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IMPACT: Facilitating Shared Learning and Collaborative Action Research to Improve Cancer Care



Introduction

The Improving Management for Patients and Access to Cancer Therapies [IMPACT] initiative aims to improve cancer care by facilitating and catalysing shared learning of thought leaders and stakeholders from developed and developing countries. The IMPACT Working Group's vision is to build an active network of engaged high-level stakeholders from a range of countries including representatives from governments, health care delivery and financing organizations, academia, charitable organisations, patient support groups and industry.

The IMPACT mission is to bring together these international stakeholders to openly discuss and analyse their health systems. IMPACT members will learn from one another about strengths and challenges of and approaches to cancer care in their systems. The aspiration is that this engagement and international shared learning will help the stakeholders design, initiate, and assess the impacts of local activities and policy changes so that changes result in improved care for cancer patients.

This report describes the rationales for the IMPACT initiative, lays out rapid advances in and challenges for effective cancer care in evolving health systems across countries, and suggests a dynamic shared learning and action research process to improve cancer care collaboratively.

The 1st IMPACT Workshop was held at Suntec City Guild House, National University of Singapore, in Singapore on the 23rd and 24th November 2015, and was sponsored by Novartis Corporation. The workshop engaged 23 participants from 11 countries. This report serves to invite participation of additional stakeholders in shaping and advancing the IMPACT initiative.

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Executive summary

Cancers are among the leading causes of death and disease worldwide and cancer burden is growing globally. Better scientific understanding of the disease coupled with novel targeted and immuno-oncologic therapies raise the promise of making cancer a chronic, if not curable condition. However, despite many countries achieving universal health coverage or making significant progress toward it, patient access to cancer care is suboptimal. Patients in countries with more advanced health systems may face regulatory and reimbursement delays for novel cancer medications. Patients in low and middle income countries¹ [LMICs] face additional systemic hurdles in access to and quality of care along the pathway of prevention, screening and diagnosis, surgery, radiation therapy, chemotherapy, targeted and immuno-oncologic therapy, and survivor and palliative care.

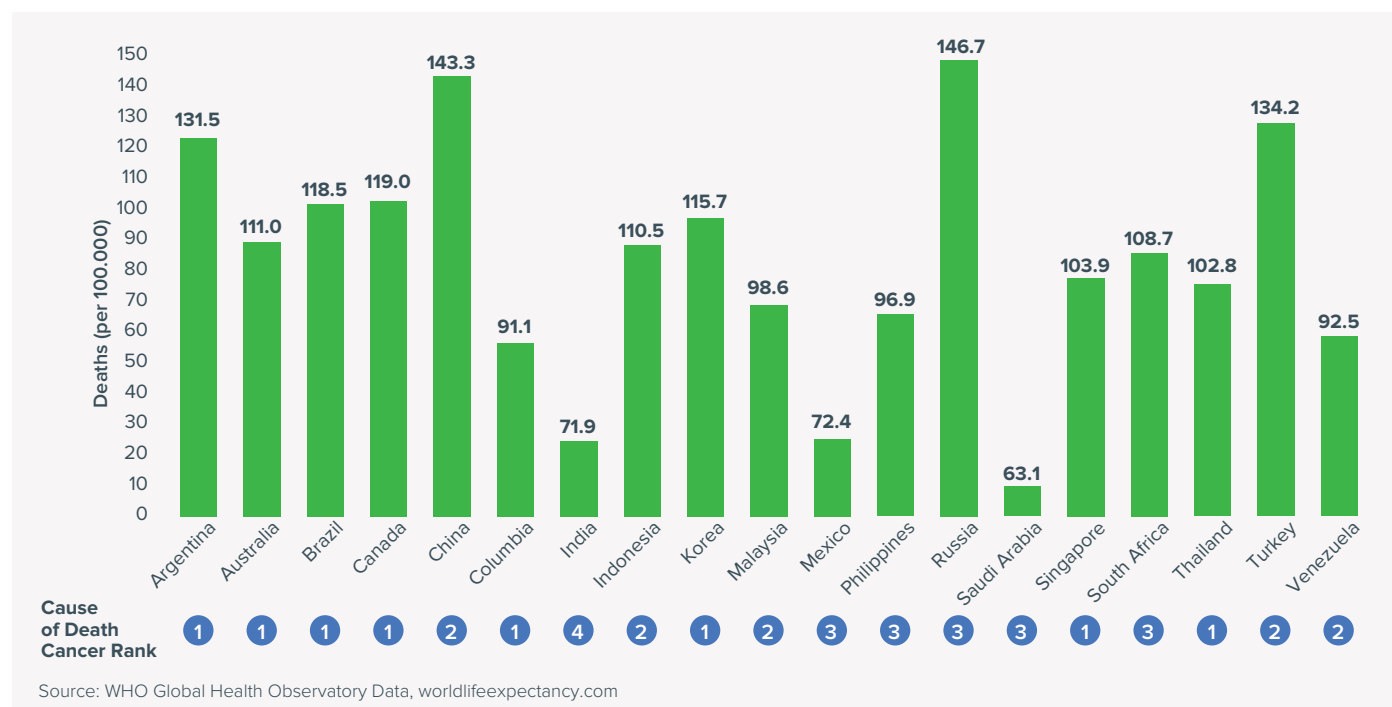
There are many reasons for suboptimal cancer care in general and limited access to novel therapies in particular. They include: challenges in implementing effective prevention and screening programs, the complexity of diagnosis and treatment requiring well-functioning health care delivery systems, the cost of care, and, specifically regarding new treatments, the difference in evidence that novel cancer therapies have at launch compared to conventional therapies, and their prices. We believe that these hurdles can be addressed and patient care improved through a process of **shared learning and collaborative action research** by policy makers, healthcare payers and providers, drug and diagnostic manufacturers, academics, patient associations and other civil society stakeholders across different countries. The process would involve sharing of experiences and knowledge by policy makers, practitioners, and other experts and the collaborative development of potential strategies to improve needed care.

Stakeholders can implement strategies, observe their effects, and analyse what worked and what did not. They can then share their experiences and knowledge to provide evidence to guide the development and implementation of the next generation of strategies, and so on, in a collaborative and iterative process. Such an approach provides flexibility to different countries, settings, and stakeholders to prioritise the issues they address and the approaches they devise, implement, and evaluate, while simultaneously adding to a global body of knowledge that can benefit all countries. The approach accommodates social, cultural, political, and health system differences between countries, while also calling out common elements to advance. The IMPACT multi-stakeholder network has been set up to facilitate such shared learning and action research to improve cancer care.

Cancer burden is growing globally across developed and developing countries

Cancer is one of the top 3 causes of death in most major developed and developing countries (Exhibit 1). Global annual cancer cases are expected to rise from 14 million in 2012 to 22 million within the next two decades due to a growing and aging population as well as lifestyle and socioeconomic changes.² The global cost of cancer is estimated at over \$1 trillion, not including the social cost of the disease.² This large and growing burden is not equally distributed around the world. Less developed regions, as defined by the WHO have a cancer mortality rate of 66% compared to 48% in more developed regions.^{3,4,5} This discrepancy suggests disparities in the quality of cancer care in these regions and the rest of the world, as does the fact that only 5% of global cancer care resources are spent in low and middle income countries.⁶

Exhibit 1: Estimated Cancer Deaths in Select Countries, 2014

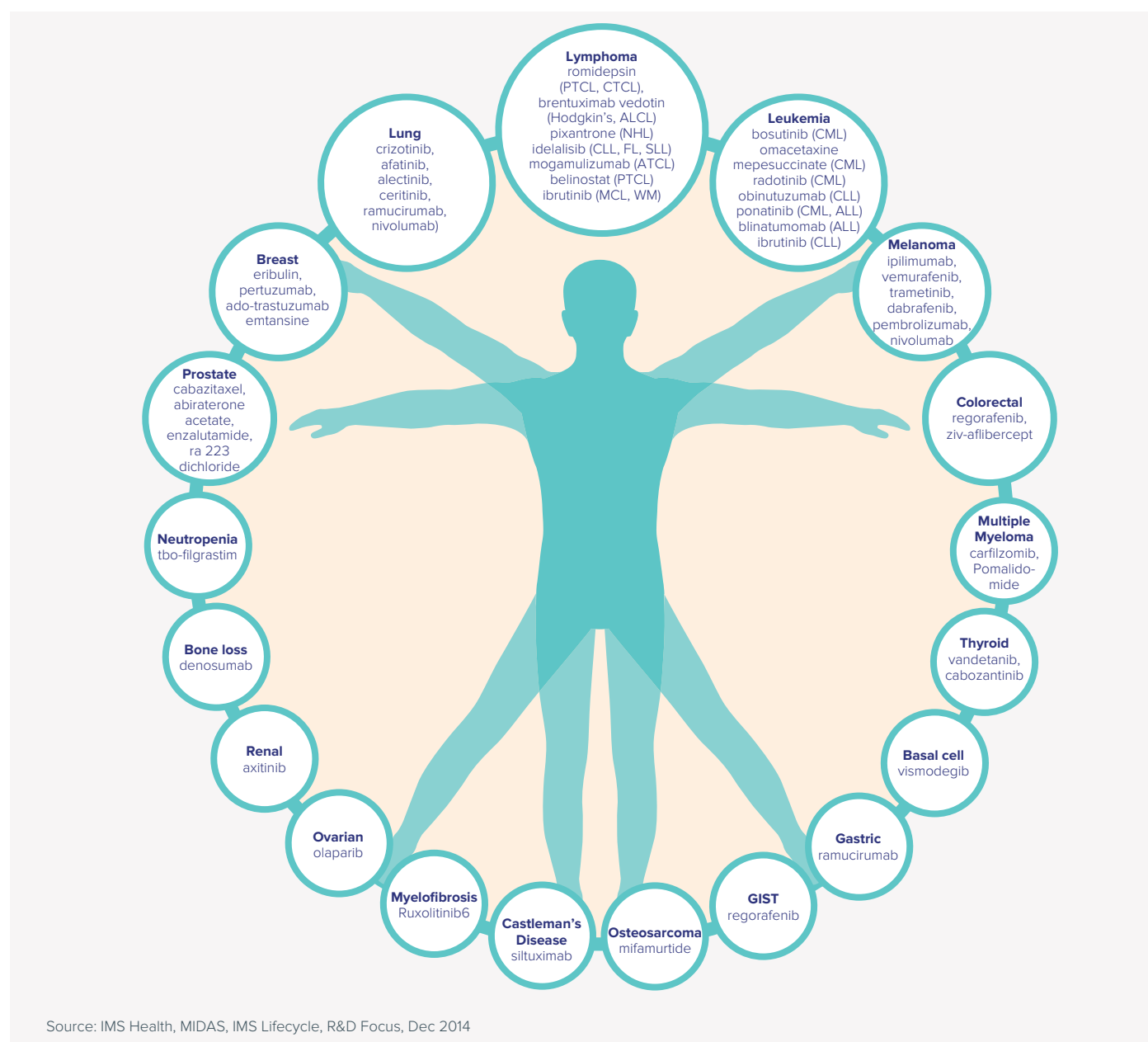


Over the past few decades, there have been significant advances in fighting cancer. The world is seeing increasing awareness and understanding of the disease, growing use of preventive measures,⁷ investment in diagnostic and treatment infrastructure, and the development and launch of new cancer medicines, especially in developed countries. However, developing countries, who shoulder a disproportionate and increasing share of the cancer burden, are lagging behind in benefitting from these advances.

