IKIGAI LAW

THE UNIVERSITY OF MELBOURNE

NALSAR HYDERABAD

Co-Designing Inclusive AI in Healthcare

TOOLKIT FOR DEVELOPERS AND DEPLOYERS

Grant deliverable for Project BUILD: Building Inclusivity by Design in AI/ML Powered Healthtech (Programme Evaluation Report - Milestone 5) under the Australia India Cyber and Critical Technology Partnership

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ABOUT PROJECT BUILD

ABOUT THE GRANT AND THE PROJECT

Project BUILD is a project funded under the Australia-India Cyber and Critical Technology Partnership (**AICCTP**), by the Australian Foreign Ministry. The AICCTP focuses on Australia-India collaborations on cyber and critical technology issues, and aims to deepens institutional, research, business, and government linkages between the two countries.

Project BUILD is a one-of-a-kind bilateral exploratory study to provide policy and partnership recommendations to the Indian and Australian governments on enabling inclusive artificial intelligence (AI) in healthcare. At the time of applying for the grant (2023), our preliminary research revealed that global policy documents largely set out principles for ensuring responsible AI (e.g., transparency, human-in-the-loop, safety, trustworthy). There is a lack of policy playbook to guide implementation of these principles, or indeed, on enabling inclusive AI in healthcare. The conversations and research around inclusive AI in healthcare were nascent and merited greater exploration, especially from an Australian and Indian perspective, given our diverse populations. Through the project activities, we looked to understand how individuals from academia, civil society, government, industry, and healthcare, are thinking about this policy gap, and whether they are actively using or creating ways to build inclusive approaches to AI in healthcare.

In this project, we set out to examine what inclusive AI in healthcare means by proposing a practical definition and offering practical steps for incorporating inclusivity into healthcare AI systems. We sought to understand the layers of actors involved in providing healthcare and AI technologies, and to examine this universe of actors against the global policy conversation around regulating AI in sensitive sectors like healthcare. We also sought to understand the barriers to healthcare access faced by marginalised and vulnerable communities. And the role AI has played so far in mitigating or exacerbating these barriers, including for R&D. This project had 5 milestones:

MILESTONE 1	**Initial research and gathering of data points**
MILESTONE 2	**Constitution of an expert cohort:** We identified healthcare, technology, and inclusion experts in Australia (**Australian Experts**) and India (**Indian Experts**) for the Cohorts to travel and meet with. The Australian and Indian Experts comprised individuals from academia, industry, and government, to enable intra-sectoral and multi-disciplinary discussions.
MILESTONE 3	**Exchange Tours to Australia and India:** We conducted two five-day Exchange Tours to Australia and India (**Exchange Tours**). The Indian Cohort travelled to Australia in October 2024, and the Australian Cohort travelled to India in February 2025. (b) We identified healthcare, technology, and inclusion experts in Australia (**Australian Experts**) and India (**Indian Experts**) for the Cohorts to travel and meet with.
MILESTONE 4	**Building Inclusivity by Design - Governance, Processes and Partnerships:** A memorandum for national, regional and inter-governmental officials.
MILESTONE 5	**Co-Designing AI for Healthcare:** Toolkit for developers and deployers (Report)

ABOUT THE PROJECT PARTNERS

1. Ikigai Law is an Indian, award-winning public policy and law firm with a sharp focus on technology and innovation. The firm advises a wide range of stakeholders including the government, start-ups, industry associations, think tanks and multi-national companies. AI, data, cyber security, healthtech are some of its core areas of work.[1] This project was executed by Ikigai Law.

2. NALSAR University of Law (**NALSAR**) is one of India's premier universities of law. It provides comprehensive legal education, promote research, advance legal awareness in the community and assists in the rigorous analysis of contemporary issues. [2]

3. University of Melbourne, Centre for AI and Digital Ethics (**CAIDE**) brings a cross-disciplinary perspective to the ethical, regulatory and legal issues relating to Artificial Intelligence (AI) and digital technologies. CAIDE's research seeks to explore the impact, deployment and governance of AI. [3]

[1] We were the Ministry of Electronics and Information Technology's knowledge partner for India's G20 Presidency and supported the design and development of two deliverables for the Digital Economy Working Group. Our work included designing High Level Principles for a safe, secure, trusted and resilient digital economy and the Toolkit for Cyber Awareness and Cyber Education for Children and Youth ('G20 Toolkit'). We prepared these high-level principles by combining qualitative responses to a survey and desk research. | We also worked with NASSCOM and contributed to the Guidelines on GenAI. The first of its kind in India, these guidelines articulate principles for responsible development and deployment of AI, for researchers, developers and users. We researched the legal and ethical impact of AI and proposed socio-technical recommendations for different actors within the ecosystem. | We are partnering with the German development agency GIZ, Data Security Council of India (DSCI) and NASSCOM, to update a Handbook on Data Protection and Privacy for Developers of Artificial Intelligence in India. | We partnered with the British High Commission for a UK-India policy exchange on regulatory approaches to AI/ML enabled health-tech. We sought to find lessons for India from the UK's experiences in governing AI based healthcare products. Based on focused multistakeholder engagements, we prepared a report identifying partnership and advocacy initiatives for strengthening AI/ML related research, regulation, and adoption in India's healthcare ecosystem. We prepared two documents containing: (a) key learning for the Indian cohort based on the 5-day learning tour which included learnings from the UK ecosystem, Indian cohort's observations and key takeaways and; (b) Short Programme Evaluation Report that proposes policy recommendations based on our engagements with Indian and UK health tech experts on AI/ML enabled health tech. We are currently the implementing partners, working with the Ministry of Electronics and Information Technology (MeitY) and UNESCO to assess India's readiness for ethical and responsible AI adoption. Our team has been on the ground conducting stakeholder consultations nationwide, creating forums where government officials, academics, industry leaders, and civil society representatives can share their insights on strengthening India's AI ecosystem.

[2] NALSAR has worked on "Access to Justice for Marginalised Communities", with the United Nations Development Program and the Government of India. NALSAR has the Centre for Disability Studies examining the rights of persons with disabilities.

[3] CAIDE focuses on issues of fairness, accountability and transparency in AI and to guide the development and appropriate policy settings for effective use across society.

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We acknowledge the First Nation peoples of Australia and acknowledge their continuing connection to land, waters and community. We pay our respects to the people, the cultures and the Elders past and present. We honour their enduring connection to land, waters, and culture, and express our gratitude for their custodianship, wisdom, and continuing role in guiding us toward a more inclusive and respectful future.

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1. AUSTRALIAN COHORT MEMBERS:

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- Dr. Tavpritesh Sethi, Associate Professor of Computational Biology and Founding Head at Center of Excellence in Healthcare at IIIT-Delhi

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- Dr. Simon Coghlan, Senior Lecturer in Digital Ethics Computing and Information Systems, University of Melbourne
- Prof. Piers Gooding, Associate Professor, La Trobe Law School
- Prof. Jeannie Paterson, Professor of Consumer Protection and Technology Law, Director of the Centre for AI and Digital Ethics
- Anja Nikolic, CEO, Australasia Institute of Digital Health
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EXECUTIVE SUMMARY

ABOUT PROJECT BUILD

The report, Co-Designing Inclusive AI in Healthcare: Toolkit for Developers and Deployers, is a grant deliverable for Project BUILD, a bilateral exploratory study funded under the Australia-India Cyber and Critical Technology Partnership. This toolkit aims to provide clarity to both, developers and deployers on how to integrate inclusivity considerations into Artificial Intelligence (AI) systems — such as accessibility challenges or health inequities faced by specific/under privileged communities.

Co-designing is presented as a collaborative process to plug this gap. It requires active involvement of end users in designing, deploying, and overseeing AI models. The toolkit presents a practical guide, which includes five core legal and policy enablers and eight tenets for developers and deployers. For hands on guidance, and based on a common understanding and definition of inclusive AI, the toolkit also includes examples of practical application of the tenets to a few use cases.[4] While the toolkit was made based our findings and engagements with experts in the healthcare sector, our endeavour has been to ensure the toolkit doubles up as a sector agnostic approach framework.

