



The Case for Patient Centricity and Continuous Patient Engagement in Diagnostic Care in Asia Pacific

September 2022



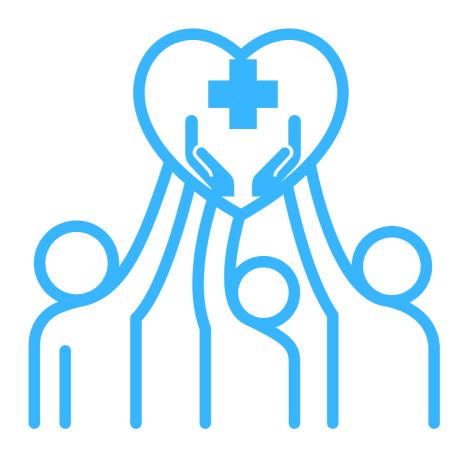


About Us



The Voices Project (TVP) is an independent platform for the exploration and development of policy ideas and discourse between policymakers, the public, advocacy groups, and experts on various aspects of global and public health. Built of former writers, editors and analysts from The Economist Group, WPP Health and global alliance networks, TVP is affiliated to various health development organisations such as WHO WPRO, APIC and The LKY School of Public Policy, This is the latest in a series of policy reports as part of our multi-dimensional initiatives to facilitate dialogue on vital issues in healthcare, which have ranged from medical technology to patient engagement. Our flagship is the TVP Dialogue Series podcast, which brings together multilateral experts, community advocates, and policyshapers in an accessible setting to discuss aspects of health policy and distribution issues.

TVP consists of dedicated interdisciplinary and international members geared toward empowering the voices of communities in solving our greatest health challenges for the decade ahead. www.thevoicesprojectasia.org



Acknowledgements

This article was made possible by the contributions and insights of:

- Dr Ratna Devi, the Chief Executive Officer of Dakshama Health, an organisation that is dedicated to working for access to health, patient education and advocacy. She is also the former Chair of the International Alliance of Patients' Organisations (IAPO)
- Dr K.S. Sachdeva, Regional Director, The UNION South East Asia (a global organisation supported by USAID). Former Govt. Officer who has worked extensively in prestigious public health programs. Dr. Sachdeva has been Deputy Director-General, NACO and has been Deputy Director-General, Central TB Division.
- Professor Byung Soo Yoo, a Cardiologist at Wonju Severance Christian Hospital, South Korea, with a specialty in heart failure and high blood pressure

This report is an initiative of The Voices Project, an independent knowledge generation and policy exploration platform with bases in Singapore, Toronto, and across Asia in partnership with Dia:gram – a publication from Roche Diagnostics Asia Pacific that explores the forces transforming healthcare across the region. It was authored by a team of independent researchers and analysts.



Table of Contents

Purpose	(3)
Introduction – What Is Patient Engagement & Why Does It Matter?	(4)
What is Patient Engagement?	
What Impact does Patient Engagement have on Health Outcomes?	
What is the Patient Engagement Landscape in Asia Pacific?	
Measuring Patient Engagement	(6)
Causes of Patient Engagement Deficit in Asian Societies	(10)
Accessibility & Ease of Access	
Trust in Authority	
Cultural Factors	
Patient Centricity as a Model to Bolster Patient Engagement in Asia Pacific	(13)
Conclusion – Recommendations to Stakeholders	(15)
Recommendations for Policymakers	
Recommendations for Healthcare Professionals	
Recommendations for Other Stakeholders	



Purpose

The purpose of this paper is to examine and understand the state of patient engagement in the Asia Pacific region, the importance of patient engagement in the context of diagnostic care, and actions that stakeholders can take to increase patient engagement. While the ability to engage with the world of healthcare is determined by the availability, accessibility, and efficiency of healthcare systems and infrastructure; people's willingness to engage with the healthcare sector is tied to culture, trust, and beliefs. As an approach to health promotion, it entails both the proactive involvement by health systems of patients throughout their healthcare journey and a reciprocal willingness of members of the public to engage with the healthcare ecosystem — as manifested in screening and preventive care, community-based care, health information seeking behaviours, and home-based monitoring and treatment.