New treatments are emerging, which hold a lot of promise

Many new treatments have been launched over the last five years to treat a variety of tumours (Exhibit 2). Oncology represents the largest cluster of pharmaceutical research and development activity,⁸ and over 1,500 cancer drugs are known to be in pre-clinical or clinical development, of which 91% are targeted therapies,⁹ that is, therapies that more precisely identify and attack cancer cells, rather than interfering with any cell, regardless of whether it is cancerous or normal like conventional chemotherapy.¹⁰ These targeted therapies hold significant promise with the ability to cure some cancers or to transform cancer from a death sentence to a chronic disease that can be managed. Exhibit 3 shows the different types of targeted therapies likely to launch over the next 5-10 years.

Exhibit 2: New Molecular Entity Launches 2010-14 by Indication¹¹



As novel therapies become more targeted, they often require sophisticated molecular biomarker diagnosis to ensure that the right patients receive them. These advances are now incorporated into the standard clinical management of a number of cancers. As genomic sequencing costs are declining, more tumours are being sequenced. Such sequencing helps select patients for targeted treatments, as in colorectal cancer (KRAS test)¹² or lung cancer (ALK gene test).¹³

While these novel therapies may have adverse effects, they often avoid the side effects associated with conventional therapy, thereby increasing patient quality of life. In addition, in some cases, targeted and immune-oncologic therapies may avoid risky and costly procedures such as stem cell transplants or otherwise increase the effectiveness and safety of such procedures.

Exhibit 3: Types of Targeted Therapies¹⁴

Therapy	Description
Cell & Gene Therapy	Treatments in which cells (cell therapy) or functional genes (gene therapy) are introduced with the intention of therapeutic benefit
Monoclonal Antibodies	Novel immune targets for monoclonal antibodies
Apoptosis Inducers	Cause cancer cells to undergo controlled cell death
DNA Modulators	Inhibition of DNA replication through novel chemotherapy delivery or inhibition of proteins involved in DNA modulation
Protein Kinase Inhibitors	Novel inhibition of a number of protein kinases
Angiogenesis Inhibitors	Inhibit the growth of new blood vessels
Immunotherapy	Uses parts of the immune system to target cancer by stimulating immune system or delivering man-made immune components
Epigenetic Therapy	Regulates gene expression to control antigen expression on tumour / regulatory cells to alter the immune response
Therapeutic Vaccines	Designed to enable the patient's immune system to recognise and attack cancer cells
Bi-specific Antibodies	Artificial protein composed of fragments of two different monoclonal antibodies and consequently binds to two different types of antigen
Antibody-drug Conjugates	Comprised of a monoclonal antibody linked to a highly cytotoxic agent i.e. chemotherapy
Combination Therapies	Combination of any two or more of the above classes

Source: IMS Consulting Group Analysis

New cancer therapies are different from non-cancer therapeutics in four critical ways

Existing and future novel targeted cancer therapies are different from other therapeutics in four ways. First, as Exhibit 4 shows, novel cancer therapeutics tend to come with a **different package of evidence**. The high unmet need, small, heterogeneous populations and lack of information on the place in therapy of new agents mean that data on targeted oncology agents is more limited than on non-oncology treatments. There is uncertainty at launch around the benefits and risks of the treatments in practice, and specifically how these vary by patient sub-populations whose cancers may be characterized by different combinations of markers. On the other hand, there is urgency for cancer patients to receive new therapies as they may have limited or no alternatives.

Exhibit 4: Novel Oncology Treatment Data Packages Differ from those of Non-Oncology Treatments

Novel non-oncology treatments	Novel oncology treatment	Rationale
Phase 3 trials	Early access with Phase 2 trials	High unmet need patients cannot wait for treatment
Hard endpoints with limited value on surrogates	Mix of endpoints; often surrogates for Overall survival (OS)	Targeted therapies underpinned by better science can increase likelihood of success on hard endpoints in real world
Long durations; often >1 year	Short durations	
Large trials	Small trials	Cancer with many small distinct patient segments
Head to Head (H2H) trials or placebo controlled trials	Some new therapies with single arm trials	Often no clear Standard of Care (SoC) making it difficult to choose active trial comparator; sometimes even placebo controlled trials not possible given ethical considerations
High value on tolerability	Balance between tolerability and efficacy	High mortality

Source: IMS Consulting Group Analysis

Note: Data packages for some novel non-oncology treatments may have some of the characteristics of those for novel oncology treatments.

Second, several cancers result from more than one mutation or a breakdown in more than one pathway. **Combination therapies** with more than one target can cure or better manage patients with these types of cancers. Designing trials for such stacked or combination treatments poses serious challenges. One challenge is clinical. Clinician researchers are faced with the question of which combination regimens to use and in which patients and in which sequence. There is no clear prioritisation framework to decide which therapy combinations to test in clinical trials. Additionally, the choice of therapy combination may ultimately be subject to commercial constraints, as different existing and investigational therapies may be owned by different companies, requiring cross-company collaboration and new models of payment and sharing of revenue for such treatments.

The third is the **complexities novel cancer therapies present to health systems**, requiring super-specialised oncologists and specialised infrastructure for treatment, in addition to well-functioning screening, diagnosis, and serious illness care systems. Novel cancer treatments require an infrastructure that allows for individualised precision treatments. This presents two challenges to health systems. First, it pulls oncologists in opposing directions in terms of their specialisation. They need to be specialised to understand each type of tumour and each type of mutation. As cancers get sub-typed further and further, this creates a requirement for ever more super-specialisation. On the other hand, the same mutation can exist across tumour types and the same tumour type may have multiple mutations. This also calls for a more generalised knowledge of all tumours and mutations. Thus health systems need this combination of super-special and general knowledge to determine patient-specific diagnosis and treatment regimens, yet there are not enough oncologists in many countries to deliver quality care to patients.

Furthermore, with increasingly complex diagnostic and treatment approaches, it is crucial that patients considered for and receiving novel treatments also receive the many other services of serious illness care (e.g., psychological support, pain management, often termed “palliative care”), as well as post-treatment survivor care. The needed knowledge and expertise to comprehensively care for cancer patients is held by oncologists and many other healthcare practitioners. A sophisticated, coordinated and collaborative approach is necessary for effective cancer care; the approach must centrally involve patients and their families.

This challenge extends to the health system infrastructure. Health systems need specialised centres to deliver precision diagnostics and care, while at the same time have a more generalised ability to make the right diagnosis and referral decisions that connects the primary care physician as the first point of patient contact to the super-specialised centre that delivers complex therapies such as the upcoming CAR-T therapies,¹⁵ which require specialised treatment and infusion of T-cells. To do this successfully, health systems will need to build and connect seamless infrastructure encompassing screening, diagnosis (including biomarker/molecular testing), and cancer treatment with necessary ancillary care and post treatment care.

The fourth difference is the **overall cost of cancer treatments** compared to treatments of most other diseases. Novel drugs, as in Exhibit 3, have high prices intended to reflect improvements on standard of care, significant investments in R&D for those that come to market, relatively small patient populations for recouping investments, and to incentivize further R&D. With the cost of treatment per patient often exceeding tens of thousands of US dollars, healthcare systems need to develop sustainable financial models to ensure that patients have access to cancer therapies, while also ensuring that all parties consider the prices to be fair.¹⁶ Understanding the value of the clinical, health system and societal outcomes of novel cancer therapies from different stakeholders’ perspectives is necessary for establishing fair and transparent pricing systems.

Costs of treating cancer add up. They include costs for increasingly sophisticated and repeatedly needed diagnostics, surgery, radiation therapy, and cancer- and patient-specific and other pharmacological treatments, as well as costs of other care services needed by seriously ill patients. Investments in some areas may save in others. For example, the cost of biomarker diagnostics may be offset by the savings from avoiding expensive therapy for those pre-identified as non-responders. Some highly priced drugs may reduce costs in other areas, through reduced hospitalisations or need for expensive procedures such as stem cell transplants. However, at the moment, new cancer therapies are launched at prices that are higher than those we see for new drugs in most other indications, requiring novel strategies for development, pricing and reimbursement.