The tenets are illustrated through application to four specific case studies (a) AI medical scribe for clinicians; (b) AI clinical decision support system and symptom checker for nurses and patients; (c) AI retinal scanning solution; and (d) AI mental health chatbot

Defining Inclusive AI in Healthcare:

From our research and findings, the proposed definition is: "Diversity and Inclusion in Artificial Intelligence (AI) in healthcare refers to the 'inclusion' of humans with 'diverse' attributes and perspectives in the data, process, system, and governance of the AI ecosystem, to ensure health equity."

Legal and Policy Enablers

Five foundational policy requirements are outlined for developers and deployers to successfully co-design AI:

1. Policy should support and incentivise the sharing of datasets and break data silos.
2. Regulation must balance privacy with data sharing.
3. Regulation and transparency requirements should be based both on sector and model-specific risk.
4. Policymakers should institute meaningful avenues for the incorporation of feedback throughout the AI life cycle.
5. The government should invest and implement skills training for technicians and personnel.

Tenets for Inclusive AI

The report articulates eight tenets that should guide the development and deployment of inclusive AI:

1. Adopt a proactive approach: Embed inclusive AI principles into organizational decisions—such as team qualifications, research activities, governance, and partnerships—and into all product design choices, including data sourcing and training protocols. This is a cross-cutting tenet that should apply uniformly to all use cases throughout the lifecycle.
2. Craft context-driven problem statements: Define problem statements to ensure AI solutions are inclusive and relevant, considering user challenges, targeted benefits, and clinical or operational settings.
3. Acquire representative data: Source diverse and representative data reflecting variations in abilities, age, gender, ethnicity, sexual orientation, socioeconomic status, geography.
4. Ensure meaningful stakeholder participation: Engage intended users and relevant stakeholders in co-design to address considerations for inclusive AI in healthcare, through the lifecycle of AI.
5. Address barriers to access and workflow realities: Collaborate with stakeholders to identify and proactively mitigate barriers—such as demographics, costs, location, infrastructure, literacy, and social hierarchies.

[4]The tenets are illustrated through application to four specific case studies (a) AI medical scribe for clinicians; (b) AI clinical decision support system and symptom checker for nurses and patients; (c) AI retinal scanning solution; and (d) AI mental health chatbot

6. Align inclusivity with use case: Assess inclusivity by the product's context and application, prioritizing relevant dimensions such as genomic diversity for rare disease AI, or geographical reach for telemedicine tools. Specifically, considerations should include the lived experiences of LGBTQIA+ members, age (such as elderly people or children), indigenous lineage, local or vernacular language and usage of slang terms (e.g., to describe parts of the anatomy or symptoms experienced)[5], cultural factors such as those impacting help-seeking behaviours,[6] disease burden and healthcare priorities of Australia or India, and clinicians as intended users.

7. Tailor risk and impact assessments: Conduct context-specific algorithmic impact assessments and validation studies to evaluate relevant risks.

8. Commit to continuous improvement: Regularly evaluate, validate, and refine AI products to identify and address emerging inequities or exclusions.

[5]See Annexure I: Summary of Discussions from Australia Exchange Tour, Supplementary Materials, Day 3 Session 1 and Day 5 Session 1. See also Annexure II: Summary of Discussions from India Exchange Tour, Supplementary Materials, Day 4 Session 1

[6]"Health or care seeking behaviour has been defined as any action undertaken by individuals who perceive themselves to have a health problem or to be ill for the purpose of finding an appropriate remedy." - Editorial Health Seeking Behaviour in Context. 2003. See this article for more.

INTRODUCTION

Inclusive AI in healthcare is critical and should be approached systematically through iterative and collaborative processes. This approach, known as "co-designing," was stressed by several stakeholders and experts from this project. Under this approach, developers and deployers are recommended to actively engage with the perspectives of intended users—such as patients, clinicians, and other stakeholders—and consider the specific contexts in which AI interventions will be deployed across all stages of the AI lifecycle.

This report sets out the tenets of a co-design approach and applies it to four case studies. Objective of this report is to provide hands-on guidance to developers or deployers of AI on inclusive co-design practices across the life cycle of an AI tool. This approach not only helps mobilise AI for social good but also makes business sense for companies.

This Report proposes a working definition of "inclusive AI in healthcare," encapsulating the critical considerations necessary to ensure inclusivity in AI-enabled healthcare solutions to support developers in their design strategies and deployers in their deployment strategies.

The second chapter explains the co-design approach for inclusive AI, while highlighting existing approaches that have been applied in other sectors.

The third chapter outlines five critical law and policy enablers to for deeper adoption of co-design practices across any jurisdiction.

Finally, based on the discussions during the Exchange Tours the fourth chapter articulates eight tenets for inclusive AI in healthcare. The tenets are also informed by the existing approaches to co-design AI in healthcare.

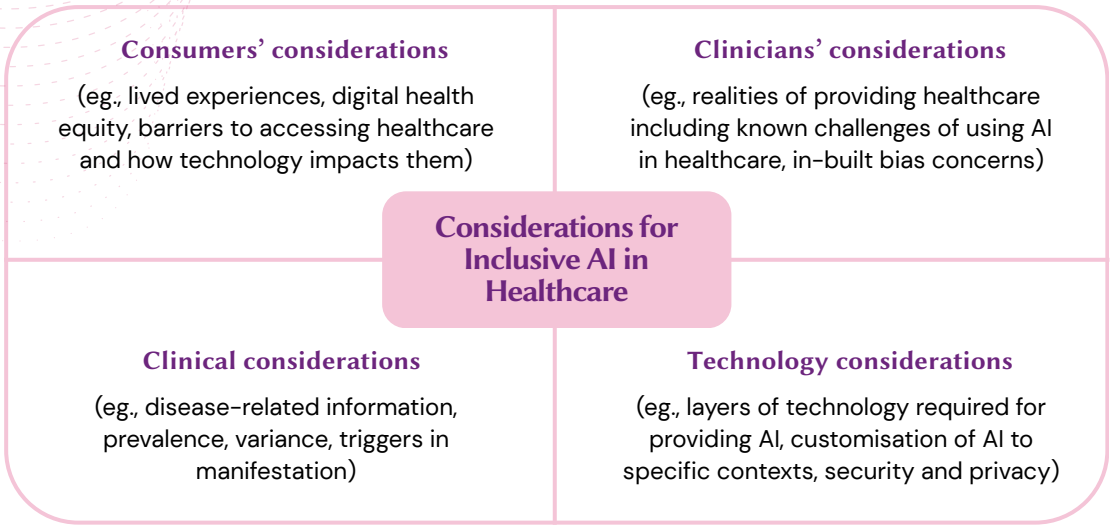
The final chapter then applies these eight tenets to four practical case studies. These case studies were workshopped during both the Exchange Tours and by members of the Cohorts.

PROPOSING A WORKING DEFINITION OF "INCLUSIVE AI IN HEALTHCARE"

Background:

Greater inclusion and diversity among end-users and other stakeholders augment the quality of any technology and mitigates against possible harms.[7] AI is no exception. The absence of a workable definition hinders inclusive practices due to a misunderstanding of thresholds, outcomes and processes.

Throughout our Exchange Tours, experts acknowledged that inclusive AI in healthcare was hindered by absent or amorphous definitions.[8] For instance, how much inclusion is enough? Is inclusive AI in healthcare intended to mean including the entire population? Can AI tools be evaluated for inclusivity and if so, how? How do we ensure the AI is "fit-for-purpose"? Cohort Members arrived at the following key considerations for AI in healthcare to be developed and deployed inclusively:



To plug these gaps, policymakers should integrate inclusive AI requirements into existing legal and regulatory frameworks.

Defining inclusive AI in healthcare:

To design inclusive AI, developers and deployers must agree on some foundational premises and construct a working definition. We came up[9] with three foundational principles after extensively reviewing literature related to "inclusive design", and "inclusion in AI" from leading academic and industry bodies.[10]

[7]Partnership on AI, Dr. Tina M. Park., Making AI Inclusive: Four Guiding Principles for Ethical Engagement, (August 2022)

[8]See Annexure I: Summary of Discussions from Australia Exchange Tour; and Annexure II: Summary of Discussions from India Exchange Tour, Supplementary Materials.