In this report, we examine patient engagement as a crucial and overlooked factor in ensuring the efficacy of diagnostic care in the context of Asia Pacific, a region experiencing a deficit of patient engagement.^{7,8,9,10} We begin by examining what patient engagement is and why it is important before setting forth an approach to measuring it, understanding the causes of the patient engagement deficit in Asia Pacific, and examining patient centricity as a paradigm shift to increase patient engagement.

In The Voices Project's most recent white paper — Health Tech: A Silver Bullet for Equity? — The primary focus was on the importance of solutions to barriers in access to and disparities in quality of healthcare as part of Asia's health strategy over the coming decade. In addition to increasing access and reducing qualitative disparities, increasing patient engagement is the third crucial factor for the health and public policy communities to consider in developing effective health promotion strategies as we progress into the middle of the twenty first century.



Introduction:

What Is Patient Engagement & Why Does It Matter?

What is Patient Engagement?

Patient engagement, put broadly, refers to patients' and potential patients' interest in, commitment to, and reliance on healthcare resources.^{1,7,8,9} While access to healthcare, which receives the bulk of stakeholder attention, is a measure of the supply of healthcare resources; patient engagement is a measure of demand for healthcare resources.^{24,25}

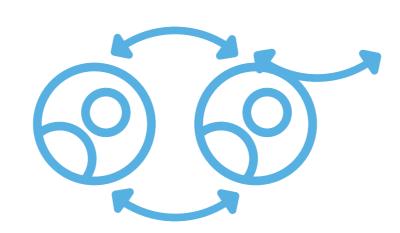
While conventional wisdom dictates that ensuring supply and awareness of healthcare resources will, in and of, itself fill a gap for which demand must already exist, the reality on the ground is that creating demand for previously unfamiliar healthcare resources is an exercise in behavioural change. Meaning that successful patient engagement is more a function of behavioural science than medical science, with its impact felt across the healthcare ecosystem.

What Impact does Patient Engagement have on Health Outcomes?

Ensuring a greater degree of patient engagement from a larger degree of a given population is key to ensuring that the benefits of all healthcare resources are realised. In economic terms, this derives from the nature of consumer demand – the demand for a given product or service increases as its perceived utility and a consumer's knowledge of it, which is subjective to each class of consumers, increases. The efficacy of healthcare resources which patients must choose (e.g. diagnostic services, preventive care, regular screenings) in achieving their promised health outcomes (e.g. preventing serious illness, increasing quality/length of life, and lowering long-term cost of healthcare through early diagnosis & treatment and patient compliance) is thus tied to stimulating patient engagement – in other words, tied to increasing their perceived subjective utility to patients.

Applied to diagnostic care, this can be summarised as follows:

- Greater patient engagement yields:
 - o Greater interest in routine screenings for early detection, which in turn leads to a greater likelihood of receiving treatment as early as possible
 - o Greater patient compliance with Healthcare Professionals (HCP) advice, recommendations, and prescriptions
 - o Greater trust in HCPs and health promotion authorities



- Together, these three consequences of greater patient engagement increase the extent to which diagnostic care:
 - o Prevents serious illness
 - o Increases quality/length of patients' lives
 - o Lowers the long-term cost of healthcare in a given society

This means that – in addition to redoubling efforts to increase access to diagnostic care – stakeholders must act to increase patient engagement and thus the degree to which patients *choose* to access/continue accessing diagnostic care.

What is the Patient Engagement Landscape in Asia Pacific?

Based on a series of interviews with a representative sample of regional experts and on an examination of existing literature, our findings show that patient engagement in the region is:

1) Highly variable depending on geography (incl. urban/rural divides) 2) Generally lacking for significant population-segments in each market 3) Not adequately emphasised by stakeholders including policymakers;

providers of diagnostic technology; and – most importantly – frontline HCPs, the first & most familiar point of interaction with healthcare systems for members of the public.

