring together stakeholders from public and private enterprises (Central Drug Standard Control Organization [CDSCO], National Health Authority [NHA], National Institution for Transforming India (NITI) Aayog, Indian Council of Medical Research [ICMR], Tata Memorial Hospital [TMH], and patient advocacy groups) for a roundtable discussion to understand the existing RWE framework; identify opportunities for government initiatives; review recent changes in the health care system; identify associated challenges; and outline the way forward for India with a particular focus on oncology clinical decision-making.

The broader objectives of this first-of-its-kind endeavor were as follows:

1. To comprehend the perspectives of Indian health care decision-makers on the RWE framework, including the Ministry of Health and Family Welfare, clinicians, hospital administrators, health insurance providers, regulators, policymakers, patients, and the government

2. How recent changes in the Indian health care system and government initiatives can help generate RWD; learn from RWE frameworks from other regions; challenges in India and potential solutions

3. To provide recommendations and decide the way forward/future opportunities for the RWE policy framework in India with a special focus on oncology

The suggestions from the roundtable discussion are presented in the current white paper. Stakeholders emphasized the effectiveness of public-private partnerships to generate RWD. Stakeholders provided their insights on data transparency, including patient voice, limitations of data, and the required integration of electronic health records (EHRs) and cancer registries in India. They emphasized how real-world claims data generated through private and government insurance schemes could be adequately utilized for health outcome research. Various government-initiated schemes have been implemented at the state and central levels (e.g. Pradhan Mantri Swasthya Suraksha Yojana). Ayushman Bharat Pradhanmantri Jan Aarogya Yojna (PMJAY) and the National Digital Health Mission (NDHM) are significant steps toward universal health coverage (UHC) and can generate longitudinal RWD, which can be utilized in a meaningful way for health care decision-making.

We sincerely believe that this paper will act as the catalyst for further discussion on and help meet the evidence requirements for oncology in India, since the diversity and extent of RWD on oncology therapeutics in India can guide decision-making not only in the country but also in other Asia-Pacific countries.
Introduction

RWD is defined as data relating to patients’ health status and/or the delivery of health care routinely collected from various sources. RWE is the clinical evidence about the usage and potential benefits or risks of a medical product derived from RWD analysis. Examples of RWD include data derived from RWD sources—EHRs, product and disease registries, and administrative and medical/insurance claims databases that can be used for data collection and, in certain cases, to develop analysis infrastructure to support different types of study designs to develop RWE, including, but not limited to, randomized trials (e.g. large simple trials, pragmatic clinical trials) and observational studies (prospective or retrospective).\(^1\)

Traditionally, randomized clinical trials (RCTs) have provided insights into new medical therapies and continue to remain the gold standard for drug approval. However, RWD have the potential to complement the information gained from RCTs, which are often challenged by their design limitations and do not appear to be directly generalizable to larger populations. RWD help in overcoming these challenges and reflect clinical experience across a broader and more diverse population than RCTs.\(^2\)

Researchers and health care decision-makers are using evidence and insights from RWD in a variety of ways, e.g. to understand the disease epidemiology, progression and treatment patterns, and the impact on patients and public health; monitor new treatments for safety, including the effectiveness of risk minimization measures and effectiveness, including tolerability, adherence, and coverage; quantify better and more rapidly assess emerging safety signals; support formal assessments by regulatory and Health Technology Assessment (HTA) bodies; provide insights for life science research (e.g. patient phenotypes with greatest unmet need; novel outcome measures); and increase the sustainability and effectiveness of health care systems, including optimal use of medicinal products over their lifecycle.\(^3\)

RWE is complementary to RCT, and oncology especially benefits from RWE by guiding clinical decision-making across the patient journey.

An overview of RWE is presented in Figure 1.