[9]In our report "Building Inclusivity by Design: Governance, processes and partnerships - A memorandum for national, regional and inter-governmental officials" (Milestone 4 of Project BUILD) we listed key learnings from the Exchange Tours to Australia and India. One of these learnings included the need to define inclusive AI in healthcare to give developers and deployers a better understanding of what "inclusive AI in healthcare" entails. Through the discussions, referring to international human rights instruments while defining inclusive AI in healthcare emerged as a suggestion. For more, ee Annexure I: Summary of Discussions from Australia Exchange Tour; and Annexure II: Summary of Discussions from India Exchange Tour, Supplementary Materials.

[10]This includes definitions articulated by including the British Standards Institute (BSI) - a standards setting and accreditation body; AccessiBe - an accessibility consulting organisation; Interactive Design Foundation - a global virtual design skilling platform; Infosys Knowledge Institute (Infosys) and Microsoft - information technology (IT) companies, and Inclusive Design Research Centre (IDRC) - a centre in the Ontario College of Art & Design University, comprised of open-source developers, designers,

The three foundational premises that should be at the core of defining inclusive AI are:

1. Incorporating diverse perspectives and putting people at the centre of the design processes,
2. Developing products with a reasonably broad user base, and
3. Ensuring that people regardless of their circumstances can derive benefits from the product.

We believe that the definition[11] put forward by the Commonwealth Scientific Research and Industrial Research Organization **(CSIRO)** effectively accounts for these themes and contextualizes it to AI's human rights implications. When understanding AI in the healthcare context we should additionally leverage the World Health Organization's articulation of 'health equity.'[12] This provides further precision for developers and deployers of AI.

The definition of inclusive AI we propose therefore is:

Diversity and Inclusion in Artificial Intelligence (AI) in healthcare refers to the 'inclusion' of humans with 'diverse' attributes and perspectives in the data, process, system, and governance of the AI ecosystem, to ensure health equity.

- Diversity refers to the representation of the differences in attributes of humans in a group or society.
- Attributes are known facets of diversity including the protected attributes in Article 26 of the International Covenant on Civil and Political Rights **(ICCPR)**: race, colour, sex, language, religion, political or other opinions, national or social origin, property, birth or other status; and (given the non-exhaustive nature of Article 26, attributes explicitly protected under Australian discrimination federal law, including but not limited to: age, disability, criminal record, ethnic origin, gender identity, immigrant status, intersex status, neurodiversity, sexual orientation); and intersections of these attributes.
- Inclusion is the process of proactively involving and representing the most relevant humans with diverse attributes who are impacted by, and have an impact on, the AI ecosystem context.
- AI ecosystem refers to the collection of 5 pillars (humans, data, process, system, and governance), plus the environment (application or business domain) within which the AI system will be deployed and used.[13]
- Equity is the absence of unfair, avoidable or remediable differences among groups of people, whether those groups are defined socially, economically, demographically, or geographically or by other dimensions of inequality (e.g. sex, gender, ethnicity, disability, or sexual orientation). Health equity is achieved when everyone can attain their full potential for health and well-being.

researchers, educators and co-designers proactively working to make emerging technologies and processes inclusive,[10] And Data61 team of the Commonwealth Scientific and Industrial Research Organisation (CSIRO)[10] - the Australian government's National Science Agency which focuses on scientific and industrial research.[10]

[[11]Didar Zowghi and Francesca da Rimini, "Guidelines for Diversity and Inclusion in Artificial Intelligence" published in "Responsible AI: Best Practices for Creating Trustworthy AI Systems"; and CSIRO's Diversity and Inclusion in AI Guidelines.

[12]The World Health Organisation's articulation of the concepts of equity and health equity.

[13]Didar Zowghi and Francesca da Rimini, "Guidelines for Diversity and Inclusion in Artificial Intelligence" published in "Responsible AI: Best Practices for Creating Trustworthy AI Systems"; and CSIRO's Diversity and Inclusion in AI Guidelines.

WHAT DOES "CO-DESIGNING" AI IN HEALTHCARE MEAN?

Individuals and communities impacted by or using technology solutions must be involved in the creation of these solutions. As discussed in the previous sections, attaining this inclusivity is no easy task for developers and deployers of AI, especially in the absence of structured, systematized and cohesive thinking. Co-designing is a collaborative process that can plug this gap.

The process requires actively including end users in designing, deploying, and overseeing AI models.[14] To facilitate this, policymakers can incentivize partnerships between AI developers and organizations representing marginalized, underrepresented, or vulnerable groups, including people with disabilities and indigenous communities. Developers may also appoint a community engagement manager to build ethical, rights-based relationships with such organizations. These collaborations should capture real-world insights to inform the identification of the problem, designing of the solution and development of the model in order to ensure that that AI systems reflect diverse lived experiences. Relevant partners might include non-profit disease-specific groups, advocacy organizations, or clinician associations among others.

Organisations such as Healthdirect and Wysa have adopted co-design approaches with some success. You can read more about them in the Supplementary Materials document.[15]

We identified three approaches that are particularly aligned with the implementation of the tenets for co-designing inclusive AI in healthcare, that are described later in the toolkit.

DOUBLE DIAMOND APPROACH:	This is a design thinking approach that enables human centred design based on four principles: (i) Discover rather than assume the problems by directly learning from the affected people; (ii) Define the challenge based on affected people's insights; (iii) Develop solutions by co-designing them with a range of different people; and (iv) Deliver by small scale testing and improving what works, while rejecting what does not work.[16]
NARRATIVE PROTOTYPING:	Narrative prototyping in healthcare uses stories and role-playing to test new tools. Patients, doctors, and caregivers simulate real-life scenarios, helping designers identify issues and refine solutions early. This ensures healthcare innovations are practical, user-friendly, and effective.[17]

[14] Scanzera AC, Beversluis C, Potharazu AV, Bai P, Leifer A, Cole E, Du DY, Musick H and Chan RVP (2023) Planning an artificial intelligence diabetic retinopathy screening program: a human-centered design approach. Front. Med. 10:1198228. doi: 10.3389/fmed.2023.1198228. J. F., Verdezoto, N., Stawarz, K., Ortega, D., Chung, C., Shin, J. Y., ... & Andersen, T. O. (2025). Co-designing human-centred AI technologies for health and wellbeing: approaches, challenges, and opportunities. Proceedings of BCS HCI 2025, 13-18. Chamorro-Koc, M. (2024). Prototyping for Healthcare Innovation. In: Miller, E., Winter, A., Chari, S. (eds) How Designers Are Transforming Healthcare. Springer, Singapore. Luckraj N, Strazzari R, Coiera E, Magrabi F. Assessing the Safety of a New Clinical Decision Support System for a National Helpline. Stud Health Technol Inform. 2024 Jan 25;310:514-518. doi: 10.3233/SHTI231018. PMID: 38269862. To framework, or not to framework? Reflections from co-design of a digital supportive care platform for patients with brain tumours and their carers, Mahima Kalla, Kit Huckvale, Ashleigh Bradford, Verena Schadewaldt, Sarah C. E. Bray, Ann Borda, Kara Burns, Heidi McAlpine, Joseph Thomas, Daniel Capurro, Richard De Abreu Lourenco, Sarah Cain, Wendy Chapman, James R. Whittle, Katharine J. Drummond, Meinir Krishnasamy

[15] See Annexure I: Summary of Discussions from Australia Exchange Tour; and Annexure II: Summary of Discussions from India Exchange Tour, Supplementary Materials.

