**Article title:** Achieving Diagnostic Excellence: Roadmaps to Develop and Use Patient-Reported Measures With an Equity Lens

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**Supplementary file 1.** List of Expert Convening Participants and Supplementary Figures.

## Expert Convening Participants

| | Participant | Primary Affiliation | Primary Research Interests |
|---|---|---|---|
| **1.** | **Aiyegbusi, Olalekan Lee, MBChB, PhD** | University of Birmingham, UK | Management of chronic conditions, Patient-reported outcomes, Patient and public involvement and engagement |
| **2.** | **Anhang-Price, Rebecca, PhD** | RAND Corporation, USA | Health Care Quality Measurement, Patient and family care experiences, Program Evaluation |
| **3.** | **Beaton, Dorcas, PhD** | Institute for Work & Health, Toronto, Canada | Measurement, Translation of measurement into clinical practice, Musculoskeletal disorders |
| **4.** | **Cleary, Paul D., PhD** | Yale School of Public Health, USA | Methods for using patient reports to improve the quality of medical care, Relationships between clinician and organizational characteristics and the quality of medical care |
| **5.** | **Dahm, Mary, PhD, MA** | Australian National University, Australia | Communicating for Diagnostic Excellence, Language impact on patient safety and quality of care, Improving critical diagnostic conversations, Managing and communicating uncertainty |

| | Participant | Primary Affiliation | Primary Research Interests |
|---|---|---|---|
| **6.** | **Dolka, Io, MS** | Grey Zone, LLC, USA | Patient Advocacy, Patient-Clinician Communication for Diagnostic Excellence, Patient Engagement, Chronic and Rare Medical Conditions |
| **7.** | **Etz, Rebecca S., PhD** | Virginia Commonwealth University, USA | Primary care measures, theories of primary care, practice transformation, and stakeholder engagement |
| **8.** | **Geraedts, Max, MD,** | Philipps University of Marburg, Germany | Healthcare quality and patient safety, Health Policy, Health Services Research |
| **9.** | **Golden, Sara, PhD** | VA Portland Health Care System, USA | Patient-clinician communication, Communication around the risk of cancers, shared decision-making |
| **10.** | **Greenhalgh, Joanne, PhD** | University of Leeds, UK | Evaluation of social programs, Healthcare Policy and Practice, Realist methods, Patient Reported Outcome Measures, Clinical decision making |
| **11.** | **Hannawa, Annegret F., PhD** | Università della Svizzera italiana, Lugano, Switzerland | Safe communication, error prevention |
| **12.** | **Hess, Rachel, MD, MS** | University of Utah Health System, USA | Patient-centered outcomes, Health-related quality of life, Interventions to improve the delivery of health care |
| **13.** | **Holve, Erin, PhD** | Department of Health Care Finance, Washington DC Government, USA | Health Policy and Health Services Research |
| **14.** | **Langhinrichsen-Rohling, Jennifer, PhD** | University of North Carolina, Charlotte, USA | Community-based research, Underserved and disadvantaged populations, Integration of mental and behavioral health care into primary care and school settings; Institutional betrayal and Institutional integrity |
| **15.** | **Lundberg, Brita, MD** | Lundberg Health Advocates, USA | Patient advocacy, Infectious diseases, Diagnostic dilemmas |
| **16.** | **Reeve, Bryce, PhD** | Duke University School of Medicine, USA | Patient-reported outcomes, Health-related Quality of Life, Cancer Outcomes, Psychometrics, and Questionnaire design |
| **17.** | **Rendle, Katharine A., PhD, MSW, MPH** | Hospital of the University of Pennsylvania, USA | Cancer prevention and care, Healthcare delivery research, Mixed-methods research, Clinical epidemiology, Implementation science |
| **18.** | **Repp, Allen B., MD, MSc** | University of Vermont's Larner College of Medicine, USA | Healthcare quality and patient safety, quality measures, Hospital Medicine, General Internal Medicine |
| **19.** | **Samuel-Ryals, Cleo A., PhD** | University of North Carolina at Chapel Hill, USA | Disentangling multilevel sources of disparities in palliative and supportive cancer care, Addressing inequities through system-level approaches, Leveraging health informatics tools |