**Figure 1: RWE usage across the drug lifecycle.**
In the oncology space, the key benefits of RWE include cancer screening and diagnosis, optimal treatment choices (including personalized medicine), and disease management—such as dosing and treatment of adverse events.\(^4\)

In recent times, RWE generation in oncology has been prolific in the USA and western Europe. With expansive biopharmaceutical investment in infrastructure harnessing patient-level data and with greater local regulatory guidance, oncology patients in developing nations may now have an opportunity to benefit from clinical decision-making informed by RWE.\(^4\) RWE approaches are increasingly becoming the norm across the globe for bringing products to the health care market and ensuring their application in clinical practice.\(^4\)

### Limitations of RWE and potential solutions

**Structural and behavioral barriers:** Due to several structural and behavioral factors, the full potential of RWE remains untapped in developing countries such as India. Structural barriers include missing data, data entry errors, lack of data standardization, lack of integrity of data, data quality, lack of guidance or regulatory frameworks to manage or handle RWD, and lack of regulatory engagement. Behavioral barriers include entrenched health care professional behaviors that impede rapid RWE understanding and adoption. These barriers can be addressed with the close collaboration of health care stakeholders such as health care professionals (HCPs), institutes, industry partners, regulators, payors, patients, and patient advocacy groups, among whom regulators need to be at the forefront, given their ability to facilitate the use of RWE in health care policy and legislation.\(^4,5\) Once patient and HCP engagement is established, pharmacovigilance may become a crucial piece of information. Currently, some significant interactions exist in India; however, they are at a preliminary stage.

**Interpretation:** A key feature of data from real-world studies is that they reflect actual clinical practice, unlike the clinical trial setting, which is designed to minimize confounders and biases with strict monitoring and adherence to a study protocol. While the “real-world” element may improve generalizability, uncertainty around treatment effects derived from RWE for a medical technology may limit its usefulness, posing a challenge for determining the acceptable trade-offs between these, depending on the context of its use. Hence, a structured framework to conduct RWE studies and assess their applicability will help overcome these challenges.

**Quality:** Because RWD are collected during routine clinical care, a lack of quality control during data collection necessitates significant efforts for data cleaning (e.g. missing data, inconsistent data entries). RWE may be pooled from various RWD sources, each with known limitations (e.g. absence of clinical endpoints in claims data or resource data in EHRs, limited follow-up durations in registries), necessitating data aggregation and integration for a complete understanding of the clinical picture.

**Technical capabilities:** Performing analysis on a large amount of data requires software and data models as well as skilled personnel with deep expertise in data analytics and management. Currently, there is a shortage of technical capabilities for supporting RWE generation almost across the globe. Adequate RWE training of HCPs and other health workers could help leverage RWD in a more meaningful manner.

**Privacy and protection:** Governance around how data should be made available and used is needed to ensure patient privacy protection while allowing accessibility to clinically meaningful data. Extensive resources are necessary to develop the health care or legal infrastructures and the technical capabilities that would enable the collection of high-quality RWD for robust RWE generation. This contributes to high costs; thus, cost-effective methods of research and analysis are the need of the hour.
This white paper draws on recommendations or actionable points from the stakeholders’ perspective required to maximize the adoption and leveraging of RWE in improving patient lives in India. These recommendations can provide valuable insights for resolving unmet needs, enabling the government, regulatory, payor, and pharmaceutical sectors to create an ecosystem that would enhance treatment protocols and decision-making from the regulatory, clinical, and reimbursement perspectives.

**Methodology**

In recognition of the value of RWE in driving the generation of new insights that ultimately affect patient lives, Pfizer partnered with IQVIA to help bring together regulators, payors, pharma experts, oncologists, and patient groups from various governing bodies and countries. The objectives of the meeting were to understand the perspectives of Indian health care decision-makers, regulators, clinicians, policymakers, and patients on the optimal utilization of RWD and to establish a robust RWE framework in India that will help with health care decision-making in the oncology space. The stakeholders discussed the current landscape of RWE in India, identified several opportunities and challenges, and recommended priority action points to leverage RWE in India. Overall, this endeavor will foster an efficient exchange of clinical experience across various sectors involved in RWE, serving the entire health care ecosystem—thereby improving patient lives in India. However, we acknowledge that it is impossible to cover every detail that emerged during the discussion in this paper.

**Learning of potential acceptance of RWE in decision-making**

Relying on RWE (in part or in full) to gain regulatory acceptance should be guided by the early establishment of a cross-disciplinary RWE sub team including but not limited to clinical, medical, regulatory, pharmacoepidemiologic, biostatistical, nonclinical, data analytics, project management, and legal expertise. Multidisciplinary expertise is critical to developing an appropriate RWE strategy considering the totality of evidence and research objectives. Broad and deep expertise is needed to assess study design and statistical analysis, which may consider factors such as the clinical aspects of the product, the product lifecycle stage, and the availability and quality of data.