[16] Design Council UK, Double Diamond

[17] UX Collective, Narrative Prototyping

THE PROGRESS PLUS FRAMEWORK:

This comprehensive framework is used to analyse health equity by identifying social factors that influence healthcare access and outcomes. It stands for Place of residence, Race/ethnicity, Occupation, Gender, Religion, Education, Socioeconomic status, and Social capital, with "Plus" covering additional factors like disability or age. Applying this method to AI in healthcare ensures that AI-driven tools and policies are designed to be inclusive and address health disparities.[18]

[18] Cochrane Methods Equity, Progress-Plus

ENABLERS FOR CO-DESIGNING AI IN HEALTHCARE

Background

A framework for co-designing AI in healthcare must be based on some core enablers, i.e. foundational elements needed for any framework to be effective. Law and policy ecosystems are critical to enabling any multi-stakeholder policy process. Co-designing AI for healthcare is no exception.

This section presents policy enablers for Australia and India to advance inclusive AI in healthcare. They are informed by deliberations with our cohorts and experts engaged during Project BUILD, along with insights from international AI policy frameworks.

Legal and Policy Enablers

Five foundational policy requirements are outlined for developers and deployers to successfully co-design AI:

1. Policy should support and incentivise the sharing of datasets and break data silos.
2. Regulation must balance privacy with data sharing.
3. Regulation and transparency requirements should be based both on sector and model-specific risk.
4. Policy-makers should institute meaningful avenues for the incorporation of feedback throughout the AI life-cycle.
5. The government should invest and implement skills training for technicians and personnel.

Enablers

The following components of any policy process would need to be set in stone for co-designing to be effectively implemented by developers and deployers.

Enabler 1

Policy should support and incentivise the sharing of datasets and break data silos.

Data relevant for healthcare is often housed in various silos. For instance, in India the census data is housed with the Union Ministry of Home Affairs,[19] while the National Family Health Survey data is with the Union Ministry of Health and Family Welfare.[20] Registries and public datasets that are interoperable can harness data for training AI better. Linking data from various sources can help create quality data sets for training AI in healthcare as this could help account for intended users (e.g., with long-term illnesses or specific health requirements). Policymakers should encourage the creation of public data sets (such as disease specific registries) that can be accessed with login credentials to track access and use of the datasets.

To govern ethical data collection, retention, sharing, and use, policymakers should require and incentivise data stewardship practices to ensure that the population whose data is being used is appropriately informed Data stewardship is underpinned by the concept of accountability and aims to ensure that data is collected and used responsibly.[21]

[19] Ministry of Home Affairs, Census Organisation

[20] Ministry of Health and Family Welfare, National Family Health Survey

[21] National Institute of Health, The National Committee on Vital and Health Statistics, Health Data Stewardship: What, Why, Who, How?: a NCVHS primer (2009).

The concept of reciprocity also aids in ethical data collection and use with respect to marginalised populations such as indigenous groups.[22] Reciprocity refers to ensuring that the indigenous community benefits from sharing their data and can include involving community members in the research design, providing health education, and compensation for participation in research.[23]

Enabler 2

Regulation must balance privacy with data sharing

Currently, the lack of quality granular datasets is a stumbling block for researchers and organisations building or evaluating AI models.[24] Data points such as gender, age, or genomic information - which are typically considered sensitive personal data - could help train algorithms to account for the social and cultural determinants of healthcare access, or specific disease manifestations, mitigating the risk of bias.[25] However, such sensitive information can also be misused in the wrong hands, or be collected from end consumers improperly (such as without informed consent and mechanisms that balance power asymmetries and ethical concerns of eliciting informed consent[26]). Regulators such as the data protection authority and the government regulator overseeing biomedical and health research should work together to create an appropriate balance between data privacy compliance and data sharing and use.[27]

[22] Skye Trudgett, Kalinda Griffiths, Sara Farnbach, Anthony Shakeshaft, A framework for operationalising Aboriginal and Torres Strait Islander data sovereignty in Australia: Results of a systematic literature review of published studies, eClinicalMedicine, Volume 45, 2022, 101302, ISSN 2589-5370

[23] Griffiths KE, Blain J, Vajdic CM, Jorm L. Indigenous and Tribal Peoples Data Governance in Health Research: A Systematic Review. Int J Environ Res Public Health. 2021 Sep 30;18(19):10318. doi: 10.3390/ijerph181910318. PMID: 34639617; PMCID: PMC8508308.

[24] Anecdotally, the invited speakers reflected on the time-spent with lawyers to understand data compliance responsibilities (e.g., what the law clearly allows or disallows. For instance, the specific elements of the consent form and consent taking process, or the nature of consent for reusing data) and their liabilities. Some speakers alluded to rejecting research proposals because of the high sensitivity of data needed as it would add to their compliance, especially in cases where the law is not clear. See Annexure II: Summary of Discussions from India Exchange Tour, Supplementary Materials, Day 1 Session 1.

[25] See Annexure II: Summary of Discussions from India Exchange Tour, Supplementary Materials, Day 1 Session 1. See also: Arora A, Alderman JE, Palmer J, Ganapathi S, Laws E, McCradden MD, Oakden-Rayner L, Pfohl SR, Ghassemi M, McKay F, Treanor D, Rostamzadeh N, Mateen B, Gath J, Adebajo AO, Kuku S, Matin R, Heller K, Sapey E, Sebire NJ, Cole-Lewis H, Calvert M, Denniston A, Liu X. The value of standards for health datasets in artificial intelligence-based applications. Nat Med. 2023 Nov;29(11):2929-2938. doi: 10.1038/s41591-023-02608-w. Epub 2023 Oct 26. PMID: 37884627; PMCID: PMC10667100.

[26] Andreotta AJ, Kirkham N, Rizzi M. AI, big data, and the future of consent. AI Soc. 2022;37(4):1715-1728. doi: 10.1007/s00146-021-01262-5. Epub 2021 Aug 30. PMID: 34483498; PMCID: PMC8404542.

[27] The model of harmonising the EU AI Act with the EU General Data Protection Regulation (GDPR) to prevent AI from being discriminatory, can be considered. The European Parliament Research Service (EPRS) examined the interplay between provisions of the EU AI Act and the GDPR, to clarify the GDPR's data compliance requirements in the context of the EU AI Act allowing processing of "special categories of personal data" for prevention of discrimination by "high-risk" AI systems/ The EPRS report states that collection of sensitive data may be needed to evaluate whether an AI algorithm is being discriminatory which the EU Act permits. The EPRS argues that such data collection could be permitted under the "substantial public interest" ground provided in the EU GDPR, where non-discrimination is considered as a matter of "substantial public interest". The EPRS report also suggests that the "legitimate use" ground[27] can also be leveraged for collecting data to ensure AI algorithms are non-discriminatory.See European Parliament Research Services, Algorithmic discrimination under the AI Act and the GDPR, 26 February 2025.

Enabler 3

Regulation and transparency requirements should be based on sector and model-specific risk

Policymakers should set minimum standards for enabling inclusive AI that are applicable across sectors and allow for sector-specific modifications when it comes to AI in healthcare. For instance, researchers have flagged how the sector-agnostic EU AI Act, does not place obligations on low-risk AI used in healthcare (such as mobile applications offering diet advice or mood monitoring) thereby opening the door to unproven and potential harmful AI systems.[28] The researchers also flagged a lack of clarity when it comes to impact assessments in the context of patient rights.[29] Finally, researchers found that the AI scientific research exemption in the EU AI Act could dilute the governance framework for the use of AI in clinical trials and medical research.[30] Therefore, policymakers should examine sector-specific realities when designing policy prescriptions, while baking in universal prescriptions throughout.

Government departments should work together (such as the departments overseeing policymaking for healthcare and information technologies) to set out reporting mechanisms for organisations to explain the working of their AI models, including how the models are validated for safe use and periodically reassessed and calibrated where necessary. The reporting mechanisms should also capture both the user feedback received and how that feedback has been treated.

Additionally, the regulators should require the conduct of algorithmic impact assessments **(AIAs)** and incident reporting based on the risks posed by the AI model. The risk may differ based on the use case.[31] For instance, an AI model used primarily to listen and transcribe clinical consultation may pose less risk than the same model supporting clinical decision making or decisions regarding medication further down the line.