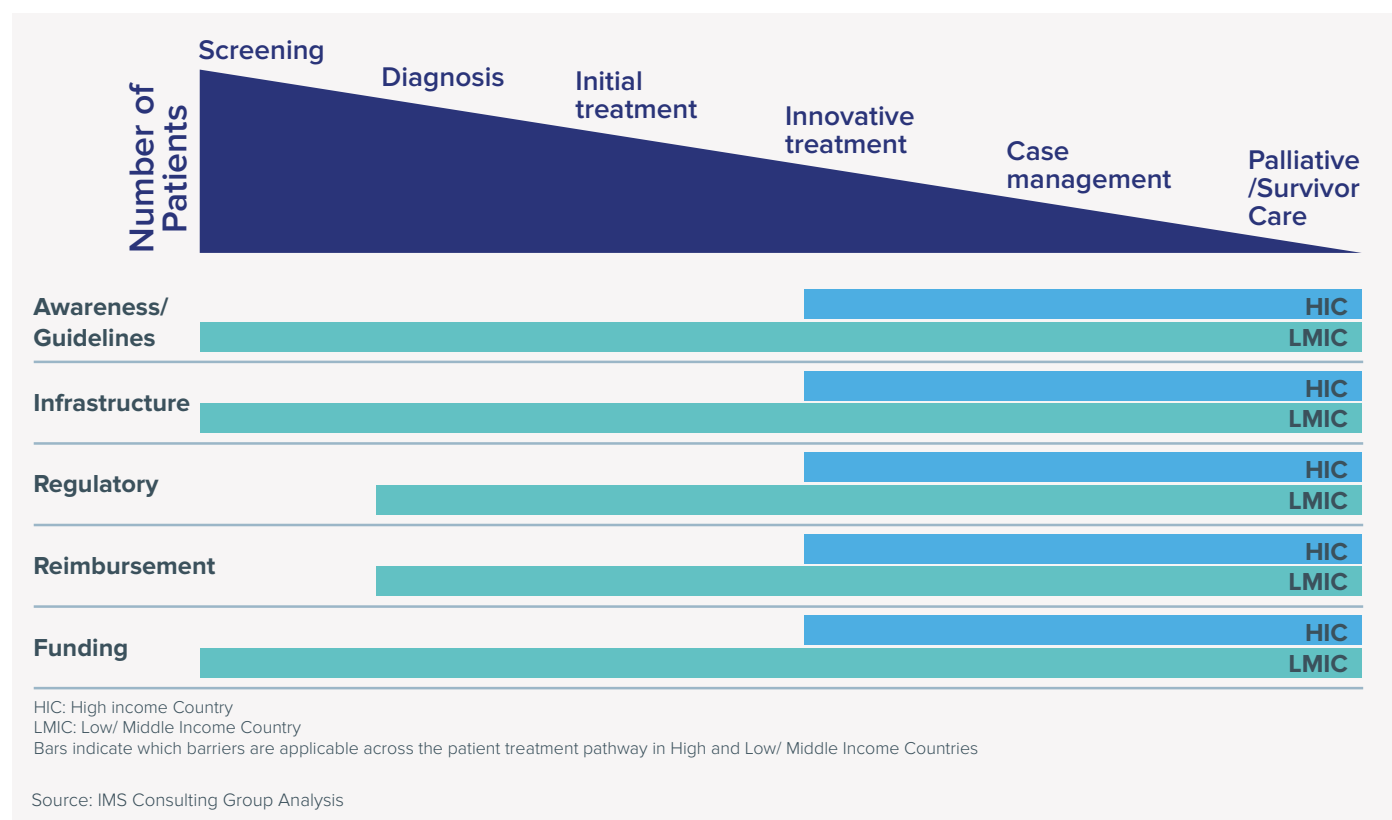
These differences present five hurdles to effective cancer care across the care pathway

A health system provides effective cancer care when every patient gets the right care at the right time in the right amount for the right duration, at a cost affordable to the patient and health system. “Right” in this context needs to consider evidence on effectiveness and safety of care and how well care matches patient preferences. To provide effective care, a health system must perform flawlessly across the care pathway from screening and diagnosis, to treatment and general patient management along the care pathway, while considering patient preferences.

Given the specific nature of novel cancer therapies, health systems face at least five barriers across the care pathway in providing effective cancer care that includes novel therapies (see Exhibit 5).

1. Lack of stakeholder awareness of cancer and how to manage it
2. Lack of access to appropriate healthcare providers and infrastructure
3. Delayed regulatory approvals of new therapies
4. Delayed or no reimbursement of new therapies due, in part, to challenges in assessing and valuing cancer therapies
5. Limited affordability due to funding and pricing challenges

Exhibit 5: Barriers to Effective Cancer Care along Care Pathway in HIC and LMICs



Barrier 1: Lack of stakeholder awareness of cancer and how to manage it

Different stakeholders need to be aware of different aspects along the pathway to achieve better cancer care. Health care providers (HCPs)—specialists, primary care physicians (PCPs), nurses, pharmacists, and others—need to know and be trained in the most updated diagnostic and treatment protocols. This is very difficult in the case of cancer as there are few established international or national guidelines in place for most adult cancers. Given the fragmented nature of the diseases that constitute cancers and the personalised nature of needed treatments, it will be increasingly more difficult to establish standardized guidelines. Even where guidelines exist, these need to be updated often given the rapidly changing treatment landscape. Further, when new guidelines are implemented, HCPs across the care pathway need to be retrained in the new protocols. Therefore, it is not surprising to see diversity in cancer care management and outcomes between countries and between hospitals and specialists within countries. This problem is particularly acute in LMICs where even basic protocols for screening and diagnosis of the most common cancers may be lacking, except perhaps in the largest urban centres. However, along with changes in cancer care, LMIC health systems are also evolving as they move towards universal coverage and expand healthcare interventions covered by newly established or expanding third party payers. This environment of continuous change requires proper change management for optimal patient outcomes and system sustainability.

Providers need to know how best to organise patient care within and across care settings, while payers and policy makers need to know how to organise and fund care at different levels. This is important to ensure proper coordination of care from the primary care centres to secondary and tertiary hospitals and specialised treatment centres. Payers¹⁷ and policy makers also need to be aware of disease burden and the investments and resources required to ensure proper care along the care pathway from screening and diagnosis to treatment.

Governments and individuals need first to be aware of cancer prevention and how to minimise population and individual cancer risks through effective population prevention programs and individual lifestyle choices, respectively. Where possible, health systems should establish appropriate surveillance mechanisms, as well as to make available and encourage individuals to use screening programs. For example, in Saudi Arabia women were not attending free breast cancer screenings and the majority of diagnoses occurred at later stages.¹⁸ An educational campaign to educate the population about the importance of screening and de-stigmatise breast cancer screening targeted all members of society, not just women.¹⁹

Increasing patient awareness of cancer prevention, screening, and care is not an easy task. It requires coordination of messages across institutions and stakeholders, coordination of prevention, diagnosis, and care delivery, and coordination of financing. Awareness problems are more acute in developing countries than in advanced countries, where there are often more organised information resources available to all stakeholders.

The pharmaceutical industry needs to be aware of unmet needs and the resources—including medical, health care delivery infrastructure, and financial—in different healthcare settings to respond to needs with innovations that match available resources.

In addition, increased investor awareness of cancer care challenges can help them reward companies not only based on profit generated through short-term sales but also for the long-term based on the contributions to more general cancer care advancements. These advancements would include innovation in terms of new therapies developed as well as innovation to address other barriers to cancer care, which mean more patients can get these treatments.

Barrier 2: Lack of access to healthcare providers and infrastructure

Insufficient or inadequate healthcare infrastructure is another important barrier to proper cancer care, especially in developing countries. There are too few oncologists (see Exhibit 6), let alone oncologists specialised in novel targeted therapies. There is also a lack of specialised cancer care facilities to meet the patient demand; where these specialised facilities exist, they are often centralised in a few locations with many patients having to travel long distances to obtain cancer care. This applies particularly in big sprawling countries such as Australia and Indonesia or countries with sparsely populated places far from main cities such as Saudi Arabia.

In Australia, the challenges of geography have been partially addressed through the adoption of tele-medicine: trained individuals are given detailed instruction from specialists remotely, allowing a greater number of treatments and a higher quality of care to reach remote areas.

Exhibit 6: Estimate of Number of Oncologists per capita²⁰

Country	Approx no. of Oncologists	Population	Oncologists/ million pop.
Indonesia	200	242.3m	0.83
Thailand	120	69.5m	1.73
Philippines	196	94.9m	2.07
Saudi Arabia	90	28.1m	3.20
Malaysia	100	28.9m	3.47
Vietnam	482	87.8m	5.49
Turkey	550	73.6m	7.47
Egypt	800	82.5m	9.69
USA	10600	311.6m	34.3
UK	1140	64.1m	17.8
France	845	66.0m	12.8

Thailand has 10 dedicated cancer centres whereas Indonesia only has 2 despite being a much larger and sprawling country

LMIC countries have on average 5-10x fewer oncologists per capita than HIC countries such as the USA or UK

Source: IMS Health Expertise, World Bank Population Figures

Patients in industrialized countries benefit from more developed infrastructure and more numerous oncologists to treat patients. They also have well-developed referral systems and third party coverage, which means more patients can get access to the care they need. Nevertheless, there are still gaps within the healthcare systems in these countries. For example, serious illness/palliative care²¹ is under-provided almost everywhere, including countries such as Australia, South Korea and the US.

Barrier 3: Delayed regulatory approvals of new treatments

There are two types of regulatory challenges. The first, which applies to all new medicines, is the limited technical capacity of regulatory bodies to assess new treatments, especially in developing countries. This is compounded by the desire in many countries to carry out their own regulatory assessments, which largely repeat the assessments conducted by regulators such as the FDA or EMA in the United States and European countries to which the treatments are generally available first. This can lead to delays in availability of new medicines in LMIC. Such delays, while not desirable in any disease area, are particularly costly in oncology, where patients may die waiting for a new potentially highly effective treatment to complete regulatory review in their country.

Second, regulatory delays are compounded by the nature of the data package available for novel oncology drugs as described in Exhibit 4 above. Given that this data package falls short of standard requirements—Phase III trials, placebo or active comparators, long duration trials in large populations—new oncology drugs can face even longer delays in getting approved, unless review criteria are adapted. So far, there are also no effective and efficient methods in place to collect real world data once a novel treatment—often with limited pre-marketing data—launches. This real world data could be used in order to support expedited processes to make treatments available to cancer patients more quickly.

Barrier 4: Delayed or no reimbursement of novel cancer therapies, due, in part, to challenges in assessing and valuing novel cancer therapies

Many countries take longer to assess and reimburse novel cancer drugs than other therapies. Standard Health Technology Assessment [HTA] processes do not take into account the different data packages that oncology drugs have (see Exhibit 4). They typically demand Phase III trials against active comparators with large samples and long durations. As novel oncology therapies cannot meet these requirements, health systems may decline to reimburse them or take much longer to make a reimbursement decision than for other medicines.