The factors most acutely posing a barrier to patient engagement in the region are:

- Accessibility & Ease of Access: The extent to which diagnostic care is not only available but also easy for local communities to access & understand
- Trust in Authority: The extent to which members of the community trust the recommendations of HCPs and authorities such as health ministries, the World Health Organisation, and other stakeholders in the healthcare sector
- Cultural: Factors such as cultural norms, education, traditional understandings of health

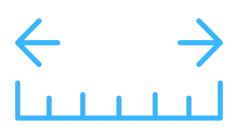
Measuring Patient Engagement

The most important hurdle to overcome in developing an understanding of patient engagement is measuring it. As outlined in the introduction; in measuring it, we can treat it as equivalent to the notion of consumer demand in economics, which is fundamentally driven by the *perceived utility* of a product or service in the minds of consumers. On its own, even when we operationalise it as simply as "how useful or important do patients view diagnostic care", 'patient engagement' has the aura of a vague and qualitative buzzword — not unlike 'synergy' or 'growth mindset'. Accordingly, if we are to draw any meaningful insight beyond simply agreeing that patient engagement is important in improving health outcomes, we need to identify tangible and meaningful indicators that can give members of the healthcare community as quantitative a grasp as possible of patient engagement in their communities.

At the broadest possible level, measuring patient engagement means ascertaining how effectively stakeholders in the healthcare community are convincing patients & community members of the *subjective utility* of diagnostic care to them. This means that we are *not* focusing on measuring patients' awareness of the benefits of diagnostic care for society at large or for healthcare systems—i.e. we are *not* simply telling patients that diagnostic care lowers long-term costs for healthcare systems, lengthens patient lives, and has the potential to prevent serious illness. Instead, we are looking for indicators that influence patient behaviour, in a given society or demographic group, to actively seek diagnostic care to maintain good health or improve outcomes.

Keeping this in mind, we have identified three distinct indicators based on the input we received from the experts in the healthcare sector and patient advocates we consulted with 10:

- 1) Integration of healthcare services (as a measure of ease of access/accessibility):
 - One of the biggest factors dissuading patients from seeking out diagnostic care and other non-obvious healthcare needs is the overly complex nature of healthcare networks, in which patients are often expected to shuttle between different and disparate specialist experts and medical centres.
 - As veteran patient advocate Dr Devi puts it, patients in the region "meander between a lot of different journeys before they reach the right place", dissuading even patients in need of immediate care (e.g. stroke patients) from attempting to seek care. In other words, *complexity* and *lack of integration* in healthcare systems suppresses patient engagement.



- This is essentially a battle between the *perceived utility* of seeking care and the *perceived futility* of navigating a complex, non-integrated patchwork of specialists far removed from familiar primary care providers something which especially impacts patients in rural areas and less affluent patients without the means to access private healthcare facilities.
- Consequently, the degree to which diagnostic care is provided at/close to primary care providers (i.e. GPs/family doctors, community clinics) or is something which primary care providers can refer/direct patients to is an indicator of patient engagement.
- 2) Trust in & comfort with medical professionals (as a measure of trust in authority)
 - As a result of extensive focus on trust in authority as a topic in public policy and as an object of journalistic intrigue, there is an extensive body of research into the relative trust communities place in authority figures.^{12,13,14,15}
 - For our purposes, trust in medical professionals specifically the medical professionals closest to the frontline with the relevant knowledge to direct patients to diagnostic care is an indicator of patient engagement to the extent that patients have a high degree of comfort with & access to such professionals.
 - Measuring this entails:
 - Identifying the category of medical professional *closest to the frontline* with the ability to engage patients on diagnostic care
 - Measuring the trust of the relevant community or demographic/geographical group in this category of medical professional in relation to other authority figures (i.e. other medical professionals, public authorities, traditional/spiritual authorities)
 - Measuring the comfort level and frequency of interaction community members typically have with this category of medical professional, which should include measuring the prevalence of the "paternalistic attitude" often associated with healthcare in developing countries, and the gender biases that ensue as a result.
- 3) Health literacy (as a measure of *cultural factors*)
 - While, as Dr Devi points out, patients in developed markets and higher educated stratae of the Asia Pacific population typically have a high degree of health literacy and attach a corresponding level of cultural importance to diagnostic care (e.g. the nearly ritualised status of mammograms, prostate exams, and shingles vaccines for adults who reach a designated age); the same is not true for much of our region or for certain age groups such as, the working adult population (e.g. low push on cervical cancer screenings).