Experts from different domains of the health care system presented their views, with the following broader themes:

- How RWE is influencing health care globally
- RWE framework in India and what already exists
- Solution offerings/way forward

A roundtable was conducted on September 25, 2021, inviting various key stakeholders to establish a narrative for encouraging the use of RWE to support a patient-centric approach in India. This white paper also provides suggestions to policymakers about the adoption of RWE for informed oncology clinical decision-making in India.

**How Is RWE Driving Health Care Globally?**

In recent years, there has been a growing interest in using RWE to guide health care decision-making, especially in oncology. Robust RWE has applications across the entire drug development process, offering numerous benefits for pharmaceutical companies to reduce timelines and costs, and increase the chances of technical and regulatory success. CDSCO, NHA, ICMR, TMH, patient advocacy groups, and medical experts from Taiwan and the USA continue to deliberate on leveraging RWD in health care decision-making. Experts opined that the integration of longitudinal RWD would help in regulatory decision-making in India and other Asia-Pacific region markets.
There are several applications for RWE throughout clinical development, including evidence from the global scenario:

**Early discovery and drug approval of anticancer drugs:** Effectively deployed, RWE can accelerate the pace of discovery and patient impact of new oncology therapies. Oncology development is increasingly personalized and precise, with narrower and more nuanced indications.

A few examples of how RWE helped leverage U.S. Food and Drug Administration (FDA) approvals are given in Table 1 below.

### Table 1. FDA approvals based on real-world evidence data

<table>
<thead>
<tr>
<th>DRUG</th>
<th>TYPE OF RWE</th>
<th>REGULATORY ACTION SUPPORTED</th>
<th>TOTAL NO. OF PATIENTS ENROLLED</th>
<th>DATE OF APPROVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pembrolizumab</td>
<td>Expanded access study data to support clinical efficacy</td>
<td>Supplementary indication approval for microsatellite instability—high or mismatch repair deficient cancers (Original marketing application approval was for unresectable or metastatic melanoma)</td>
<td>149</td>
<td>May 23, 2017</td>
</tr>
<tr>
<td>Lutetium Lu$^{177}$ dotatate</td>
<td>Expanded access study data to support clinical efficacy and safety</td>
<td>Original marketing application approval for SSTR-positive GEP-NETs</td>
<td>229</td>
<td>Jan 26, 2018</td>
</tr>
<tr>
<td>Palbociclib</td>
<td>EHR data, claims data, and post marketing safety reports to support clinical efficacy and safety in new patient population</td>
<td>Supplemental indication approval for male breast cancer (Original marketing application approval was for postmenopausal women with hormone receptor-positive, human epidermal growth factor receptor 2-negative advanced or metastatic breast cancer)</td>
<td>59</td>
<td>Apr 04, 2019</td>
</tr>
<tr>
<td>Avelumab</td>
<td>EHR data as historical control for efficacy</td>
<td>Original marketing application approval for MCC</td>
<td>88</td>
<td>March 23, 2017</td>
</tr>
<tr>
<td>Blinatumomab</td>
<td>Retrospective data from clinical sites as historical control for efficacy</td>
<td>Supplementary indication approval for MRD-positive ALL (Original marketing application approval was for Philadelphia chromosome-negative relapsed or refractory B-cell precursor ALL)</td>
<td>116</td>
<td>March 29, 2018</td>
</tr>
</tbody>
</table>

ALL indicates acute lymphoblastic leukemia. EHR, electronic health record; GEP-NET, gastroenteropancreatic neuroendocrine tumor; MCC, Merkel cell carcinoma; MRD, minimal residual disease; SSTR, somatostatin receptor.
Develop treatment guidelines: The health care community uses these data to support coverage decisions and develop guidelines and decision support tools for use in clinical practice.

Safety monitoring: The FDA uses RWD and RWE to monitor post marketing safety and adverse events and to make regulatory decisions.\textsuperscript{10,11}

Trial design and feasibility: Targeted use of RWE derived from EHRs supports the design and optimization of clinical trials. RWE can be used to design a protocol that is generalizable to standard care, assess the impact of eligibility criteria on trial feasibility, and inform the selection of trial sites.