Government regulators should also require publication of the AIAs and incident reports, to facilitate improvements and learnings for other products in the market and issuing of safety warnings to clinicians and consumers alike.[32]

[28] Hannah van Kolfschooten, Janneke van Oirschot, The EU Artificial Intelligence Act (2024): Implications for healthcare, Health Policy, Volume 149, 2024, 105152, ISSN 0168-8510,

[29] Hannah van Kolfschooten, Janneke van Oirschot, The EU Artificial Intelligence Act (2024): Implications for healthcare, Health Policy, Volume 149, 2024, 105152, ISSN 0168-8510,

[30] Hannah van Kolfschooten, Janneke van Oirschot, The EU Artificial Intelligence Act (2024): Implications for healthcare, Health Policy, Volume 149, 2024, 105152, ISSN 0168-8510,

[31] See Annexure I: Summary of Discussions from Australia Exchange Tour, Supplementary Materials, Day 3 Session 1.

[32] Note how these papers extract insights from medical device databases and AI databases - Magrabi F, Ong MS, Runciman W, Coiera E. An analysis of computer-related patient safety incidents to inform the development of a classification. J Am Med Inform Assoc. 2010 Nov-Dec;17(6):663-70. doi: 10.1136/jamia.2009.002444. PMID: 20962128; PMCID: PMC3000751 and Rifat Ara Shams, Didar Zowghi, Muneera Bano, AI for All: Identifying AI incidents Related to Diversity and Inclusion, Journal of AI Research, Journal for Artificial Intelligence Research, Volume 83, (27 June 2025)

Enabler 4

Policymakers should institute meaningful avenues for incorporation of feedback

Government regulators such as consumer protection authorities should require AI developers to provide users and deployers of AI mechanisms to flag issues related to the inclusion considerations discussed in this report thus far. For instance, if an AI model is consistently flagging people from a population known to face barriers to healthcare access (such as indigenous people) as low risk of needing care, clinicians should be able to provide feedback within the product interface itself. This can subsequently be used by the developer to action changes.[33]

Enabler 5

The government should invest and implement skills training for technicians and personnel

Government and autonomous bodies that are set up to oversee medical education and training and quality standards for clinical establishments should consider providing specialised courses in partnership with AI experts to train clinicians on using AI tools in their clinical domains. This helps ensure that clinicians serve as effective "humans-in-the-loop" and use AI safely.[34] This training and upskilling can also help improve clinicians' trust in AI products, and enable them to explain, where necessary, how they intend to use AI while caring for their patients during consultations.

[33] See Healthdirect's process for their clinical decision support system and symptom checked, Luckraj N, Strazzari R, Coiera E, Magrabi F. Assessing the Safety of a New Clinical Decision Support System for a National Helpline. Stud Health Technol Inform. 2024 Jan 25;310:514-518. doi: 10.3233/SHTI231018. PMID: 38269862.

[34] Tim Schubert, Tim Oosterlinck, Robert D. Stevens, Patrick H. Maxwell, Mihaela van der Schaar, AI education for clinicians, eClinicalMedicine, Volume 79, 2025, 102968, ISSN 2589-5370, https://doi.org/10.1016/j.eclinm.2024.102968.

TENETS OF INCLUSIVE AI IN HEALTHCARE

Co-designing AI in healthcare entails intentionally roping in multiple stakeholders into the development and design of AI, including clinicians, patients, healthcare institutions, insurers, public health agencies, and technology providers. Ensuring that each layer assumes responsibility for inclusive AI compliance helps enable effective coordination and accountability across the AI lifecycle. AI developers and deployers must establish mechanisms that require all relevant actors—developers, deployers, and intermediaries—to uphold inclusive AI principles throughout the AI lifecycle.

Based on existing co-design practices, we arrived at eight tenets for co-designing inclusive AI in healthcare. These tenets were then stress-tested during the study tours. Four use cases that were workshopped among the cohort participants describe how the tenets can be implemented through the lifecycle of the AI.

Tenets

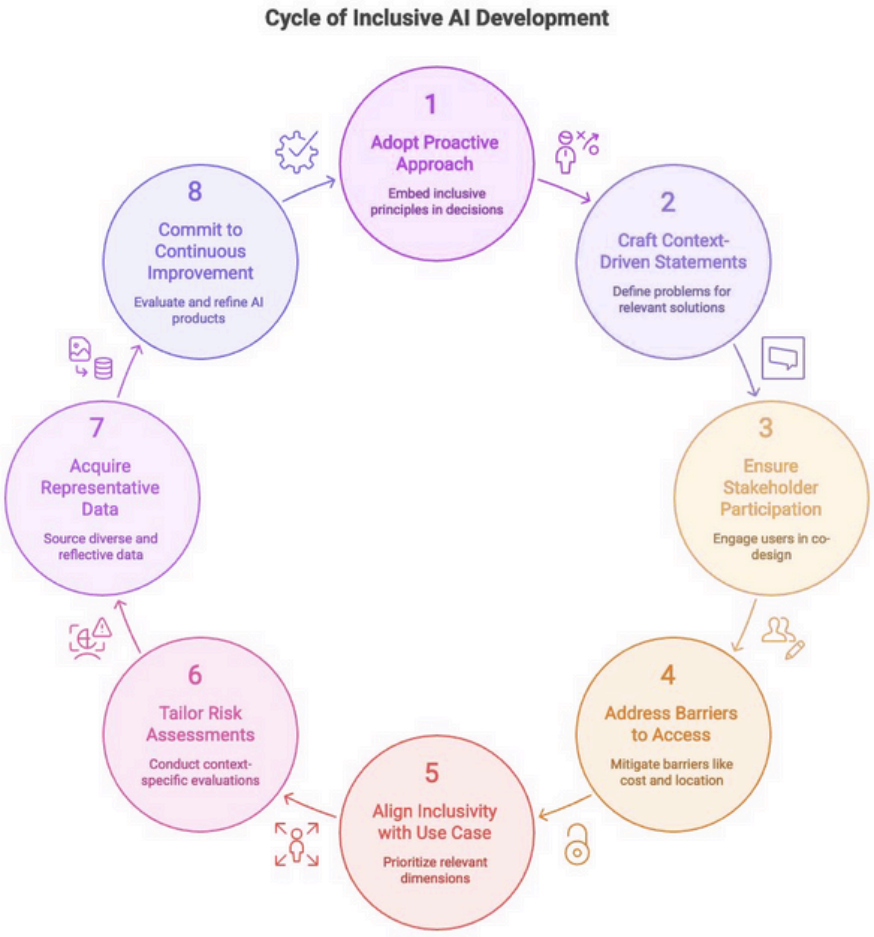
1. Adopt a proactive approach	Embed inclusive AI principles into organizational decisions—such as team qualifications, research activities, governance, and partnerships—and into all product design choices, including data sourcing and training protocols. This is a cross-cutting tenet that should apply uniformly to all use cases throughout the lifecycle.
2. Craft context-driven problem statements	Define problem statements to ensure AI solutions are inclusive and relevant, considering user challenges, targeted benefits, and clinical or operational settings.
3. Acquire representative data	Source diverse and representative data reflecting variations in abilities, age, gender, ethnicity, sexual orientation, socioeconomic status, geography.
4. Ensure meaningful stakeholder participation	Engage intended users and relevant stakeholders in co-design to address considerations for inclusive AI in healthcare, through the lifecycle of AI.
5. Address barriers to access and workflow realities	Collaborate with stakeholders to identify and proactively mitigate barriers—such as demographics, costs, location, infrastructure, literacy, and social hierarchies.
6. Align inclusivity with use case	Assess inclusivity by the product's context and application, prioritizing relevant dimensions such as genomic diversity for rare disease AI, or geographical reach for telemedicine tools. Specifically, considerations should include the lived experiences of LGBTQIA+ members, age (such as elderly people or children), indigenous lineage, local or vernacular language and usage of slang terms (e.g., to describe parts of the anatomy or symptoms experienced)[35], cultural factors such as those impacting help-seeking behaviours,[36] disease burden and healthcare priorities of Australia or India, and clinicians as intended users.