- The majority of patients typically do not have a comparable level of health literacy—as outlined in a 2019 study published in the journal *Public Health*, an average of 55.3% of the South East Asian population struggle with limited health literacy owing to factors such as educational, income, and socio-economic background²²—and there has thus not been a cultural routinisation of diagnostic care in the majority of markets within the region
- Measuring this factor should entail assessing the awareness of community members of the positive benefits of diagnostic care *and* the importance they attach to these factors thus addressing both the disparity in factual knowledge and the disparity in the perceived utility of diagnostic care

Grounding our discussions with experts and our examination of existing information in these three factors has meant that our discussion of patient engagement in this article is solidly rooted in an understanding of the concept as a tangible, quantifiable aspect of the patient experience. Each of these indicators represents an area in which the Asia Pacific region is generally lacking at present. As such, this itemisation serves two purposes:

- 1) It serves to delineate the factors we are taking into account when asserting that there is a patient engagement deficit in the region,
- 2) It provides a roadmap to stimulate patient engagement and thus bridge the region's gap in demand for diagnostic care.

Each of these indicators is a contextualised adaptation of the types of factors (integrated consumer experience, trust in the promoter, and product literacy) which emerge in any economics-rooted discussion of how well stakeholders are creating demand for any product, idea, or experience – which could be anything from a consumer good such as a phone, to a public utility such as transit services, to a philosophy such as environmental sustainability.¹¹

In the realm of health promotion, especially when it comes to creating demand for health services in developing markets, there is a tendency to avoid thinking in terms of tangible economic realities and to instead prefer loose, abstract discussions of 'patient activation' and 'shared decision making' in order to abstain from treating healthcare as a service subject to supply and demand. Overcoming this taboo and recognising that stakeholders in the healthcare sector are promoting a service – one which quite literally saves lives – will enable the development of a quantitative approach to understanding and improving patients' engagement with diagnostic care.

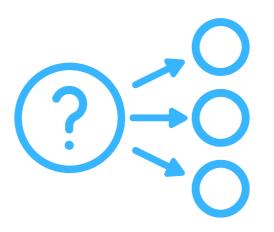
As far as measuring patient engagement goes; in addition to informing our discussion of the patient engagement deficit in Asia Pacific, this framework provides the foundation for further analysis of patient engagement in the region from a quantitative lens. Expanding upon this framework may enable the development of quantitative indices and tools which can be used to measure patient engagement, inform action by stakeholders to improve patient engagement, and assess the effectiveness of efforts to improve patient engagement with diagnostic care or any other facet of health promotion.

Causes of Patient Engagement Deficit in Asian Societies

Moving beyond identifying the measures of patient engagement in which the region is presently lacking, let us now take a look at the causes behind this lack of patient engagement. As previously identified, there are three distinct major barriers to patient engagement with diagnostic care in the Asia Pacific region: accessibility/ease of access, trust in authority, and cultural factors. Each poses barriers in distinct but comparable ways across the region.