Indication expansion: Oncology therapies approved for a specific indication are frequently used for the treatment of related malignancies. RWE provides a means of leveraging the series of natural experiments that occur as part of off-label use to clarify and, where possible, broaden indications or guidelines for previously approved therapies.

Example: The US FDA approved a supplementary new drug application to expand the indications for palbociclib in conjunction with an aromatase inhibitor or fulvestrant for men with hormone receptor-positive (HR+), human epidermal growth factor receptor 2-negative (HER2-) advanced or metastatic breast cancer. The approval was based on data from EHR and post marketing reports of the real-world use of palbociclib in male patients.\textsuperscript{12}

Market access and drug reimbursement: Current evidence indicates that payers infrequently use RWE, or information on how treatments work in the real-world, to guide their medication coverage and reimbursement decisions. Moreover, considering rising treatment costs, payers are increasingly requesting clinical value evidence before offering coverage. These pressures are more pronounced in oncology, where multiple high-cost agents with similar modes of action compete for market share.

Every day, data are generated as patients and consumers engage with the health care system. These data are collected via billing claims, EHRs, patient registries, and/or personal health devices. Using careful methods and analytics, these data can be transformed into evidence to address specific issues that cannot be or are impractical to be captured by controlled clinical trials.

Regulators face significant challenges as treatments become more innovative and drug developments become more tailored. Recently, ICMR regulators have decided to strengthen global collaboration on COVID-19 RWE and observational studies to discuss priority areas for cooperation on COVID-19-related observational research.

As regulators are developing frameworks and guidance documents on the use of RWE across the product lifecycle for regulatory decision-making, there are already recognized situations more amenable to regulatory acceptance, e.g. to contextualize a product safety profile or where standard RCTs cannot be performed (e.g. for rare diseases, pediatric and/or oncology drug development). RWE can supplement RCTs, serve as a bridge to local data, and, as part of the totality of evidence, support regulatory decision-making—especially in indication expansions, reimbursement decision-making, and allowing new medicinal products to be made available to patients and for public health.

RWD and RWE are already used in the European Union to regulate the development, authorization, and oversight of pharmaceuticals. Their utility in safety monitoring and disease epidemiology is well established, but their evidentiary value in other applications, particularly for establishing effectiveness, needs to be investigated further.\textsuperscript{13} Furthermore, the FDA announced its RWE framework in December 2018, which is based on three pillars: whether RWD are appropriate for use, whether the research design can offer enough evidence, and whether
In 2021, the FDA released the following guidance documents relevant to RWE: considerations for the use of RWE and RWD to support regulatory decision-making for drugs and biologicals; data standards for drug and biological product submissions containing RWD; RWD: Assessing EHRs and mediclaims to support regulatory decision-making for drugs and biological products; and RWD: Assessing registries to support regulatory decision-making for drugs and biological products.

Indeed, when a regulatory agency is considering a medicinal product that another agency has already approved, addresses a medical need, and for which approval was based on the use of RWE, the following should always be considered to expedite the approval and speed up the availability of this new medicine to local patients globally:

• Rely on the reference agency’s overall assessment and perform an abbreviated review focusing on the applicability of the results to the local population and health care system, with consideration of ethnic factors where appropriate; this recommendation aligns with the 2021 World Health Organization (WHO) Good Reliance Practice document and the ICH E5 (R1) Ethnic Factors guideline.

• Use RWD to assess ethnic differences across regions, e.g. to support the concept of a pooled region or subpopulations, and to optimize the implementation of the International Conference on Harmonization (ICH) E17 multiregional clinical trial guidelines.