7. Tailor risk and impact assessments

Conduct context-specific algorithmic impact assessments and validation studies to evaluate relevant risks.

8. Commit to continuous improvement

Regularly evaluate, validate, and refine AI products to identify and address emerging inequities or exclusions.



[35] See Annexure I: Summary of Discussions from Australia Exchange Tour, Supplementary Materials, Day 3 Session 1 and Day 5 Session 1. See also Annexure II: Summary of Discussions from India Exchange Tour, Supplementary Materials, Day 4 Session 1

[36] "Health or care seeking behaviour has been defined as any action undertaken by individuals who perceive themselves to have a health problem or to be ill for the purpose of finding an appropriate remedy." - Editorial Health Seeking Behaviour in Context. 2003. See this article for more.

CASE STUDIES: APPLYING TENETS FOR CO-DESIGNING INCLUSIVE AI TO FOUR USE CASES

This project piloted the proposed eight tenets by workshopping it among the cohort participants across four use cases. The core findings from each use case is described in this section.

Use Case 1: AI Powered Scribe

Description:

An AI-powered medical scribe uses ambient listening to capture clinician–patient interactions and generate consultation summaries.[37] These are reviewed and approved by the clinician before being shared with the patient. In dialysis care for individuals with chronic kidney disease, the tool enhances accessibility, affordability, and dignity by reducing dependence on attendants and eliminating the need to transport physical medical records.

Applying the Tenets:

Tenet	Implementation Actions
Crafting a problem statement	Consumer needs a summary to enable easier access to healthcare. Doctor needs support to complete summaries[37] in a timely and smart manner, that does not add to their workload
Embedding meaningful stakeholder participation for co-design	• Conduct a think-out-loud session with clinicians to understand their workflow before, during, and after a consultation (e.g., do they have to click a button to allow patients to see their summaries and health records). • Conduct interviews[38] with patients (e.g., on how they typically access health records (e.g., do they get a link they have to sign in to? Do they get it in an app or a pdf). • Collaborate with clinical establishments (e.g., hospital) to do a controlled study testing the tool on consumers and clinicians. (e.g., assess the typical demographic characteristics of consumers served in the establishment, to see if the AI picks up their local language or use of slang terms)
Accounting for barriers to healthcare access or workflow realities of the intended users	• Evaluate whether the scribe will analysis exacerbate known barriers to healthcare access for vulnerable communities, by using qualitative research methods (e.g., a digital health equity framework[39]) • Ascertain if the consumer relies on the support of a caregiver for accessing healthcare (including the establishment and their health records). And whether that caregiver incurs a financial or other cost to support the consumer. • Identify whether the scribe can transcribe vernaculars and colloquialisms. • Ascertain if clinicians are equipped with IT infrastructure conducive to using AI scribes (e.g., if they use fast internet which would reduce the lag in the uploading of summaries, or the device used for ambient listening has a powerful mic and speaker to capture the consultation thoroughly).

[37]Heidi Health is an example of an AI scribe that uses ambient listening. We met with executives from Heidi Health during the Australia Exchange Tour. See Annexure I: Summary of Discussions from Australia Exchange Tour, Supplementary Materials.

[38]This is an indicative example of a research method that can be used. Interviews may not elicit usable insights, as consumers may sometimes tell you what they think you want to hear. Refer to Annexure IV: Suggested research methodologies to identify, evaluate or measure inclusive AI in healthcare, of the Supplementary Materials for a bank of research methods that facilitate the collection of such information.

[39]Richardson, S., Lawrence, K., Schoenthaler, A.M. et al. A framework for digital health equity. npj Digit. Med. 5, 119 (2022). https://doi.org/10.1038/s41746-022-00663-0

Aligning inclusivity with context/ use case	Developers can build a minimum viable AI Scribe and then improve its inclusivity within the context of clinicians needing a smart solution for medical summaries and consumers needing accessible summaries for continuity of care.
Tailoring risk assessments and impact assessments to context or use case	AI impact assessments and risk assessments can be done based on whether the AI is solving for the problem statement (i.e., clinicians' and consumers' needs identified above). For instance, if the AI tool is mishearing symptoms or incorrectly categorising information (e.g., considering important information as less relevant or important, or categorising information as clinical history instead of current state of health).[40]
Acquiring data relevant to the context/ use case	Ensure that that automatic speech recognition and natural language processing data sets and training instructions cover the accents, languages, and local slang used in the region.
Continuous improvement of the AI	The AI continues to absorb new terminology and vernacular used by consumers and clinicians during its deployment, which the developers ensure are incorporated into the AI's algorithms.

Use Case 2: AI Clinical Decision Support System (with Symptom Checker)

Description:

This AI-powered web platform assists consumers and nurses in assessing symptoms and guiding care decisions. Consumers input their symptoms along with basic demographic details (age, gender, ethnicity, location).[41] The system evaluates risks and directs them to suitable clinics or clinicians nearby. Nurses can review AI outputs, identify inaccuracies, and provide feedback to improve performance.

Applying the Tenets:

Tenet	Implementation Actions
Crafting a problem statement	Consumers often go through multiple consultations before they get appropriate care or experience significant wait times to see their clinicians. Clinical establishments of varying sizes struggle with overcrowded waiting rooms and heavy patient intake
Embedding meaningful stakeholder participation for co-design	• Capture and use inputs from nurses and allied healthcare professionals (such as community health workers) as they typically triage consumers. • Gather consumer inputs to ensure that the CDSS is trained to cater to varying levels of medical urgency, health and digital literacy, language and terminology (e.g., the British phrase "I can't spend a penny" refers to "can't pass urine") and demographic background. • Clinical validation of the safety of the tool by partnering with academic researchers who study how the CDSS assesses various vignettes to show whether it can be relied on.[42]

[40]The Royal Australian College of General Practitioners have acknowledged that these are known risks.

[41]Healthdirect is an example of such a website. Nirvana Luckraj, Former Chief Medical Officer, Healthdirect Australia, was a cohort member who travelled to India during the India Exchange Tour.

[42]Luckraj N, Strazzari R, Coiera E, Magrabi F. Assessing the Safety of a New Clinical Decision Support System for a National Helpline. Stud Health Technol Inform. 2024 Jan 25;310:514-518. doi: 10.3233/SHTI231018. PMID: 38269862.

Accounting for barriers to healthcare access or workflow realities of the intended users

Develop a feedback mechanism where nurses can flag or confirm the accuracy of the CDSS' triage determination (e.g., the CDSS triaging someone with severe chest pain to see a GP within a day, when the nurse uses their clinical judgment to upgrade the triage outcome to refer the consumer to the Emergency Department.[43]

Aligning inclusivity with context/ use case

The effect of using the CDSS should enhance access to healthcare for all people living in a region, including those who typically face barriers to healthcare access (e.g., indigenous people)

Tailoring risk assessments and impact assessments to context or use case

The CDSS does not provide medical treatment or diagnose medical conditions. It merely enables support for clinicians who ultimately conduct the diagnosis or provide treatment. Any research studies, impact assessments, or clinical safety validation should be done based on this context

Acquiring data relevant to the context/ use case

To ensure the CDSS is localised it for the region's context, data requirements include:

- Medical knowledge base of all diseases applicable to a given region[44]
- Specifics of the region's health systems such as general practitioner clinics, hospitals, urgent care clinics (e.g., the presence of alternative medicine clinics including ayurveda and homeopathy)
- Cultural, language, and other demographic data sets

Continuous improvement of the AI

Create a clinical governance framework and a safety testing and validation protocol by partnering with domain specific academic research experts. Additionally, provide feedback mechanisms both at the back end (i.e., for nurses) and front end (i.e., for consumers) to collect issues, suggest better results, or file complaints, with periodic reviews as part of the executing business resilience plans. The feedback is supplied to the developer team to improve the CDSS[45]

Use Case 3: AI Retinal Scanning Tool

Description:

An AI-enabled retinal imaging system supports community-based screening for conditions such as cataracts, colour blindness, and diabetic retinopathy.[46] It can be deployed in tele-ophthalmology and other public health settings to expand early detection and preventive care.