| | Participant | Primary Affiliation | Primary Research Interests |
|---|---|---|---|
| **20.** | **Sandhu, Alexander, MD, MS** | Stanford Medicine, USA | Health Economics, Implementation of High-value Care Strategies, and Comparative Effectiveness |
| **21.** | **Schwartz, Bradley L., JD** | Greater National Advocates, USA | Promoting the lifesaving benefits of independent patient advocacy in the clinical setting |
| **22.** | **Thompson, Cristina J., MS** | University of Wollongong, Australia | Public Health, Health Services Research, Evaluation, Knowledge translation, Implementation science |
| **23.** | **Valderas, Jose M., MD, PhD, MPH** | University of Exeter Medical School, UK | Patient reports of experiences and outcomes for decision making in clinical practice and health policy, Health care quality and safety, Primary care |
| **24.** | **Williams, Kate, PhD** | University of Wollongong, Australia | Health and social program evaluation; health outcomes measurement; health services research |

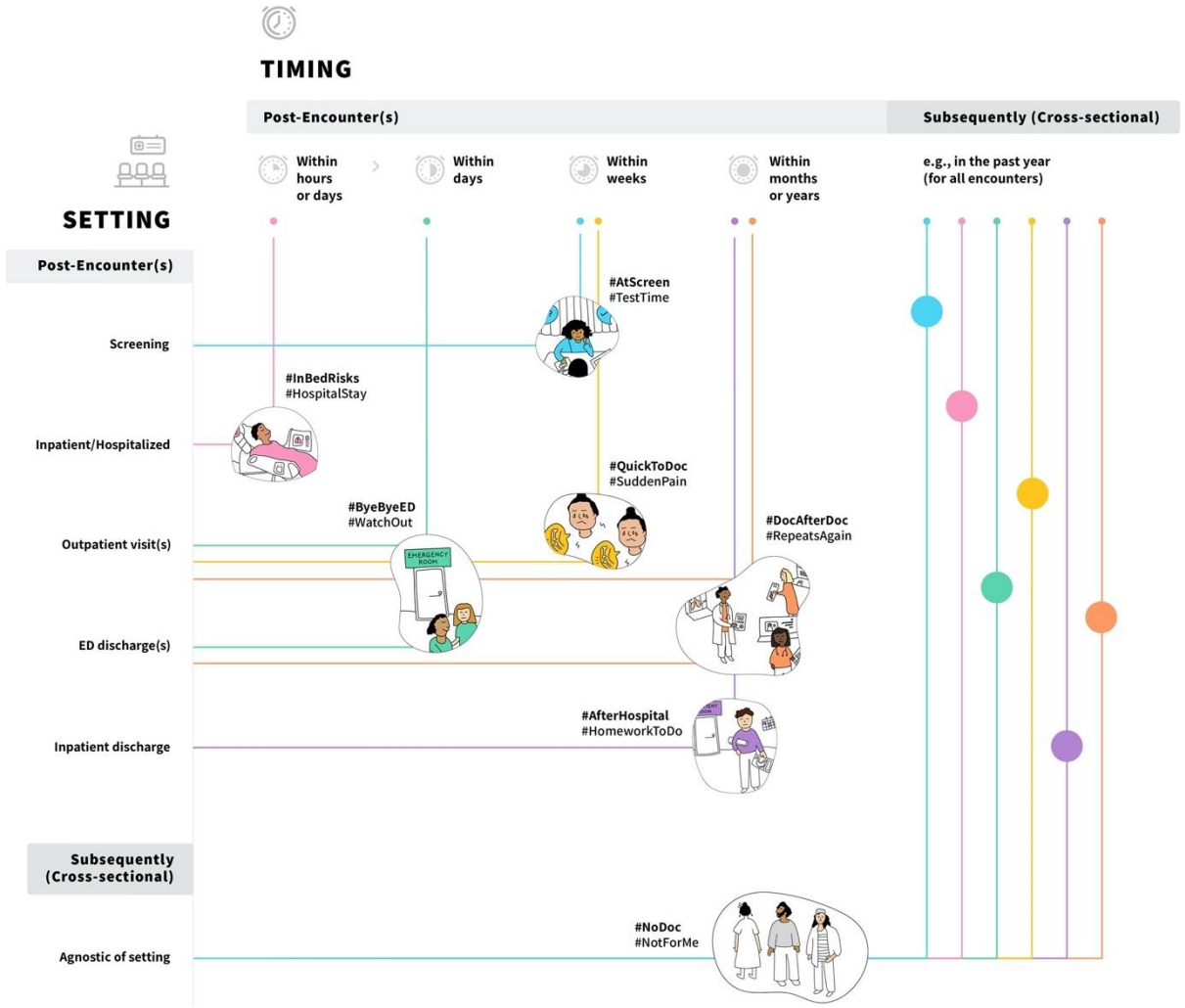



*Figure hangtags for diagnostic journey groupings: #InBedRisks/#HospitalStay – those journeys that occur during hospitalization; #ByeByeED/#WatchOut – those post emergency care discharge or post an urgent outpatient visit; #QuickToDoc/#SuddenPain – those post a series of outpatient visits; #AfterHospital/#HomeworkToDo – those post inpatient discharge; #DocAfterDoc/#RepeatsAgain – those post multiple outpatient visits or post multiple emergency department visits; #AtScreen/#TestTime – those post routine screening; #NoDoc/#NotForMe – those who are not engaged with the health systems in their diagnostic capacities*

**Figure S1. Timing and setting measurement opportunities. Framework for patient-reported measurement opportunities of diagnostic excellence**


**Figure S2. Correspondence of diagnostic excellence goals with Framework's diagnostic journeys**

*Figure hangtags for diagnostic journey groupings: #InBedRisks/#HospitalStay – those journeys that occur during hospitalization; #ByeByeED/#WatchOut – those post emergency care discharge or post an urgent outpatient visit; #QuickToDoc#SuddenPain - those post a series of outpatient visits; #AfterHospital/#HomeworkToDo – those post inpatient discharge; #DocAfterDoc/#RepeatsAgain – those post multiple outpatient visits or post multiple emergency department visits; #AtScreen/#TestTime - those post routine screening; #NoDoc/#NotForMe – those who are not engaged with the health systems in their diagnostic capacities*