**RWE Framework in India and What Already Exists**

The latest drug and clinical trial regulatory act provide provisions concerning accelerated drug approvals and waivers of post marketing surveillance or phase 4 studies at the time of submission of a new drug under the following conditions:

1. New drug is approved and marketed in countries specified by the Central Licensing Authority (CLA) with no major unexpected serious adverse events reported; or

2. Application is for new drug import for which the CLA already granted permission to conduct a global trial that is ongoing in India and, in the meantime, drug has been approved for marketing in a country; or

3. No probability or evidence, on the basis of existing knowledge, of difference in Indian population of enzymes/genes involved in new drug metabolism or any factors affecting pharmacokinetics and pharmacodynamics, safety and efficacy of the new drug; or

4. Applicant has given an undertaking in writing to conduct phase 4 trial to establish safety and effectiveness of new drug as per design approved by the CLA; or

5. Where drug is indicated in life-threatening condition or disease of special relevance or an unmet need (such as extensively drug-resistant tuberculosis, hepatitis C, H1N1, dengue, malaria, HIV), or rare/orphan diseases for which drugs are not available or are available at a high-cost.
These provisions allow for the approval of a drug that demonstrates an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit or on a clinical endpoint that occurs earlier but may not be as robust as the standard endpoint used for approval. Once the drug enters the market, its manufacturers are required to conduct postmarketing clinical trials to verify and describe the drug's benefits. If further trials fail to demonstrate the predicted clinical benefit, the regulatory body may withdraw the approval. Since 1992, several drugs that treat life-threatening diseases under an accelerated approval pathway have successfully been brought to market and have significantly impacted the disease course. For example, many antiretroviral drugs used to treat human immunodeficiency virus infection and acquired immune deficiency syndrome entered the market via accelerated approval and subsequently altered the treatment paradigm. A number of targeted anticancer drugs have also come to the market through this pathway.\(^\text{15}\)

According to the 21st Century Cures Act directive, the FDA is measuring RWE's potential to support the approval of supplementary indications or fulfill post-approval study requirements for drugs. The FDA uses RWD and RWE to monitor postmarket safety and adverse events and to make regulatory decisions. The health care community uses these data to support coverage decisions and develop guidelines and decision support tools for use in clinical practice. The experts also highlighted the need to incorporate patient perspectives for charting out an appropriate course of action.

**Health care initiatives**

The health care sector in India is expanding rapidly due to expansion in services, strengthening of exposure, and increasing expenditure by the private and public domains. Health care in India is offered through two key channels: public and private. The government, i.e. the public health care system, comprises partial secondary and tertiary care institutions in major cities and focuses on offering primary health care facilities in rural areas. The private sector provides the majority of secondary, tertiary, and quaternary institutions of care, with a major concentration in metros, tier I and tier II cities. Compared to western countries, India is quite cost-competitive. With growing health care expenditure, there is significant scope for enhancing health care services.\(^\text{16}\)

**Electronic medical records (EMRs)**

EMRs have altered the way medical data is recorded and have the potential to be reliable data source for drug development and clinical care. One such example is the TMH, which over the time have gone completely electronic with patient medical records and generates huge volume of data. TMH runs ten out of the 36 patient-based cancer registries in the country. It is truly remarkable that one cancer center is responsible for 25% of the population-based cancer registries in the country and runs for hospital-based cancer registries as well. The disease management group in the hospital runs prospective audits, which also contribute to RWE at TMH.

**National Cancer Registry Program (NCRP)**

ICMR launched the NCRP with a network of cancer registries across the country, with the following objectives:

- To generate RWD on the prevalence and distribution of various cancers
- Conduct epidemiologic research
- To create a database for the development of strategic aids in NPCDCS
- To train people in cancer registration and epidemiology

The NCRP is assisted by a steering committee that meets periodically to oversee and guide its functioning.
**Claims data**

Claims data in India are inadequately used for health outcomes research due to several technical and administrative challenges. However, it is expected that health insurance would become more prevalent in India in the coming years. Various government-initiated schemes have been implemented at both the state and central levels (e.g. Pradhan Mantri Swasthya Suraksha Yojana).  

Public–private partnerships are a way to improve the Indian health care system in terms of infrastructure, community facilities, and other related services.

**Other initiatives**

The vision of the Health and Family Welfare Division is to provide policy inputs aligned to the National Health Policy 2017 and make India’s health sector robust, economically viable, and accessible. Swasth Digital Health is one such health initiative. These initiatives provide advice and policy guidance to key stakeholders involved in public health development and management. They engage with the Ministry of Health and Family Welfare (MoHFW), AYUSH, department of pharmaceuticals, the NHA, state and local governments. They also collaborate with reputed international and national academic institutions, research organizations (ICMR), development partners, and eminent experts to advance the discussion on making a long-term impact on policy approaches.