Accessibility & Ease of Access

Accessibility and ease of access are factors of particular concern in economically polarised markets within the region. For instance, 47% of the global population has little to no access to diagnostics, only 19% of middle and low income countries have access to basic diagnostic tests in primary healthcare, and 1.1 million premature deaths in these states could be prevented annually by increasing access to diagnostics. 16 Using India – a market characterised by urban/rural divide, a growing wealth gap, and co existing public and private sector medical systems with a quality gap comparable to markets such as the Philippines, Indonesia, and Malaysia – as an example, Dr Devi highlights that a chronic lack of integration of the various diagnostics-oriented specialists with each other and with frontline primary care providers suppresses patients' ability and desire to seek out care. On a similar note, a lack of face-to-face interaction between patients and physicians in South Korea – generally representative of the region's more developed markets – is a barrier to the provision of patient-centred care and thus a limitation on the accessibility of the healthcare system. In the context of private sector providers of healthcare services, Dr Sachdeva highlights that there is a concerning lack of active engagement from private providers who tend to act as "passive providers" of healthcare rather than active facilitators & promoters of diagnostic care.7,8,9



Trust in Authority

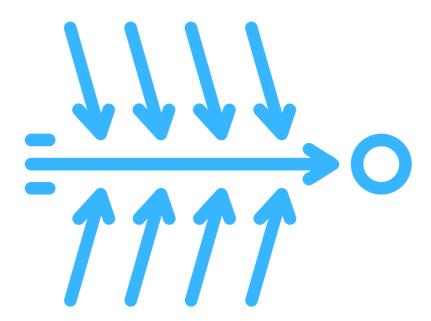
The receptiveness of community members in any geographical context to health interventions beyond the realm of immediate, tangible medical incidents and ailments is sharply influenced by trust in authority figures. As varying responses across geographies and demographic groups to public health measures during the COVID-19 pandemic – in tandem with the historic and contemporary experience of resistance to polio vaccine drives in South Asia, comparatively low uptake of annual flu shots in Asia as opposed to Europe and North America, and other comparable data points – illustrates, trust in authority is not a static or universal constant. Instead; factors such as age, sex, religion, education, rural/urban identities, and political leanings have different impacts upon trust in authority in different contexts.

Dr Sachdeva highlights two distinct and important concerns regarding trust in authority. On one hand, a lack of accountability in governments' commitment to stick to healthcare policy undermines trust in, as well as the efficacy of, healthcare policy. On the other hand, the failure of – particularly private – medical providers to take an active role in contexts such as tuberculosis in the Indian subcontinent undermines their ability to serve as authoritative actors "able to actively own" comprehensive diagnostic care. Furthermore, as illustrated by Mainland China's low uptake of COVID-19 vaccinations in age and geographical demographics with high trust in the government's pandemic lockdown measures, trust in political authorities rather than medical authorities in a position to promote diagnostic & preventive care may yield lower patient engagement with diagnostic or preventive care. ^{6,8,9,10}

Cultural Factors

As Dr Devi emphasises, patients in developed markets and higher educated stratae of the Asia Pacific population typically have a high degree of health literacy while the majority of Asia Pacific's populace does not. In developed markets, this has resulted in a cultural routinisation of diagnostic care — e.g. regular medical check-ups; mammograms, prostate exams, shingles vaccines for people reaching designated ages; mastectomies for individuals found through screening to be likely to develop breast cancer; etc. The overarching lack of health literacy in the broader population across the region and the corresponding lack of a culturally ingrained high degree of patient engagement towards diagnostics is a defining factor of the region's patient engagement deficit. In certain cases, especially low health literacy can yield a deficit in engagement among those whom it affects. It should be noted that this is a generalisation rooted in the information gleaned from our interviews and from the sources cited over the next few sentences; it can also be argued that a "fear of sickness"