[43]Woods JA, Katzenellenbogen JM, Davidson PM, Thompson SC. Heart failure among Indigenous Australians: a systematic review. BMC Cardiovasc Disord. 2012 Nov 1;12:99. doi: 10.1186/1471-2261-12-99. PMID: 23116367; PMCID: PMC3521206.

[44]E.g., Crimean-Congo Hemorrhagic Fever (CCHF): High-frequency outbreaks in Gujarat districts like Amreli, Bhavnagar, Surendranagar, and Rajkot, linked to livestock and environmental factors. See Dandabathula, G., Bhardwaj, P., Muvva, V. R., Roy, S., Thekkedath, A. B., Kumar, G., ... Srivastav, S. K. (2025). Disease Outbreaks in India (2017–2023): Key Inferences from an Analysis of Weekly Records for Effective Outbreak Management and Response. Outbreak Management and Response, 1(1). https://doi.org/10.1080/29947677.2025.2466531

[45]Luckraj N, Strazzari R, Coiera E, Magrabi F. Assessing the Safety of a New Clinical Decision Support System for a National Helpline. Stud Health Technol Inform. 2024 Jan 25;310:514-518. doi: 10.3233/SHTI231018. PMID: 38269862.

[46]Forus Health is an example of a company with an AI powered tool for scanning eye conditions. We met with Forus Health during the India Exchange Tour. See also Annexure II: Summary of Discussions from India Exchange Tour, Supplementary Materials

Applying the Tenets:

Tenet	Implementation Actions
Crafting a problem statement	There is a lack of specialized ophthalmologists, while in countries like India there is a huge population living with diabetic retinopathy or other risks related to eye-health. Early detection of these conditions can easily help prevent blindness.[47] An AI retinal scanning tool can help with easy, cost-effective and early detection of such conditions thereby helping prevent blindness and enhance access to screening of such conditions regardless of location.
Embedding meaningful stakeholder participation for co-design	• Conduct workshops with ophthalmologists, endocrinologists, optometrists, and telemedicine providers to align AI features with real-world needs. • Engage with consumers and community healthcare workers to understand potential usability barriers. This could include issues like skillset to use the product, language barriers, and the behaviours of consumers • Conduct pilot programs in government hospitals, clinics and telemedicine hubs to gather inputs on the working of the product.
Accounting for barriers to healthcare access or workflow realities of the intended users	• Investigate and evaluate the known challenges in using an AI retinal scanning tool. These can be challenges arising due to demographics, costs, geography, infrastructure, literacy and social hierarchies. • Determine whether the consumer/ community healthcare worker requires additional financial, logistical or other related support to use AI-assisted retinal screening. • Based on the above bullet point, explore mitigation strategies such as providing subsidized screenings, training community health workers, or facilitating telemedicine services. • Identify whether healthcare facilities and clinics in different regions have the necessary infrastructure to deploy the tool effectively. This includes reliable internet, personnel trained to use phones and digital apps, lighting to capture images. • If infrastructure gaps exist, explore whether the AI tool can function in low-resource settings, such as through offline capabilities, mobile-friendly integrations, or battery-operated devices
Aligning inclusivity with context/ use case	The AI product in this case is for the early detection of diabetic retinopathy in a cost-effective manner to prevent blindness. The inclusivity efforts should be to ensure that there is diverse representation of training data to ensure that screenings have high degree of accuracy. For instance, children's retinal structures differ from adults, and elderly patients may have droopy eyelids or other age-related eye conditions that can affect image capture. Additionally, ethnic variations in eye pigmentation must be accounted for, as differences in melanin levels can impact how retinal images are processed by AI models.

[47]Mrinalini Dhyani, From cancer to diabetic retinopathy, how AIIMS is betting big on AI to aid in diagnostics, The Print. Available at: and Cade Metz, India Fights Diabetic Blindness With Help From A.I.

Tailoring risk assessments and impact assessments to context or use case

- The impact assessments should incorporate real-world usability studies to evaluate how well the AI retinal scanning tool integrates into different environments. For example, does it work well in low-light settings, with limited internet bandwidth etc.
- The AI retinal tool's diagnostic accuracy should be tested on consumers of varying ages, ethnicities, and underlying health conditions, ensuring it performs equitably across populations.
- Evaluation of false positives or negative rates and their potential harms on vulnerable groups or communities from lower socio-economic strata should be specifically assessed.

Acquiring data relevant to the context/ use case

The data set for retinal scans should be diverse and high-quality representative datasets that reflect the populations and conditions where the AI product will be deployed.

This involves collaborating with hospitals, research institutions and community health programs to access real-world retinal images from diverse patient groups, including those from rural and low-income settings where AI-assisted screening could have the greatest impact.

Continuous improvement of the AI

Ensure there are feedback loops with clinicians and healthcare providers, allowing them to flag cases where the AI product misdiagnoses conditions or struggles with certain retinal images.

Furthermore, partnerships with public health organizations can help gather data on how the product performs in rural areas, and other underrepresented regions and demographics.

There is continuous monitoring of the performance of the tool.

Use Case 4: AI Chatbot for mental health support

Description:

A conversational AI tool offers mental health resources and coping strategies for anxiety and depression.[48] It interacts naturally with users, answers questions, and refers individuals to licensed professionals when formal intervention is needed.

Applying the Tenets:

Tenet	Implementation Actions
Crafting a problem statement	Access to mental health professionals if often limited and expensive. There is also an associated stigma with seeking help related to mental health. An AI-enabled mental health chatbot can help with facilitating discussions and offer a space to discuss mental health issues without any judgement. However, such an AI-enabled chatbot will not be able to cover sever mental health conditions that may cause feelings of self-harm. In such cases, the chatbot could provide a referral to an actual trained professional.

[48]For instance, Wysa. Smriti Joshi, Chief Psychologist, Wysa, was our cohort member on the Australia Exchange Tour. See also Annexure I: Summary of Discussions from Australia Exchange Tour, Supplementary Materials

Embedding meaningful stakeholder participation for co-design

- Conduct regular consultations with the community where the chatbot is intended to serve. Individuals from different socio-economic, cultural, and linguistic backgrounds should be involved to ensure that the chatbot resonates with diverse lived experiences. This includes youth, older adults, LGBTQ+ individuals, and people with disabilities.
- Gather inputs from key stakeholders including mental health professionals, individuals with lived experiences, caregivers, and advocacy groups.
- Collaborate with stakeholders during the design phase to ensure chatbot responses are appropriate, empathetic, and contextually relevant.

Accounting for barriers to healthcare access or workflow realities of the intended users

- Evaluate to what extent chatbots reduce or exacerbate barriers to mental healthcare by considering factors such as digital literacy, affordability, stigma, language accessibility, and cultural differences.
- Determine whether the users rely on caregivers or family members for accessing mental health support (such as adolescents, elderly individuals, or people with severe mental illnesses). If so, the chatbot should include guidance for caregivers while respecting the user's autonomy and confidentiality

Aligning inclusivity with context/ use case

- The AI chatbot should align with the specific function of providing mental health support based on the individual or community it is targeted towards. If the mental health chatbot is to be used specifically in rural regions, then the responses should be tailored to account for the regional and cultural factors.
- The AI's inclusivity should reflect mental health realities across different life stages, cultures, and socio-economic conditions, ensuring personalized, context-aware support.

Tailoring risk assessments and impact assessments to context or use case

Unlike generic AI tools, a mental health chatbot interacts with emotionally vulnerable users, making it critical to assess psychological risks, accuracy of advice, and potential biases in the system. The risk assessment should account for the chatbot's decision-making process, the reliability of its interventions, and its potential impact on diverse user groups.

A thorough algorithmic risk assessment should evaluate emotional sensitivity by determining whether the chatbot recognizes high-risk indicators such as mentions of self-harm, suicidal ideation, or extreme distress and escalates critical cases to human professionals effectively.

A risk assessment should examine whether the chatbot prioritizes certain mental health narratives over others, ensuring it accounts for cultural variations in expressing distress. Gender and LGBTQ+ inclusion should be evaluated to ensure the chatbot provides support without reinforcing stigma or exclusion.