For example, decision makers in Taiwan have a structured process for deciding on reimbursement, which differentiates between categories of drugs based on level of innovation. Deliberations on reimbursement for oncology drugs have taken much longer than those for all new innovative drugs on average (an average of 934 days for a new oncology drug to be listed compared to 415 days for all new innovative drugs). It takes 4 months for a new drug to be discussed in the Expert Meeting. New drugs are discussed an average of 1.74 times at Expert Meetings, while new oncology drugs are discussed an average of 3.4 times. After the Expert Meeting, it takes another 2 months for a new drug to be included in the Pharmaceutical Benefit and Reimbursement System [PBRS] agenda for consideration. Once it is

approved by the PBRs, it takes another 2–3 months for a price to be effective.²²

Additionally, countries which use defined cost-effectiveness ratios apply the same Incremental Cost Effectiveness Ratio [ICER] thresholds to novel oncology medicines as to other medicines. The relatively limited evidence at launch and the uncertainty of the benefits being realised in practice often lead to denial or delay in reimbursement for these treatments.

Health systems recognise the inadequacies of the current approaches and have tried to address these through higher ICER thresholds for cancer drugs (such as in the UK, or South Korea where new products with no alternatives are exempt from pharmacoeconomic evaluation) or creating separate high-cost drug funds to provide access to new cancer therapies. In the UK, the Cancer Drug Fund is a specific pot of money to provide access to important oncology products that do not pass the NICE cost-effectiveness evaluation. A (controversial) intervention like the Cancer Drug Fund does highlight the need for innovative processes in pricing, financing, and reimbursing for new cancer therapies.

Barrier 5: Limited affordability due to funding and pricing challenges

Most patients, irrespective of country, cannot afford cancer treatment costs solely out of pocket, and need reimbursement, or other form of financial assistance.²³ This is partly due to high and growing prices of cancer therapeutics and increasing complexity of care, as discussed in the previous sections.

Most high-income countries have robust public or private insurance systems that pay for large proportions of the costs of cancer care. However, these systems too face funding pressures and have resorted to special mechanisms such as catastrophic insurance coverage or high-cost drugs funds to cover new therapies. Some middle-income countries (e.g., Brazil and Russia) also have established special funds to cover high-cost, high-value medicines in high unmet need areas. However, given the lower levels of affordability of new drugs in these countries compared to developed countries, fewer therapies for fewer patients are covered.

The affordability barrier is particularly acute in lower income countries. Many LMICs are moving towards universal health coverage and may use the WHO Essential Medicines Model List [EML]²⁴ as a basis for designing medicines benefit packages. In 2015, WHO added some innovative cancer therapies to the EML. However, novel cancer therapies—and the required tests—may not be part of benefit packages in countries or may exceed coverage caps, requiring out of pocket payments specifically from cancer patients. For example, China and the Philippines cover cancer care for some patients and for some therapies, with annual reimbursement caps. Differences between caps and charges have to be borne by the patient. While a cap may apply to insured members with any condition, it is particularly constraining for patients with cancer due to the high costs of care.

There have been efforts to bridge these funding gaps. Sometimes, charities such as the Philippines Charity Sweepstakes Office (PCSO) or the Lalla Salma foundation in Morocco cover some of the costs of care for some patients. Pharmaceutical companies also run patient assistance programmes (such as the Glivec International Patient Assistance Program [GIPAP]),²⁵ that cover partly or in full the costs of treatment for patients based on income criteria. Additionally, pharmaceutical companies also work with payers in some countries (e.g., provincial payers in China) to share part of the costs of treatments. The specific designs of these programmes vary, but they effectively provide the medicines at lower cost, especially to poorer patients.

Managed entry agreements (MEAs)²⁶—contracts between payers and companies to manage budgets, mitigate risk due to clinical or financial uncertainties, and provide funding for oncology therapies—are increasingly used in some countries. MEAs can be based on outcomes, capped volumes or budgets or other risk sharing agreements. For example, Korea has recently implemented MEAs for some orphan and new cancer treatments that have passed the Korean evaluation agency’s pharmacoeconomic assessment for specific conditions. While MEAs may be a strategy to mitigate uncertainty of outcomes and/or financial risks, they do require expertise and appropriate infrastructure for effective implementation.

Separate budgets, philanthropy, patient assistance schemes, and MEAs are examples of attempts to finance cancer treatments and care. These examples are limited and there is a lack of an accepted framework for evaluating and potentially implementing more widely these and other approaches. In addition, multi-stakeholder dialogue and collaborative empirical work are needed on the development, funding and pricing of novel cancer therapies.

Shared learning and collaborative action research can address barriers to improving cancer care

We have summarised several of the main barriers to improving cancer patient care across countries. The extent and importance of the barriers vary by country, and we have also seen novel approaches in some countries to address these barriers. However, many countries still seek practical and affordable approaches to address current and future challenges.

We believe that countries can begin to address barriers to and improve patient care through a process of international shared learning and collaborative action research by policy makers, payers, academics, providers, drug and diagnostic test manufacturers and other concerned stakeholders. Discussing, debating and pressure testing different approaches in a multi-stakeholder, international forum can lead to the development of new insights, ideas and promising approaches, emerging from and tailored to country contexts.

This process would involve sharing of experience and knowledge by experts and practitioners, the collaborative identification of challenges and the development and testing of novel approaches to address these challenges. Stakeholders can implement new approaches, observe the effects, and analyse what worked and what did not in their own settings. They can then share experiences and knowledge to inform the development and implementation of the next generation of approaches in a collaborative and iterative process. Such an approach provides flexibility to different countries and stakeholders to prioritise issues along the care spectrum they address at a given point in time and the approaches they devise and implement, while at the same time adding to a global body of knowledge that can benefit all countries.

This shared learning and collaborative action research to continuously reform health systems is all the more critical as the burden of cancer grows, and as more medicines to treat cancer become available. Such a strategy is necessary to improve cancer care in general, including, where appropriate, rapid, effective, safe, and affordable access to and appropriate use of new treatments.

We believe that a dynamic evidence- and practice-informed multi-stakeholder process can help improve cancer care for three reasons. First, the rapidly changing contexts of cancer care and health system development offer opportunities to optimize cancer care and outcomes and at the same time present challenges to health systems, continually for the foreseeable future. Different stakeholder perspectives are needed within systems to identify and implement changes that strike balances continually between optimal care and system sustainability.

Second, given that different health systems are at different stages of development in terms of providing and financing health care in general and cancer care in particular, different stakeholder perspectives, policies, programs and experiences across systems can facilitate the identification and implementation of feasible changes in individual systems.

Third, evidence is needed to inform continually needed change. That evidence can jointly, and likely more efficiently and effectively be generated through collaboration among stakeholders across systems using systematic approaches to identifying data and defining and applying metrics for inputs, processes and outcomes. Jointly generated evidence, based on common understandings of data and metrics, can then inform both the actions of the cross-country multi-stakeholder IMPACT members and those of the within-country decision makers.

This effort builds on previous examples of shared international learning in healthcare, with a few differences

Similar initiatives have taken place in the past where stakeholders have come together from across countries and positions to learn from each other. The International Network for the Rational Use of Drugs is a network of multi-disciplinary teams in countries who conduct research and capacity strengthening to improve use of medicines.²⁷ Work of INRUD groups has been shared throughout the global medicines community in three landmark International Conferences for Improving Use of Medicines (ICIUM) that resulted in evidence-informed research and policy agendas. Enacting one of the recommendations of the 2004 ICIUM, the Medicines and Insurance Coverage (MedIC)²⁸ Initiative builds capacity for medicines policy development, monitoring and evaluation, with a focus on emerging and expanding insurance systems in LMIC. Under Health Systems Global,²⁹ a unique global community of researchers and policy makers committed to contributing to the attainment of better health, equity and well-being across the world, the Medicines in Health Systems Thematic Working Group³⁰ provides a virtual platform for all stakeholders to engage in dialogue on improving medicines availability, access, use, and affordability.

IMPACT is poised to learn from the organisation and outcomes of these and similar past programmes. Importantly, none of the existing shared learning initiatives focus specifically on cancer therapeutics in health systems or have been able to implement an iterative process of generating and translating evidence into action at scale. Since one of the core aims of the IMPACT initiative is to support dynamic health care delivery and financing system change for improved cancer care, continued engagement over time among organizations and stakeholders is needed, and an ongoing and sustainable funding source will have to be established. Funding will also be needed to support joint action research of the initiative which is discussed in more detail later on.

Unlike most shared learning initiatives to date, the unique aspect of IMPACT is that it includes industry as one key stakeholder in a multi-country, multi-stakeholder, multi-disciplinary set of partners, based on the assumption that improvement of cancer care cannot be achieved by any one stakeholder in isolation.

The IMPACT network has been set up to facilitate such shared learning and action research through a commonly agreed approach, template and set of metrics

The Improving Management for Patients and Access to Cancer Therapies [IMPACT] Network has been set up by a working group of academics and practitioners. The goal of IMPACT is to facilitate and catalyse shared learning by senior thought leaders and stakeholders from developed and developing countries, with the aim of improving cancer care. The IMPACT Working Group's vision is to build an active network of engaged high-level stakeholders from a range of countries by supporting interactions and engagement from governments, professional associations, health care delivery systems, payers, academia, charitable organisations, patient support groups and industry. Our aspiration is that such shared learning will help stakeholders to initiate local conversations to generate evidence for informed policies and programs to improve cancer care in their countries.

The first IMPACT workshop held in Singapore in 2015 aimed to establish this network. The workshop created the opportunity for stakeholders from 11 countries to share experiences and set a call to action that commits participants to learn from each other, take lessons back to their countries and engage with local stakeholders to bring about improvements in cancer care in their countries.