prevents people from seeking screening and testing which is highly prevalent in developed markets as well. Nevertheless, examples of this disparity can be found in a variety of situations; it is particularly evident with regard to sexually transmitted infections; the most notable example of this with regard to STIs in the Asian context is with regard to HIV/AIDS. Examples include the stigmatisation of HIV/AIDS by prominent religious influencers in South Korea^{17, 18} inherently linked to homosexuality and strict surveillance of individuals who test positive has resulted in an aversion among people who suspect they have contracted HIV from getting tested; similarly stigma surrounding pre-marital sex in more religious countries in the region (e.g. Philippines, Indonesia, Pakistan) has undermined efforts to promote regular testing for STIs;²⁰ while the fear of being abandoned by one's husband has dissuaded women in rural parts of the Indian subcontinent from seeking screening or care for tuberculosis. 19 In response to the lack of health literacy in the region, Dr Sachdeva calls for the "educated" segment of the populace to "take ownership of government healthcare policies"; essentially contending that the marginalisation of the health-literate to the "fringes" of policy discourse serves to undermine the promotion of health literacy and therefore patient engagement.^{1, 2, 3, 4, 5, 8}



Patient Centricity as a Model to Bolster Patient Engagement in Asia Pacific

Engineering a shift toward greater patient engagement in the region, addressing each of the three causes of the deficit identified in the previous section and bolstering the region's performance on each of the three associated indicators of patient engagement, entails adopting a model of *patient centricity*. The general consensus among the expert stakeholders consulted is that Asian healthcare systems are presently characterised by a *paternalistic model* of care under which stakeholders, particularly healthcare providers, are not encouraged to view patients' subjective perceptions of their care as being of any relevance. 10-a Rather, the primary focus is solely on the delivery of treatments and diagnoses as a series of singular events repeated by the physician in which the patient and the broader community are seen merely as the passive recipients of care. This stands in stark contrast to the emphasis on 'shared decision making' as a paradigm in longer-established healthcare markets such as Europe and Canada. 7.9

Under the paternalistic model that predominates in Asia Pacific, the emphasis is on the efficient discharge of the physician's duties – in some cases to the degree of only providing for brief snippets of matter-of-the-fact conversations with patients, prioritising the time of the physician over the comprehension of the patient.10-c The problem with this model, rooted in the deference to authority that is common in Asian culture²³, is that it excludes the desire of the patient to receive a given treatment from consideration – essentially treating it as a given. The promotion of diagnostic care, the ability of which to achieve its intended benefits is inherently dependent on patient engagement, is especially ill served by this model of care. In contrast, a model of patient centricity entails putting the patient and their subjective needs and perceptions at the centre of the healthcare paradigm. More importantly, it can reduce health system waste. The Organisation for Economic Cooperation and Development (OECD) published a report in 2017 on wasteful spending in health care. The report said that at least one-fifth of health care spending could be channelled towards better use.²¹ The numbers show that many patients are unnecessarily harmed at the point of care, many patients receive unnecessary care that makes no difference to their health outcomes, or that the same benefits could be provided by using fewer resources.



Different patient-centricity based strategies address each of the causal factors identified; some potential examples include:

- Accessibility & Ease of Access:

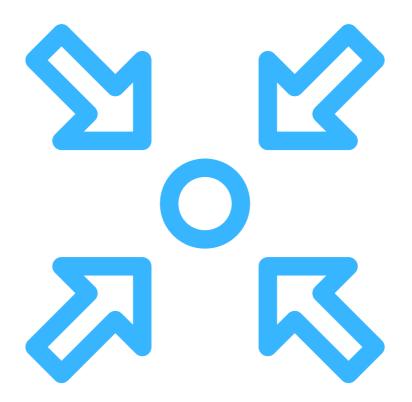
- Integrating health services from the point of view of the patient (i.e. transforming primary care providers into one-stop coordinators for all diagnostic needs of patients and community members) would increase the accessibility of diagnostics, with particular advantages for patients (e.g. rural, less affluent) who do not have the resources or time to identify the appropriate specialists and "meandre between journeys".
- Patients and patient advocates must be able to adequately participate in and exert control over the accessibility of preventive care.