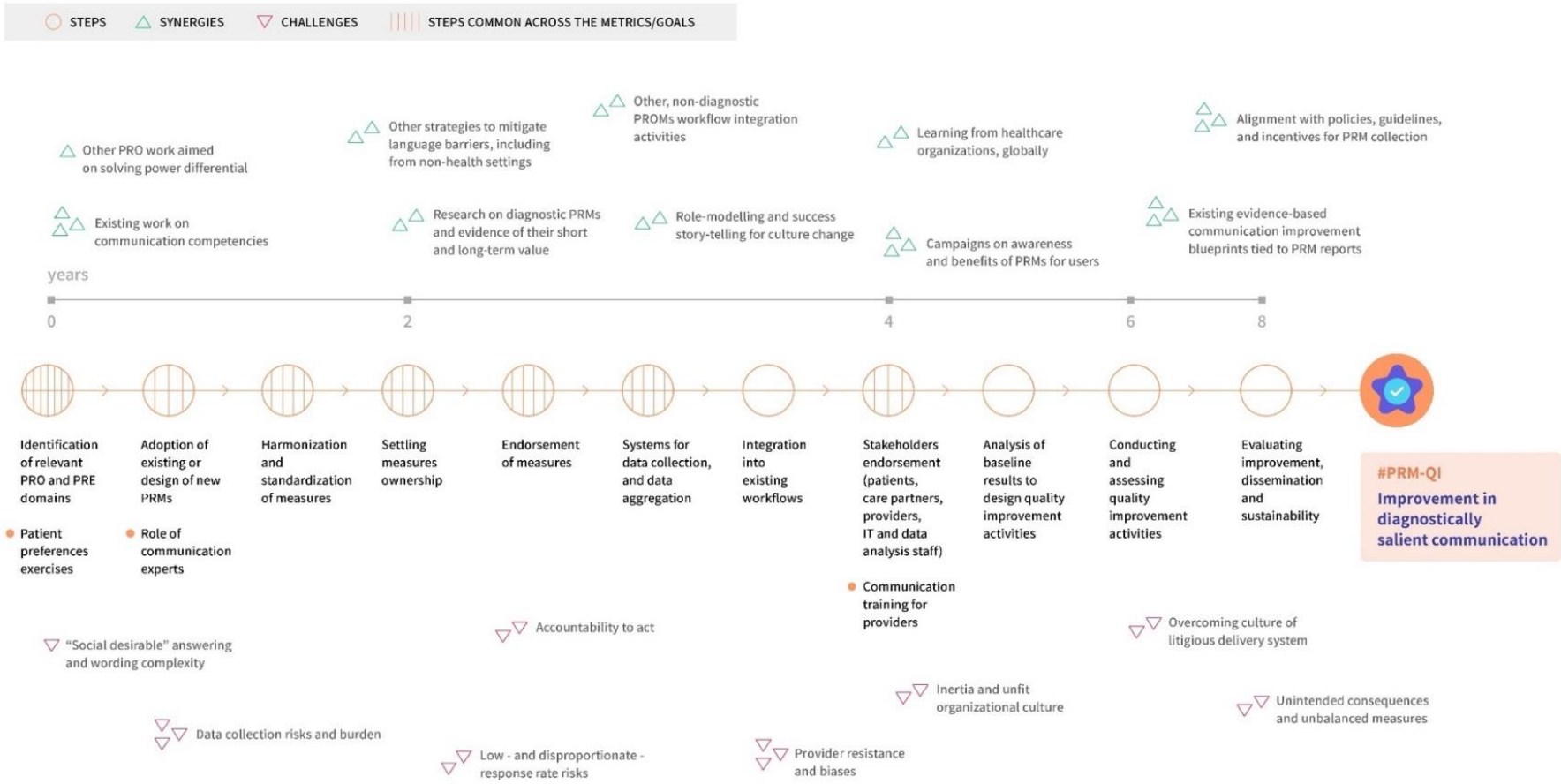



**Figure S3. Roadmap towards improvement in diagnostically salient communication**

*Abbreviations: PRO, patient-reported outcome; PRE, patient-reported experience; PROM, patient-reported outcome measure; PRM, patient-reported measure; IT, information technology; #PRM-QI, PRM-based organizational quality improvement. Figure elements: #PRM-QI - diagnostic excellence goal's hashtag and accompanying pictogram; improvement in diagnostically salient communication - PRM use case for that goal formulated as a target; steps depicted as circles where the number of perpendicular lines inside each circle shows how much that step is consistent across other goals; synergies depicted as green triangles with their impact as low, moderate, or high reflected via the number of triangles; challenges and their magnitude are shown via purple triangles following the same manner; location of synergies and challenges respectively to the step symbolizes their association with that specific step in time; timeline in calendar years.*