The IMPACT 2015 workshop saw high levels of engagement by all participants. It addressed 7 topics:³¹

- **The Future of Oncology:** Promises and challenges of forthcoming innovative and complex cancer treatments and implications for health systems in valuing and providing access to these treatments
- **Local Access Policies and Current Challenges:** Access to novel cancer therapeutics in different countries and challenges systems face
- **Systemic Cancer Care Challenges:** Cancer care challenges at each stage of the cancer care pathway, from prevention to survivorship care
- **Approaches for Early Access to Novel Treatments:** Experiences with regulatory harmonisation or adaptive licensing
- **Clinical Data Packages and HTA Implications:** Challenges current HTA systems face in assessing novel oncology therapies and ideas to overcome those
- **Designing MEAs:** Novel agreements to provide access to cancer treatments while managing outcomes and financial risks and the challenges MEAs face in practice
- **Real World Evidence (RWE) and New Information Sets:** The promise, and pitfalls, of RWE in addressing some of the challenges in making novel therapies available to patients

IMPACT Workshop participants agreed on the following key takeaways:

- **Integrated approaches** are needed to address supply (e.g., reimbursement) & demand (e.g., diagnosis) barriers.
- **Regulatory delay** is a barrier in most countries; **international sharing of expertise & resources** may help to expedite the regulatory process.
- **Efficient and timely HTA** is important; with a need to replace the prevailing culture of submit, reject & re-submit with more efficient processes for all involved, which may include
 - HTA in parallel with the regulatory process
 - Pricing discussions separate and at the end of HTA
 - Multi Criteria Decision Analysis as a technical approach
- **MEAs** should become a more widely used **part** of the **listing process** to share clinical and financial risk, and to result in improved evidence generation
 - **Confidentiality** around the terms of MEAs key is to success as is **transparency** of the process to reach MEAs.
 - Legal expertise (e.g., contract, data privacy) and supporting infrastructure (e.g., ability to collect and analyse data) requirements are critical for successful MEAs.
- **Shared learning** from experiences **across countries and stakeholders** can improve systems and processes.
- **Patients and their need for timely, appropriate, and affordable therapy** should be at the centre of all decisions.

Participants also agreed on a concrete call to action:

- Take learnings from the workshop **back to their own country and engage stakeholders** to discuss and bring about needed changes to improve cancer patient care.
- **Share learnings** with the **Working Group** and reach out to **each other** for specific advice on issues IMPACT members face. Example questions included:
 - How does the German system work? Which are, MEA examples, examples of national cancer control plans? How have others implemented or improved survivor and palliative care?
- Engage with **regional bodies** such as ASEAN, PAHO or countries with similar systems to increase regulatory harmonization (e.g., Singapore has experience in harmonization of regulatory requirements with Australia, Canada and Switzerland).
- In some countries, hold **local IMPACT** events to increase awareness among stakeholders of cancer care needs.
- Contribute to the **shaping of the future IMPACT agenda**, help **expand the IMPACT network** and increase participation in IMPACT events.

We want to build on this initial success and create a platform for mid- to long-term action

As Exhibits 7 and 8 show, IMPACT 2015 was the first step in a stepwise endeavour that seeks to create tangible impact on cancer care and outcomes, especially in low and middle-income countries. The first step engages IMPACT participants in discrete periodic events on specific topics. The meetings have expert presentations on these topics followed by interactive discussions between participants. This would result in summary reports to synthesise learnings from the meetings, such as the report of the first IMPACT meeting. The framework for periodic meetings has been established in 2015; future meetings can include topics identified by the initial participants and other interested country stakeholders. Step 1 allows continued engagement with a network of international stakeholders and the establishment of international relationships for information and experience sharing.

In the next step, the goal of IMPACT is to widen the network to a few more countries and include more stakeholders. These stakeholders will represent:

- Senior policy makers and leaders of care delivery and financing institutions
- Operational staff in the respective offices and institutions
- Academics and experts who provide research and policy guidance
- Clinicians who deliver cancer care along the care spectrum including those who test innovative therapeutic approaches
- Patient associations and civil society leaders engaged in improving cancer care
- Bio-pharmaceutical and diagnostic industries

In addition to widening the network, the focus of IMPACT would also expand from sharing of international experiences and expertise to collaboratively generating ideas and tangible actions that can be taken back by stakeholders for implementation in their countries. This can be done through the development of an “action research” agenda. This agenda would include methods to identify and prioritize actions, strategies for implementation, definition of input and outcome metrics and how to measure those in systems that have different kinds of data, and strategies for disseminating the learning. This step would foster a more active network of participants with more interaction, and therefore increased shared learning. The results can be captured and shared in reports, publications and case studies. Key elements of such learning can be captured in a periodic white paper.

Short Term	Short-Medium Term	Mid–Long Term
<ul style="list-style-type: none"> ✓ Dialogue with stakeholders who can initiate change in their country <ul style="list-style-type: none"> • Senior policy makers, payers, technical experts, KOLs and other influencers ✓ Education and stakeholder buy-in <ul style="list-style-type: none"> • Successful first meeting with stakeholders interested in improving cancer care • Acknowledgment from the countries of challenges and willingness to change 	<ul style="list-style-type: none"> • Dialogue with more representatives and from more countries... <ul style="list-style-type: none"> • Increased awareness of best practice through sharing of materials after first workshop and holding of further meetings • Local dissemination of IMPACT learnings and dialogue on change with local stakeholders • ...to develop approaches and concrete actions to take back for implementation <ul style="list-style-type: none"> • Jointly developed at workshop through a shared learning approach 	<ul style="list-style-type: none"> • Implementation of approaches <ul style="list-style-type: none"> • Approaches with activities developed at workshop implemented in practice e.g. action research to assess impact • Effect of implementation observed to obtain lessons and share in future IMPACT meetings • Observed tangible impact on patient access to care <ul style="list-style-type: none"> • Reduction in regulatory and reimbursement delays • Reduction in broader systemic barriers that prevent patient access to better cancer care

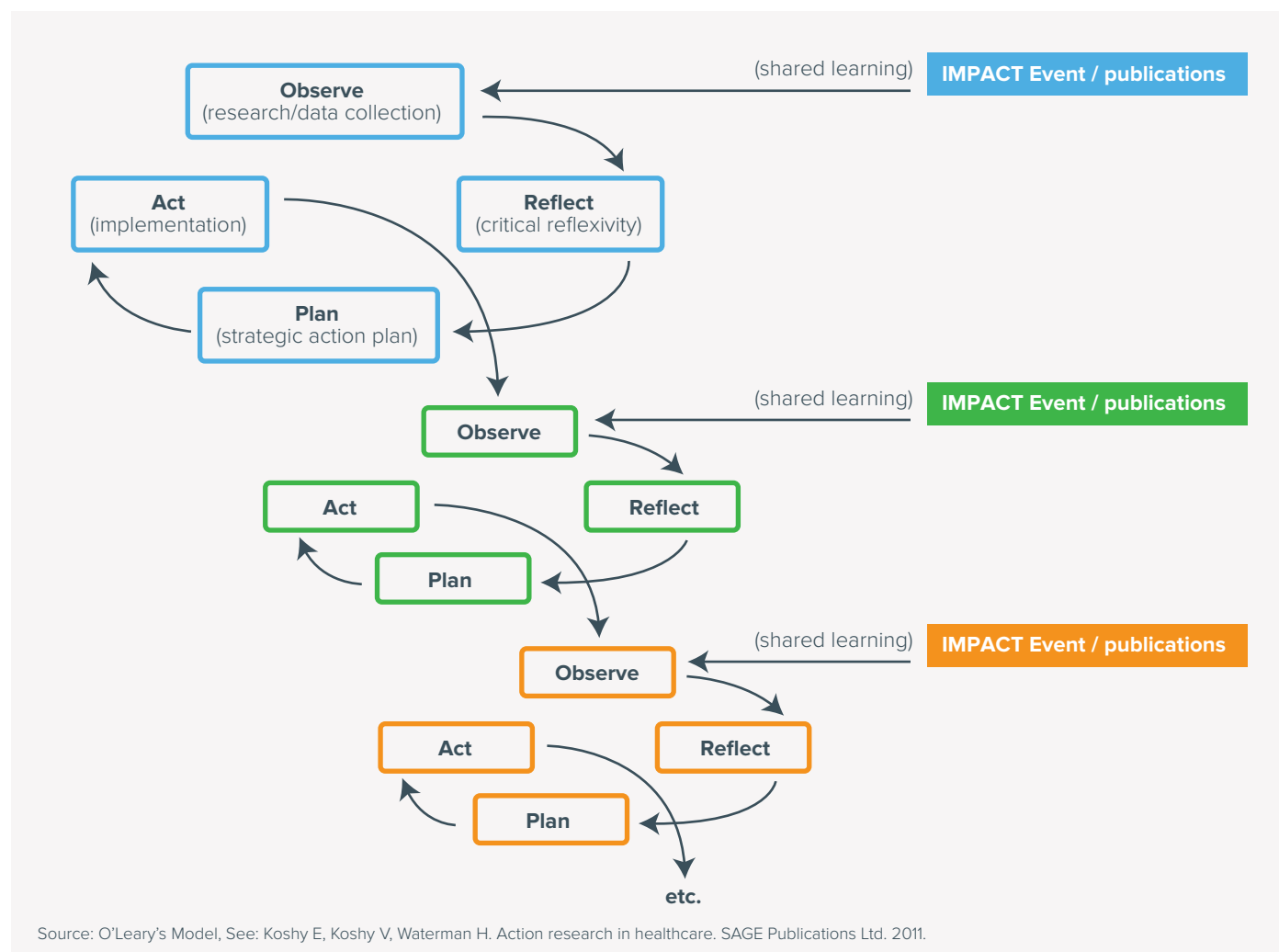
Exhibit 8: Implementation of Impact Objectives in Three Steps of Growing Engagement and Action



The third step is to implement the ideas and actions and observe and analyse their effects to inform further action and research in an iterative way to foster continuous improvement. The second and third steps draw upon the field of “action research”, which is an approach commonly used for improving conditions and practices in different areas of social policy. Applied to health care delivery and policy making, action research involves healthcare practitioners and other stakeholders conducting systematic enquiries into specific problems, piloting new approaches, understanding implementation processes, and carefully analysing and comparing both desired and potential undesired outcomes.