**Solution Offerings/Way Forward**

Large-scale schemes such as Ayushman Bharat PMJAY and Digital Health Mission have the potential to generate substantial longitudinal RWD, which can be analyzed to draw meaningful conclusions in clinical decision-making. RWE continues to be leveraged for the following reasons:

Given the many benefits of RWE, several initiatives, perspectives, and recommendations were proposed during the roundtable discussion to guide health care policy decision-making in oncology.

The panel agreed that India has huge RWE capabilities; however, this potential remains unexplored in regulatory and health care decision-making.

**Improving health care infrastructure:** With the introduction of the National Health Research Policy, health research organizations and the Indian government are taking initial steps toward approaching RWE; however, evolving RWE still requires multiple hands and efforts to strengthen its broader implementation.

Awareness, training, and development of appropriate tools to capture RWD are the need of the hour for establishing a robust HTA system in India.
One of the key initiatives by the Indian government is the introduction of a uniform electronic health record system for the creation and maintenance of EHRs by health care providers.¹⁹

**Effective public-private partnerships**

The recent pandemic has given us a chance to reflect, and health research has taken center stage. Learnings from the COVID-19 pandemic have paved the way for effective public-private partnerships (PPPs) more than ever. A few examples encapsulating the successful PPP experiences in India include: the pan-nation telemedicine network (moving forward, it will be leveraging information technology [IT] to manage patients’ EHRs, capacity-building, and training of HCPs as well as health workers for pandemic management, contact tracing, containment, etc.). The vision is also to deploy IT for governance and information dissemination. The government has also launched an integrated health information platform to aid NDHM. The Hospital Information System, National Medical College Network, My Hospital Network, Drug and Vaccine Distribution Management System, COVID Dashboard, Health and Wellness Center, Laqshya National Program for the elderly, Mental Health, EMR, and MoHFW budget are examples of noteworthy PPPs.

**Bringing Clinicians and Industry Together:** Clinicians expect RWE studies to produce clinical evidence relevant to their practice and patients. Industry expects RWE studies to provide evidence to support treatment approaches. To a clinician, an industry RWE study often has the “look and feel” of a post-marketing support study. Hence, there is a need to harmonize the clinician’s and industry’s expectations to conduct RWE studies. Furthermore, industry could also help physicians and institutes by providing infrastructure, training, facilitating forming ethical committees, and initiating the global trials.²⁰

**Leveraging UHC data for more robust RWE in clinical decision-making and patient access:** One of the most pressing health care challenges in India is the lack of affordability of medical treatment. UHC is a system that ensures access to various health services people need without facing financial hardship. A few countries have successfully implemented UHC reforms; however, the experts envisaged the need to expand it worldwide. Implementation of UHC would enable more individuals to seek health care, ultimately generating a lot of claims data that could be utilized for research purposes. Key research partners who actively support the UHC movement are the World Bank, the German Agency for International Cooperation (GIZ), WHO, the National Institute of Public Finance and Policy, and the Public Health Foundation of India.

**Health care initiatives**

The government of India invited public opinion and the involvement of different stakeholders to set up a multistakeholder committee that aimed to formulate a new health research policy.

Recent government policies such as Ayushman Bharat PMJAY and NDHM are major steps toward UHC. Wider implementation of these policies will generate vast RWD. These data can be utilized for future health care/regulatory decision-making and for guiding clinical practice.
- NDHM is a very powerful RWD tool for real-time analytics and real-time health care decision-making. It is integrated with health ID, doctor ID, and hospital ID systems, along with various health facilities, data, and health records of individuals, which would upgrade the digital health infrastructure of the country (Figure 2).

- It creates an integrated health care system, linking practitioners with patients digitally by giving them real-time access to health records. NDHM is necessary to support the integrated digital health infrastructure of the country. Through digital highways, it will bridge existing gaps among different stakeholders in the health care ecosystem.

- NDHM will create a seamless online platform by providing a wide range of data, information, and infrastructure services, duly leveraging open, interoperable, standards-based digital systems while also ensuring the security, confidentiality, and privacy of health-related personal information.

Figure 2. National Digital Health Mission.
Ayushman Bharat PMJAY is the world’s largest insurance scheme funded by the government of India, with over 10.7 crore families benefiting from the scheme and close to 50 crore people set to be enrolled. The journey of Ayushman Bharat PMJAY is illustrated in the Figure 3.