- Trust in Authority:

- Increasing interactions and depth of conversations between patients and GPs/ family doctors/community clinicians/other most proximate physician so as to build a comfortable relationship and ensuring that the physician with which patients have the most comfortable relationship and closest proximity are well positioned and educated to provide guidance and direction on diagnostic care will ensure that patients associate diagnostics with the most trusted and qualified authority.

- Cultural factors:

- Emphasising the development of health literacy in local communities – developing both awareness of the benefits of diagnostics and importance attached to these benefits – as a routine aspect of health promotion at all levels (education, policy, interactions with primary care physicians) will further the cultural routinisation of diagnostics in regional countries and, correspondingly, save lives.



Conclusion & Recommendations to Stakeholders

The most important idea for all stakeholders to grasp is that patient engagement is vital to ensure that diagnostic care is able to achieve in practice what it sets out to in theory—i.e. preventing serious illness, increasing quality/length of life, and lowering long-term cost of healthcare through early diagnosis & treatment and patient compliance.

Achieving an adequate degree of patient engagement in Asia Pacific necessitates a paradigm shift toward a patient centric model of care, eschewing the paternalistic attitudes that presently hold sway across most of the region. All stakeholders have an important role to play in this process.



Conclusion & Recommendations to Stakeholders – Policymakers



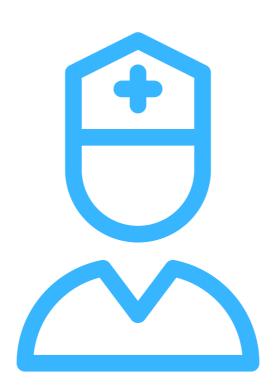
- Develop new and updated guidelines for treatment and involvement of patients in decision making
- Ensure adequate interaction time between HCPs and patients and set the tone for in-depth informative conversations
- Emphasise health literacy as an aspect of cultural education from a young age and continuing into adulthood
- Work toward integrating healthcare systems (ideally) or experience from the patients'
 POV (at least)
- Develop guidelines and conduct surveys to measure patient engagement indicators
- Create patient engagement programs to address stigma related to certain infectious diseases which can slow down / bring to halt completely the progress towards elimination programs and targets of countries.

Conclusion & Recommendations to Stakeholders – Policymakers



- Advancement of UHC ambitions in LMICS or Value Based Health Care models in countries with advanced health care systems should leverage patient engagement as the true test of resilience of these systems.
- Supranational bodies like the WHO and UN must actively seek to catalyse patient engagement programmes across regions and countries.
- Governments should use patient engagement as a strategic lever to develop direction and eventually policies for broadening patient access to breakthrough therapies or technologies.
- Patient engagement should be taken into account by policymakers as a source of realistic insight to governments to decide on healthcare is delivered and how budgets are allocated and prioritised.
- Patient engagement in value assessment of new medical technologies, expedited product approvals and, incorporation of real-world evidence about patient experience / utility of medical technology is needed.

Conclusion & Recommendations to Stakeholders – HCPs



- Work toward integrating healthcare systems (ideally) or experience from the patients' point of view (at least)
- Approach patients from a patient centric attitudinal paradigm, recognising that their subjective perspectives matter in maximising positive outcomes for the healthcare system at large
- Routinely assess patient engagement with a focus on demographic and geographical comparisons and improving patient engagement outcomes
- Outcomes should be measured by medical condition or primary care patient segment rather than by procedure or intervention - Outcomes should reflect the full cycle of care for the patient - Outcomes are multidimensional and should include the results most relevant to patients in their own points of view

Conclusion & Recommendations to Stakeholders – Others



- Patient advocates: Continue advocating for greater patient involvement in decision making, integration of healthcare systems and experiences, patient centric model of care.
- Diagnostics technology providers:
 - Work toward ensuring that the most proximate HCPs to each community is able to provide guidance, advice, and directions encouraging patients to seek diagnostic care, actively develop indices to measure regional markets' progress on indicators of patient engagement.
 - Integrate patient engagement in value assessment of new medical technologies and incorporate real-world evidence about patient experience /utility of medical technology.