One of the many models used to depict how action research functions is O’Leary’s cycles of research,³² which we have adapted for characterising Step 3. The purpose of action research is to help practitioners improve their own practices, which in turn can enhance their working environments and hence those of others in the environments such as patients, providers, and policy makers. While there is no ‘silver bullet’ answer to be found from this research into health system functioning, action research enables country systems to ask questions and seek evidence for choosing and updating approaches.

Exhibit 9: Outcome-Based Shared Learning and Action Research



The action research approach fits very well with IMPACT objectives. IMPACT participants include practitioners, policy makers, academics, industry and other experts engaged in development of cancer treatment strategies, delivery and financing of cancer care, and decisions that impact cancer care availability, access, quality, and affordability. IMPACT events will develop approaches for addressing challenges in cancer care in different settings. Approaches can be implemented by participants as part of their regular work, but with the responsibility to observe, record and analyse the outcomes of their actions. The results of such action research can be shared at subsequent IMPACT events. Successful actions can be scaled up and new or modified actions devised to address new or continuing challenges.³³

This can be iteratively done within an 'IMPACT Research Framework', jointly developed by the IMPACT Working Group with input from the IMPACT network. This framework will provide guidance on templates, approaches, metrics, data, and analyses needed to conduct such outcomes-based action research successfully. Research outcomes can be published as white papers or in journals for dissemination.

The adoption of such action research to develop solutions to address cancer care challenges has the potential to inform decisions in an evidence-based and transparent way. Since action research is conducted 'in situ', its outcomes are grounded in local context and reality and therefore may have a higher chance of achieving successful outcomes. Action research results can also provide lessons for other health systems with similar situations and problems. The IMPACT action research template, including measurement approaches and metrics, can provide countries with resources to assess and share outcomes, while allowing for the evolving nature of their individual healthcare systems. It supports a dynamic process of continuous, measurable and iterative improvement rather than the achievement of a perfect health system 'end state.' This is important as health systems will be constantly evolving due to incessant societal, industry and technological advances.

The outcomes-based collaborative shared learning and action research approach provides flexibility for countries and stakeholders to focus on areas relevant to them

Each country is at a different stage on the journey toward quality, affordable, patient-centered care for all, not only due to different starting points, but also varying definitions of “what good looks like”. Since there is no one optimal system, each country must guide the development of its system based on what societies believe is good. What good looks like will differ based on aspects including societal and cultural pressures and norms as well as health system history, capabilities and priorities. Within countries, different stakeholders will be interested in different topics, and therefore will identify different priorities for action.

Given the diversity of different countries and stakeholders, this paper proposes an initial six dimension framework for consideration of novel cancer treatments in the health system and cancer care evolution, as shown in Exhibit 10. Country stakeholders would prioritise questions of interest based on local health system needs as well as stakeholder priorities.

Exhibit 10: Six-Dimensional Framework to Prioritise Areas of Action

Dimension	Question
Appropriate cancer care system	<ul style="list-style-type: none"> How is quality care, across the patient journey, provided?
Appropriate use of oncology treatments	<ul style="list-style-type: none"> How are processes designed to ensure appropriate (effective and safe) use of oncology treatments?
Oncology as part of a fair and sustainable health system	<ul style="list-style-type: none"> How can fair decisions on oncology care be made in the context of competing health system priorities? How can budget impact of innovative oncology diagnostics and medicines be managed, in cooperation with companies?
Timely and equitable access to innovation	<ul style="list-style-type: none"> Do patients have timely access to innovations in oncology treatment? Is this achieved ethically?
Support of future innovation in oncology	<ul style="list-style-type: none"> Which strategies can facilitate needed continued and future innovations in oncology treatments?
Ability to adopt future innovations (agility)	<ul style="list-style-type: none"> How are infrastructure and policies developed to facilitate adoption of future innovations and supportive arrangements such as MEAs?

During IMPACT 2015 we asked country representatives to prioritise these dimensions based on their own experiences and perspectives. The outcome of this exercise is provided in the appendix.

Four factors are critical to the success of a collaborative shared learning and action research programme to improve cancer care

First, following on from the discussion above, the programme must identify specific and concrete areas of action across countries and within different countries for different stakeholders. This must be done based on consultation with the network of stakeholders and reflect local needs and priorities.

Second, the network will need to define the roles of and engagement approaches with the different stakeholders in such a programme. Ideally, we would see the following roles and engagement strategy by stakeholder type as shown in Exhibit 11.

Exhibit 11: Stakeholder Roles and Engagement Strategy

Stakeholder type	Role	Engagement approach
Senior policy makers and institutional leaders (e.g., ministers, heads of government departments)	<ul style="list-style-type: none"> • Provide guidance or senior level support for including approaches to improving cancer care as part of their strategic and organisational plans • Periodically assess achievement of overall strategic objectives 	<ul style="list-style-type: none"> • Brief periodic face to face interactions • Focused on conceptual issues and policy /programme goals
Payers	<ul style="list-style-type: none"> • Provide guidance or senior level support for including what the priority areas for research are • Periodically assess achievement of overall strategic objectives 	<ul style="list-style-type: none"> • Brief periodic face to face interactions • Focused on specific clinical and economic goals
Senior operational staff and technical experts (e.g., HTA bodies)	<ul style="list-style-type: none"> • Devise and implement strategies and actions as relevant to their functional roles (e.g., reforms to HTA processes) • Assess the impact of their strategies and actions and take corrective action as needed • Share results in within country and cross country fora 	<ul style="list-style-type: none"> • Face-to-face and through additional long-distance interactions • Include technical assistance and be centred around specific policy /program designs, implementation, and evaluations
Academics and experts	<ul style="list-style-type: none"> • Provide expertise as needed to ensure successful development and implementation of strategies and actions • Partner to conduct research on the success or otherwise of interventions • Prepare reports and articles to disseminate learning 	<ul style="list-style-type: none"> • Face-to-face and through additional long-distance interactions • Include technical assistance and be centred around specific policy /program designs, implementation, and evaluations

Exhibit 11: Stakeholder Roles and Engagement Strategy *continued*

Stakeholder type	Role	Engagement approach
Clinicians	<ul style="list-style-type: none"> • Provide practical expertise as needed to ensure successful implementation of strategies and actions • Conduct research on the success or otherwise of interventions 	<ul style="list-style-type: none"> • Through senior operational staff as well as technical support • Brief periodic face to face interactions and ongoing online interaction
Patient associations and relevant civil society stakeholders	<ul style="list-style-type: none"> • Provide input into prioritisation of issues to address • Ensure that patients and caregivers have a voice 	<ul style="list-style-type: none"> • Brief periodic face to face interactions • Focused on conceptual issues and policy /programme goals
Industry	<ul style="list-style-type: none"> • Engage in dialogue to identify and test innovative approaches for improving diagnosis and care along the treatment pathway • Engage in dialogue to identify and test innovative approaches to value assessment, pricing and reimbursement 	<ul style="list-style-type: none"> • Regular face to face interactions

Third, we will need to develop a commonly agreed structure and template for the programme and for individual action research projects or pilots that are identified. This template should also incorporate measurable metrics to evaluate the impact of actions, adapted to the data and information system infrastructures available in country settings. This is critical to ensure that the activities selected are properly targeted to improving cancer care in a tangible and quantifiable manner.

Finally, there also needs for a mechanism to identify and obtain funds and resources for the identified action research projects or pilots. The IMPACT 2015 event was funded by Novartis. The aspiration for the future is to expand participation in funding for this effort to other stakeholders, including industry, government, multilateral and not-for-profit organisations. Such funding can support the overall collaborative IMPACT effort as well as specific action research projects that are identified and implemented by the IMPACT network within their health systems.

Going forward, the IMPACT working group will work with the network to plan and implement the programme

Going forward, IMPACT will focus on the following areas:

1. Work with IMPACT 2015 participants to expand the network with their countries
2. Expand the network to include stakeholders from a few other countries
3. Obtain input from 2015 participants and potential future participants to shape the next event's agenda that is focused, action-oriented and tailored to the needs of different countries and stakeholders
4. Hold the next IMPACT event
5. At the event, agree on a draft IMPACT action research framework and identify specific pilot activities for implementation in select countries
6. Begin the development of metrics and measurement approaches to measure and calibrate the impact of action research interventions prioritized by IMPACT members for their countries
7. Identify funding resources and raise funding for the IMPACT events and pilot projects
8. Establish a platform for communication within the network and to those outside the network to gain visibility, share experiences and invite input

The foci for selected pilot projects would be defined jointly by senior leaders, operational staff and other stakeholders in countries, with support from the IMPACT Working Group and network as desired. Projects would be designed, implemented, and evaluated by operational staff. Participation in this process could be staggered, with a small group of countries focusing on one or two cancer care areas and piloting change in their settings, with guidance by the IMPACT working group; these pilot country representatives would then serve as resource persons for the next set of countries piloting change projects. Experiences of the pilot change process would be regularly reported in IMPACT meetings that would, in addition, update IMPACT members on evolving issues in oncology and offer learning and exchange on specific topics.

Appendix

Application of the six-dimensional framework in four countries

During IMPACT 2015 we asked country representatives to prioritise these dimensions based on their own experiences and perspectives. While these do not represent a country-wide view and are based on a small number of respondents, they do represent the heterogeneity of ‘what good looks like’ in Asia. In addition, such an exercise also provides a means to select specific areas of intervention and action in different countries by different stakeholders.