Figure 3. Journey of Ayushman Bharat PMJAY.

The experts emphasized the need to develop guidelines on RWE for post marketing studies, HTA and to generate more data for real-world settings or specific subgroups and guide decisions around indication expansion and reimbursement in Asian countries. The NHA was planned to converge with the Employees’ State Insurance Corporation (ESIC) scheme and bring their IT platform into ESIC, so that data remain valuable and transparently accessible.

Enhancing clinicians’ perceptions about RWE and its application in their clinical practice via education of HCP about RWE study designs, framework, and analysis

Robust policy frameworks

Opportunity for early engagement and pilots between health care providers such as sponsors and regulatory bodies

Given the varying degrees of acceptance of RWE among regulatory authorities and across therapeutic areas, early engagement between sponsors and regulatory authorities is critical to ensure alignment early in the process to promote transparency and agree upon objectives. HCPs, via mechanisms such as the US FDA RWE Subcommittee and the European Medicines Agency Innovation Task Force in Europe, are provided an opportunity to build partnerships and promote convergence in regional RWE regulatory strategies. For transparency with regulatory agencies, it is important to document the rationale behind using an RWE approach rather than a traditional clinical trial approach. Additionally, the establishment of RWE frameworks globally is creating new opportunities for regulators, industry, and key stakeholders to partner, share experiences, and generate mutual trust as we elucidate the performance characteristics of RWE in a regulatory context.
The Indian health care sector is growing at a fast pace, and the government of India is earnestly creating an enabling environment for this sector, as the link between RWE and health care decision-making is now more than ever becoming clear to public policy leaders.

**Overcoming health care RWD challenges**

*Data is the new oil.*

Going into granularity on data issues in India, the experts emphasized the need to generate high-quality evidence and proposed ways to make it painless for HCP working at the ground level.

Several initiatives, including the Gates Foundation Initiative, have enabled data availability in the public domain. The MoHFW is now setting up an extension of the Integrated Health Information Platform to enable the availability of health care data in the public domain for research purposes.

The experts discussed ways to deal with data transparency issues in India and put forth methods by which the ICMR and National Cooperative Development Corporation could deidentify and anonymize data before making them publicly available.

The National Family Health Survey also shares data with the MoHFW and other agencies for policy and program purposes after anonymizing them. With the program’s growing popularity, requests for more funds have been made, and attempts are being made to involve more centers in the future. A few ICMR initiatives, along with National Digital Health, standardized EHRs, and the National Health System Cost Database, aim to develop a large and common database to record and manage health care data.

Given that there is a worldwide policy framework in place for the new drugs’ approval and post-authorization clinical trial requirements, there is an opportunity for it to be adapted and defined in the Indian health care system. Effective collaboration across institutions might also assist in leveraging the value of data provided, as it will provide a reliable data source, and analysis of these data will produce robust evidence. The government’s large health care scheme is a data source; nevertheless, to use this data in research and decision-making, a policy framework is needed.
Concluding Remarks

The FDA uses RWD and RWE to monitor post marketing safety and adverse events and to make regulatory decisions. The health care community uses these data to support coverage decisions and develop guidelines and decision support tools for use in clinical practice. Medical product developers use RWD and RWE to support clinical trial designs (e.g. large simple trials, pragmatic clinical trials) and observational studies to generate innovative, new treatment approaches. India has a huge potential to guide health care decision-making through generating and analyzing RWE data. Recent government initiatives such as Ayushman Bharat PMJAY and the NDHM are major steps toward UHC. Wider implementation of these policies will generate vast RWE data. These data can be utilized for future health care/regulatory decision-making and for guiding clinical practice. However, increased awareness and developing key competencies will help develop a robust health care framework in India. There is a need to generate longitudinal oncology data using robust methodologies. Partnerships with industry, academia, and research organizations are essential to creating a platform that is devoid of any conflict and acts as a standard, robust, and reliable data source. Efficiently leveraging existing data from platforms such as PMJAY or NDHM or hospital-based registries is required to generate further evidence. RWE frameworks and their applicability in indication expansion and making reimbursement decisions must be defined.
Funding

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References