References

- 1. Healthcare in Asia: a perspective from primary care at the gateway to a continent
- 2. (PDF) How does culture influence preventive service utilisation among Asian Indians living in the USA? A qualitative study
- 3. Epidemiology, impact and preventive care of chronic kidney disease in Taiwan HWANG 2010 Nephrology Wiley Online Library
- 4. A situational analysis of programmatic management of TB preventive treatment in the WHO South-East Asia Region
- 5. Health care access and preventive care among Vietnamese immigrants: Do traditional beliefs and practices pose barriers? ScienceDirect
- 6. China's Covid Exit Hinges on Seniors Who Don't Want Vaccines
- 7. Patient Engagement | Health Affairs
- 8. Poverty and Democratic Participation Reconsidered: Evidence from the Local Level in India
- 9. Spotlight on the Patient Health Engagement model (PHE model): a psycho | PPA
- 10. Interviews with:
 - a. Dr Ratna Devi, the Chief Executive Officer of Dakshama Health
 - b. Dr K.S. Sachdeva, Regional Director, The UNION South East Asia (a global organisation supported by USAID). Former Govt. Officer who has worked extensively in prestigious public health programs. Dr. Sachdeva has been Deputy Director-General, NACO and has been Deputy Director-General, Central TB Division.
 - c. Professor Byeong-soo Yoo (Wonju Severance Christian hospital) Specialty Heart Failure, High blood pressure
- 11. Utility and economics (https://link.springer.com/article/10.1007/BF01675959)
- 12. https://www.oecd-ilibrary.org/docserver/9789264278219-en.pdf?expires=1661313008&id=id&accname=guest&checksum=CEAFF8B2302A05FC792D5F86515DFB89
- 13. https://www.oecd-ilibrary.org/docserver/9789264278219-9-en.pdf?expires=1661313014&id=id&accname=guest&checksum=C623C976E6830866843EEEC1D32BD7A7
- 14. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5295692/
- 15. https://www2.deloitte.com/us/en/insights/industry/health-care/trust-in-health-care-system.html
- 16. https://rochediagram.com/strengthening-the-value-of-diagnostics/
- 17. https://thediplomat.com/2016/09/aids-in-south-korea-out-of-sight-out-of-mind/
- 18. http://www.koreaherald.com/view.php?ud=20160411001013
- 19. https://rochediagram.com/strengthening-the-value-of-diagnostics/
- 20. HIV crisis in the Philippines: urgent actions needed The Lancet Public Health
- 21. https://www.oecd.org/els/health-systems/Tackling-Wasteful-Spending-on-Health-Highlights-revised.pdf
- 22. https://pubmed.ncbi.nlm.nih.gov/30544041/
- 23. https://archive.unu.edu/unupress/asian-values.html
- 24. https://cioms.ch/publications/product/patient-involvement/
- 25. https://link.springer.com/article/10.1007/s12325-020-01519-3

About Roche



Founded in 1896 in Basel, Switzerland, as one of the first industrial manufacturers of branded medicines, Roche has grown into the world's largest biotechnology company and the global leader in in-vitro diagnostics. The company pursues scientific excellence to discover and develop medicines and diagnostics for improving and saving the lives of people around the world. We are a pioneer in personalised healthcare and want to further transform how healthcare is delivered to have an even greater impact. To provide the best care for each person we partner with many stakeholders and combine our strengths in Diagnostics and Pharma with data insights from the clinical practice.

In recognising our endeavor to pursue a long-term perspective in all we do, Roche has been named one of the most sustainable companies in the pharmaceuticals industry by the Dow Jones Sustainability Indices for the thirteenth consecutive year. This distinction also reflects our efforts to improve access to healthcare together with local partners in every country we work.

Genentech, in the United States, is a wholly owned member of the Roche Group. Roche is the majority shareholder in Chugai Pharmaceutical, Japan.

For more information, please visit www.roche.com.