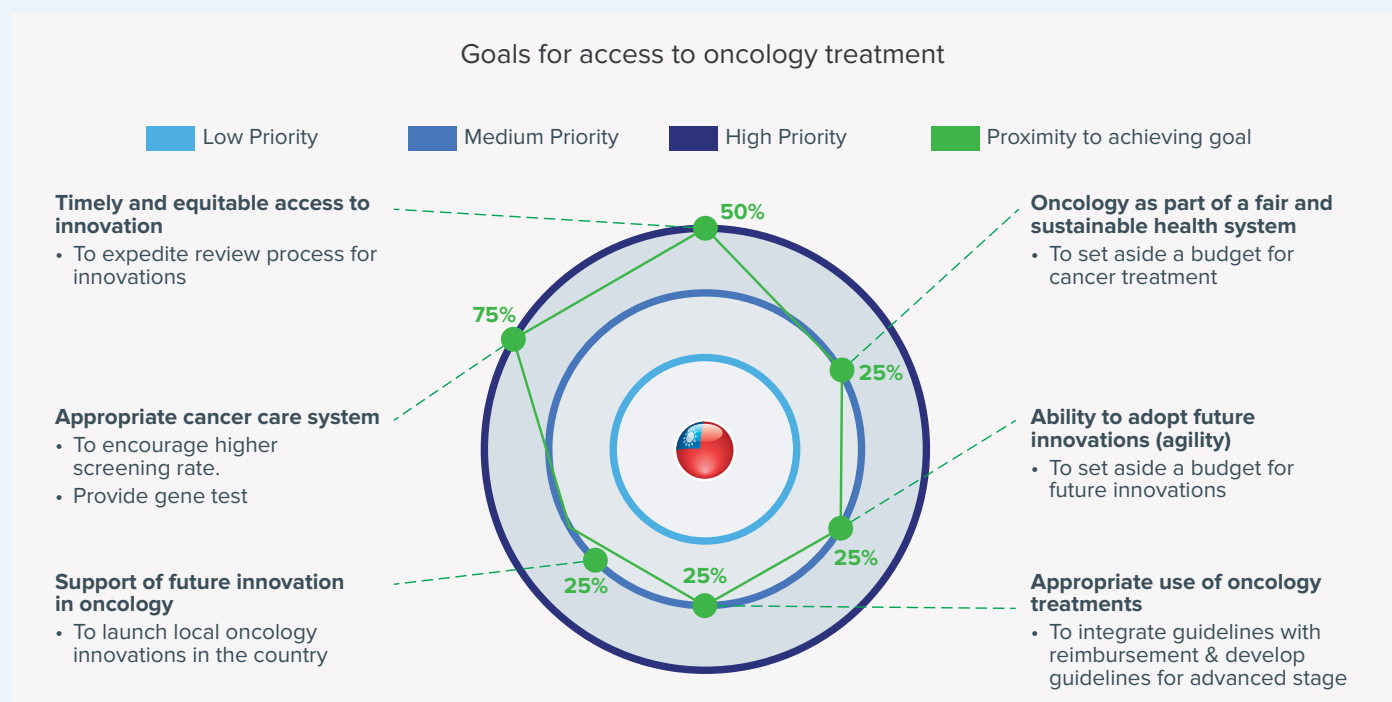
Exhibits A-D show how stakeholders in four countries outlined goals for their health systems based on the challenges they are facing. They were asked to prioritise the different dimensions based on a ‘high’, ‘medium’, or ‘low’ rating. They were also asked to indicate how close they are to achieving that goal. The outcomes of this exercise are discussed below.

Country Example: Taiwan

In Taiwan, speeding up the review process for innovations is a key goal, while providing screening and genetic tests is also a top priority.

A particular goal in Taiwan is to promote local oncology innovation by setting aside a budget for future innovations and investments in cancer care. In order to maximize this, adoption of a better HTA system for cancer products will be required that looks at product value rather than purely budget impact. This reform will need the support of patient groups to ensure that the patient voice is stronger, through more government–patient consultation on access and cancer care decisions.

Exhibit A: Taiwan’s Prioritised Dimensions



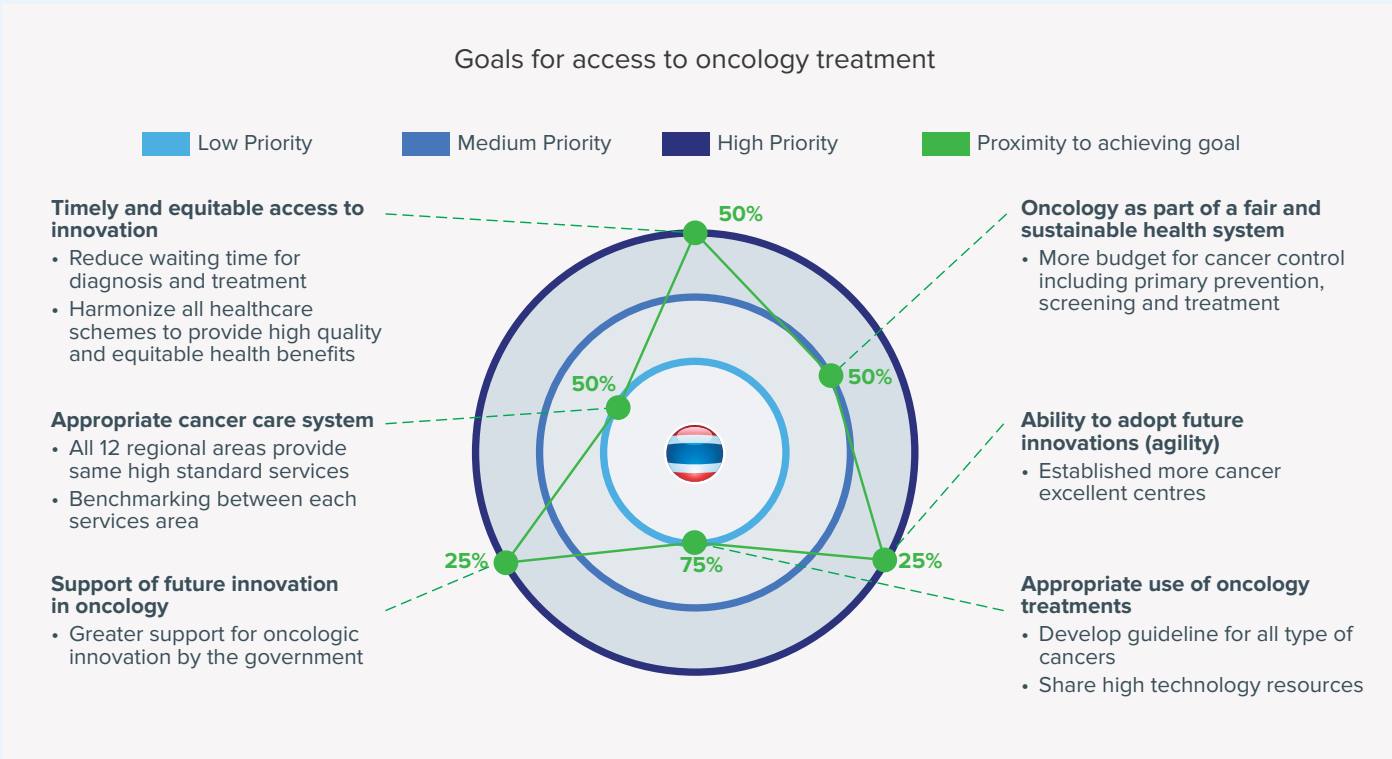
Country Example: Thailand

In Thailand, the highest priority is speeding up the waiting time for diagnosis and treatment. The way this will be achieved is by harmonizing processes, establishing more cancer excellence centres and gaining more support for oncology innovations from the government. The current Cost/QALY threshold of 160,000 Baht is considered a barrier to accessing new oncology treatments, and therefore reform of the pricing system for new drugs is also a priority in Thailand.

Another priority is creating a more equal system. Current pricing and patient access system reforms are being considered, aiming to change the capitation system for hospitals. The current approach incentivises physicians to prescribe the least expensive drugs, possibly without considering best patient outcomes. The necessary infrastructure to monitor patient outcomes is lacking and needs to be improved.

Thailand has recently started to use electronic dossier submission to speed up the approval process for new drugs, with its results yet to be seen. Looking towards the future, improving healthcare system readiness to receive and use innovative products is a strong focus.

Exhibit B: Thailand’s Prioritised Dimensions



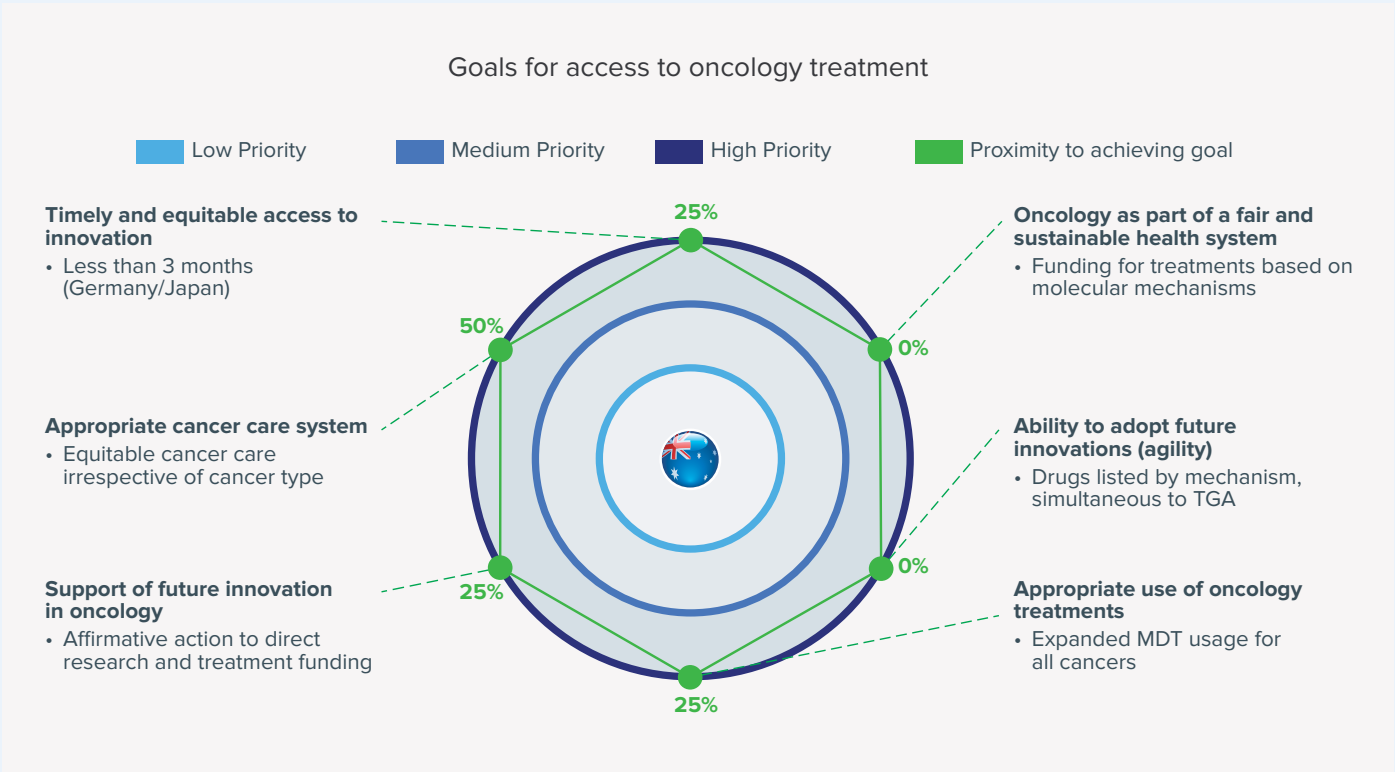
Country Example: Australia

Australia has yet another set of goals. Though the six dimensions are all prioritized at the same level, two goals are very far from being achieved: funding for treatments based on molecular mechanisms, and listing drugs by mechanism of action.