Acquiring data relevant to the context/ use case

The training data for the chatbot should be diverse, representative, and context aware.

The datasets should include linguistic and cultural variations in mental health expression. It must cover conversational patterns from multiple demographics and account for historical biases in mental health diagnostics.

The data should be gathered in collaboration with community leaders, mental health NGOs, hospitals and other organisations dealing with mental health initiatives.

Continuous improvement of the AI

The AI chatbot should be regularly updated and monitored. Routine assessments of accuracy, fairness, and cultural sensitivity are critical.

Actions taken include:

- Implement mechanisms for consumers to flag chatbot responses that are inaccurate, insensitive, or unhelpful which can then be used to improve the chatbot.
- Conduct periodic usability testing with individuals from different age groups, gender identities, ethnic backgrounds, and socio-economic statuses. Understanding their experiences helps refine chatbot interactions.
- Regular audits to check for biases in datasets. Establishing advisory groups consists of psychologists, mental health professionals, community workers and representatives from diverse backgrounds to review the chatbot's inclusivity efforts.

CONCLUSION

This toolkit outlines the co-design tenets and relies on four case studies to demonstrate their application. By using the toolkit, AI developers, deployers, and potentially procurers as well, should find practical advice on inclusive co-design methods spanning the entire AI lifecycle. Taking a systematic, collaborative approach to ensure inclusive AI in healthcare is essential for ensuring that no person is left behind – whether it is the clinician or the end consumer.

The process of "co-designing"—emphasised by many stakeholders and experts involved in our project—calls for developers and deployers to actively incorporate inputs from end users like patients, clinicians, and other relevant parties. It's also crucial to factor in the unique environments where AI technologies will be used throughout every phase of their development.

As we near the India AI Impact Summit 2026, explorations around practical steps toward the inclusive development and deployment of AI, for all people irrespective of their background or ability remain particularly salient. The Summit is a global flagship event which will be hosted by India to better understand how we can harness AI for social good including by identifying, evaluating and mitigating the potential harmful impacts of AI, while documenting, showcasing, and encouraging the beneficial impacts of AI. We hope this Report and its allied outputs (see the Project Outputs chapter of this Report) provide recommendations, roadmaps, and steps that are meaningful for global policymakers, developers, civil society and academia, and deployers during the Summit, as they grapple with frameworks and strategies for harnessing the immense potential of AI safely.

More generally, we hope that the outputs of Project BUILD, including the toolkit proposed can contribute specificity to the global discourse and research on solutions to make AI safer and inclusive in healthcare.

We also see several areas for further inquiry and co-design emanating from the learnings and recommendations of Project BUILD. For instance, research can be conducted to test the tenets and definition within healthcare itself, to stress test the workability of the tenets/ definition across more use cases and local contexts to ensure they are fit for purpose. Similarly, unpacking co-design of AI in other sectors, and assessing whether the tenets and definition proposed can work in other sectors as well.

Finally, researchers could study the conduct and evaluation of meaningful incident reporting of AI across use cases in healthcare (and indeed in other sectors) to build a global collective knowledge of the harms and mitigation strategies. While studying this, it would also be relevant to gather the industry and civil society's perspectives, to ensure the reporting is not an added burden or tick-box exercise.

Co-designing AI goes beyond a legal requirement or policy prescription. Adopting this approach to AI in healthcare would help cultivate models that work for intended users. It upholds international human rights law, respects human dignity and equally crucially, makes complete business sense. For companies developing, and/or deploying AI in healthcare, building inclusive AI could translate to the unlocking of an unexplored market. Building inclusive AI will ensure people with disabilities, elderly people, and people living with rare diseases or chronic illnesses, have products and services that are curated for them and respect their unique needs/realities.

PROJECT OUTPUTS

Project BUILD produced the several outputs which may be found in the Supplementary Materials document. The outputs are briefly summarised here. All outputs can be found at our website.

1. Concept note

The concept note surveys existing policy discourse on inclusive AI in healthcare to arrive at research questions and a scope for Project BUILD. We corroborated our preliminary assessment that there was a need for setting out an approach or framework for actors in the AI and healthcare ecosystems to ensure that marginalised and vulnerable communities are included in AI used in healthcare. To stress test and refine the concept note, we conducted a focus group discussion with Indian technology, inclusion, and healthcare experts, to gather their inputs on inclusive AI in healthcare. This concept note is part of Milestone 1 of our Grant Deliverables.

2. Briefing Paper on Australia's Legal and Policy Landscape For AI, Inclusion, and Health-Technology

This paper captures the landscape of the relevant healthcare, inclusion, and technology laws, policies, and regulators in Australia, based on the research questions in the concept note. The landscape paper was shared with Cohort Members from Australia and India, to create the collective understanding of the policy and legal landscape for the Exchange Tours. The paper also provides a list of questions for the Cohort Members to explore with experts during the Exchange Tours. The paper is a part of Milestone 2 of our Grant Deliverables.

3. Briefing Paper on India's Legal and Policy Landscape For AI, Inclusion, and Health-Technology

This paper captures the landscape of the relevant healthcare, inclusion, and technology laws, policies, and regulators in India, based on the research questions in the concept note. The paper was shared with Cohort Members from Australia and India, to create the collective understanding of the policy and legal landscape for the Exchange Tours. The paper also provides a list of questions for the Cohort Members to explore with experts during the Exchange Tours. The paper is a part of Milestone 2 of our Grant Deliverables.

4. Background Brief for Government

This report summarises the key learnings from the Exchange Tours to Australia and India, including the concept, value, and implementation of co-design principles. The learnings captured were based on the conversations among Cohort Members (e.g., at the cohort brainstorming sessions we had during the tours) and the insights shared by the speakers who met with the Cohort Members in both countries. The report also provided partnership ideas for Australian and Indian academia, civil society, government, and industry to consider bilaterally, to drive inclusive AI in healthcare. The report fulfils Milestone 4 of our Grant Deliverables.

5. Co-Designing AI for Healthcare

This toolkit offers a definition for "inclusive AI in healthcare", tenets for implementing inclusive AI in healthcare through the lifecycle of AI, four use cases to demonstrate implementation, and policy enablers for driving inclusive AI in healthcare. The report is intended for developers and deployers and holds persuasive value for procurers as well. The report fulfils Milestone 5 of our Grant Deliverables.

GLOSSARY

ABDM	Ayushman Bharat Digital Mission
AI	Artificial Intelligence
ACSQHC	Australian Commission on Safety and Quality in Health Care
ADHA	Australian Digital Health Agency
AHPRA	Australian Health Practitioner Regulation Agency
AHRC	Australian Human Rights Commissioner
AIAs	Algorithmic Impact Assessments
AIIMS	All India Institute of Medical Sciences
ASHAs	Accredited Social Health Activists
BIS	Bureau of Indian Standards
CAIDE	Centre for AI and Digital Ethics
CDSCO	Central Drugs Standard Control Organisation
CDSS	Clinical Decision Support System
Co-design	A participatory approach where stakeholders, including end-users, collaborate in the design and development of AI systems, ensuring inclusivity
CoEs	Centres of Excellence
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DoHAC	Department of Health and Aged Care

GLOSSARY

DPI	Digital Public Infrastructure
DPDPA	Digital Personal Data Protection Act 2023
DST	Department of Science and Technology
EHR	Electronic Health Records
eSanjeevani	National Telemedicine Service of India
GDPR	General Data Protection Regulation
ICMR	Indian Council of Medical Research
IECs	Institutional Ethics Committees
IMDRF	International Medical Device Regulators Forum
MeitY	Ministry of Electronics and Information Technology
MoHFW	Ministry of Health and Family Welfare
NHA	National Health Authority
NHRC	National Human Rights Commission India
PWD	Persons with Disabilities
PMJAY	Pradhan Mantri Jan Arogya Yojana
SaMD	Software as a Medical Device
Tele MANAS	National Tele Mental Health Programme
TGA	Therapeutic Goods Administration