Shortening access timelines in Australia is similar to the goals of other countries, however the impetus comes from a general realisation that access to oncology products is low compared to countries at similar income levels. One way of achieving this is by reducing the back-and-forth between government payers and industry around lowering the price. Currently, there is an expectation that several iterations are necessary before an agreement is made.

There is great societal pressure to increase access to treatments, with strong patient groups and public support which are not as present in other countries. In Australia, this is evident in the success of crowd-funding to gather funds for individual patients.

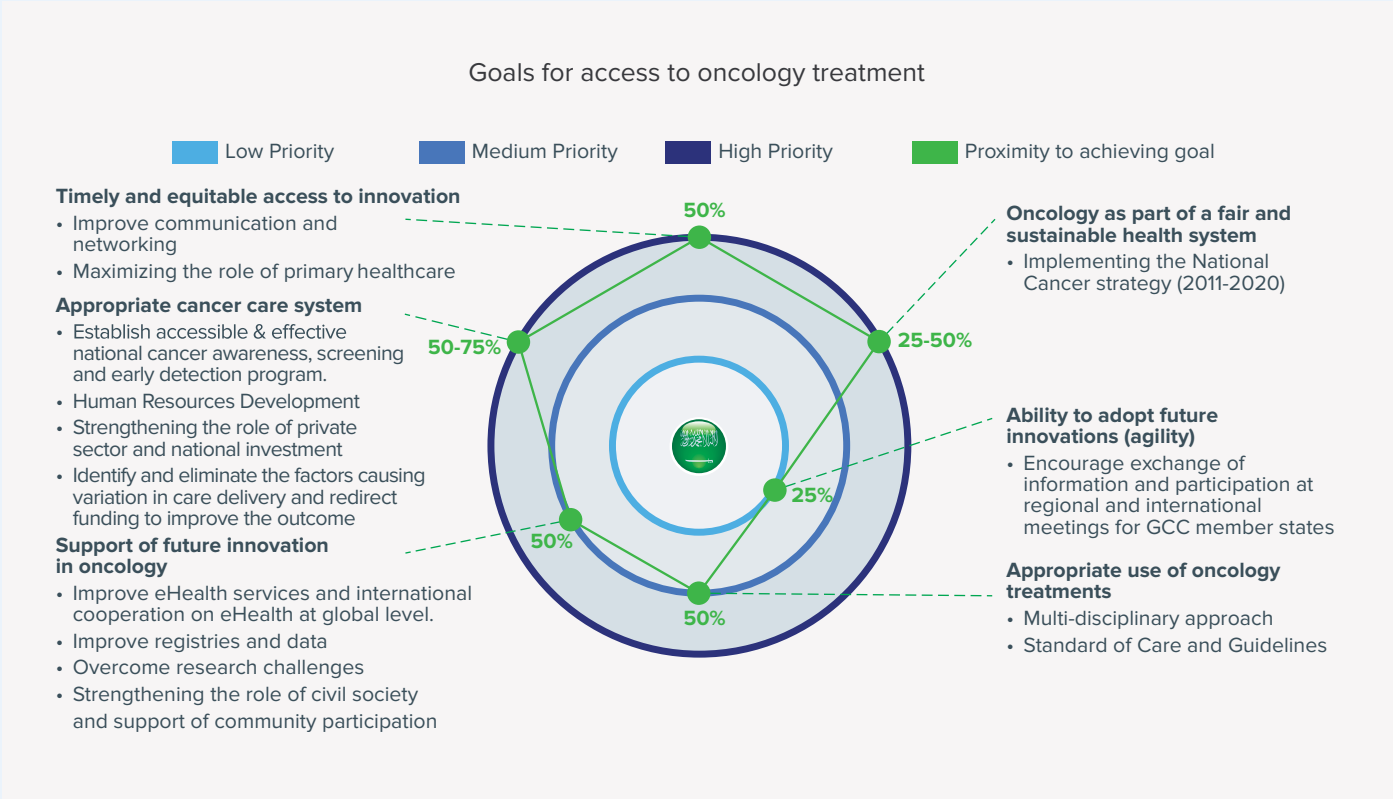
Exhibit C: Australia’s Prioritised Dimensions



Country Example: Saudi Arabia

In Saudi Arabia, the most critical goal is improvement in the overall cancer care system, looking along the entire care pathway, with a particular focus on screening. Saudi’s relatively young population means that targeted education and screening could have a significant impact. Fairness in the system features in Saudi Arabia’s goals. A National Cancer Strategy is in place as a first step. However, implementation of this strategy has room for improvement.

Exhibit D: Saudi Arabia’s Prioritised Dimensions



The above discussion shows that countries will have different assessments and ambitions for each of the 6 dimensions; and within countries these will vary by stakeholder type. The objective of such an exercise is not to compare countries or even stakeholder perspectives; rather, it is to allow stakeholders in each country to identify their priorities, engage in dialogue on how objectives and priorities are synergistic or competing, and identify approaches to balance competing objectives and make progress in chosen priority areas for improving cancer care.

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Raja Shankar is a Senior Principal with the IMS Consulting Group. He advises global pharmaceutical companies on commercial and patient access strategies; and governments and other policy stakeholders on policy reform related to better patient access to medicines. Raja is a thought leader on healthcare policy reform and change across Europe and other global markets. He has published and presented on pricing and patient access issues, especially how to both increase commercial success and effective access to medicine. These include presentations at Harvard, IMS PMA conferences, ISPOR and other external conferences in Europe, Asia and the US. He leads projects across therapeutic areas with a particular interest in upcoming innovations in oncology, cell and gene therapies, central nervous system diseases, auto-immune diseases, CV-metabolic diseases and vaccines. Raja also brings rich experience working across geographies—Europe, US and emerging markets in Asia, Latin America and Africa. He has a deep understanding of payer, policy and other healthcare stakeholders in these geographies. Prior to IMSCG, Raja worked with The World Bank and the Boston Consulting Group.

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Maya Malarski is an Analyst with the IMS Consulting Group. She consults on a broad range of projects across the pharmaceutical and healthcare sectors, with project work spanning the globe, bringing deep analytical insights to clients. She has a special interest in low and middle-income countries and has worked on projects and initiatives in pricing, access and policy positions and strategies across a variety of geographies and stakeholders. Maya holds a Bachelor's degree in Biological Sciences from the University of Oxford.



Quinn Kiefer

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Quinn Kiefer is a Consultant with the IMS Consulting Group. She leads projects across therapy areas for global pharmaceutical companies, from broad access to medicines initiatives to specific brand strategy development. With truly global experience spanning Europe, US, Latin America, Asia and Africa, she has deep insights across stakeholder groups and geographies, including local policies, infrastructure, and appropriate engagement approaches. Quinn has a Masters degree in Decision Science from the London School of Economics.

Acknowledgements

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About the Institute

The IMS Institute for Healthcare Informatics leverages collaborative relationships in the public and private sectors to strengthen the vital role of information in advancing healthcare globally. Its mission is to provide key policy setters and decision makers in the global health sector with unique and transformational insights into healthcare dynamics derived from granular analysis of information.

Fulfilling an essential need within healthcare, the Institute delivers objective, relevant insights and research that accelerate understanding and innovation critical to sound decision making and improved patient care. With access to IMS Health's extensive global data assets and analytics, the Institute works in tandem with a broad set of healthcare stakeholders, including government agencies, academic institutions, the life sciences industry and payers, to drive a research agenda dedicated to addressing today's healthcare challenges.

By collaborating on research of common interest, it builds on a long-standing and extensive tradition of using IMS Health information and expertise to support the advancement of evidence-based healthcare around the world.

Research Agenda

The research agenda for the Institute centers on five areas considered vital to the advancement of healthcare globally:

- The effective use of information by healthcare stakeholders globally to improve health outcomes, reduce costs and increase access to available treatments.
- Optimizing the performance of medical care through better understanding of disease causes, treatment consequences and measures to improve quality and cost of healthcare delivered to patients.
- Understanding the future global role for biopharmaceuticals, the dynamics that shape the market and implications for manufacturers, public and private payers, providers, patients, pharmacists and distributors.
- Researching the role of innovation in health system products, processes and delivery systems, and the business and policy systems that drive innovation.
- Informing and advancing the healthcare agendas in developing nations through information and analysis.

Guiding Principles

The Institute operates from a set of Guiding Principles:

- The advancement of healthcare globally is a vital, continuous process.
- Timely, high-quality and relevant information is critical to sound healthcare decision making.
- Insights gained from information and analysis should be made widely available to healthcare stakeholders.
- Effective use of information is often complex, requiring unique knowledge and expertise.
- The ongoing innovation and reform in all aspects of healthcare require a dynamic approach to understanding the entire healthcare system.
- Personal health information is confidential and patient privacy must be protected.
- The private sector has a valuable role to play in collaborating with the public sector related to the use of healthcare data.

IMS INSTITUTE

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HEALTHCARE INFORMATICS

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