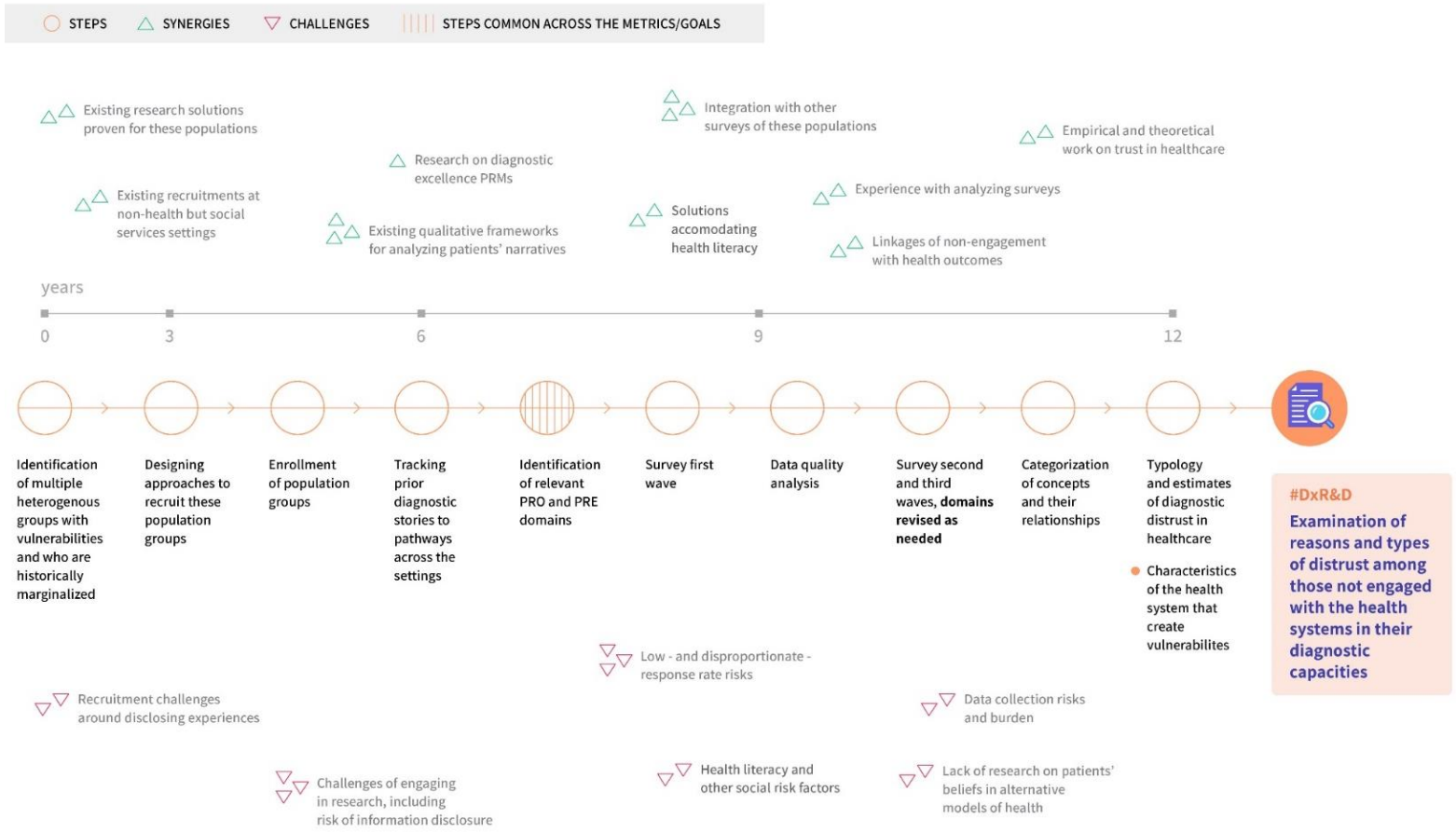
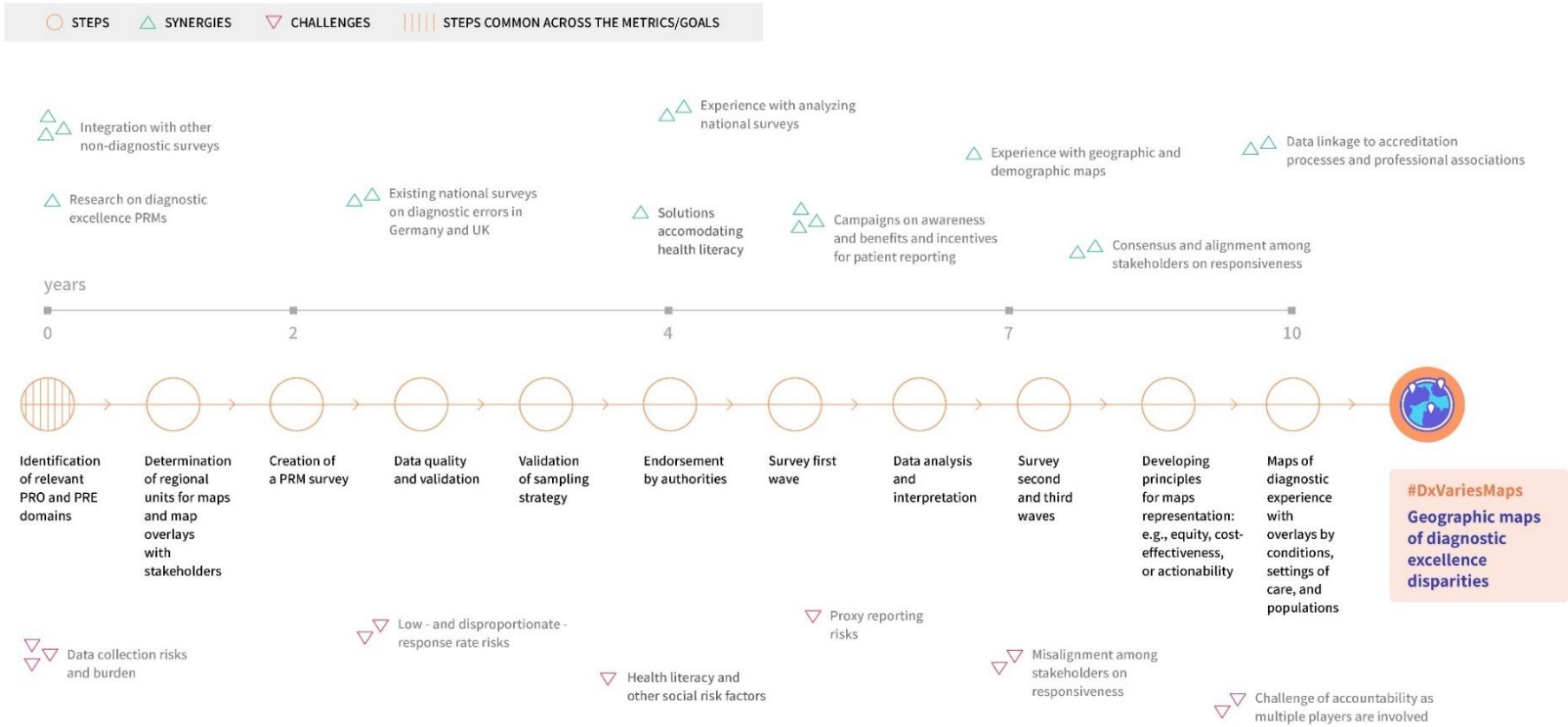



**Figure S4. Roadmap towards examination of reasons and types of distrust among those not engaged with the health system in their diagnostic capacities**

*Abbreviations: PRO, patient-reported outcome; PRE, patient-reported experience; PRM, patient-reported measure as an all-inclusive label; #DxR&D, PRMs for research on diagnostic excellence. Figure elements: #DxR&D - diagnostic excellence goal's hashtag and accompanying pictogram; examination of reasons and types of distrust among those not engaged with the health system in their diagnostic capacities - PRM use case for that goal formulated as a target; steps depicted as circles where the number of perpendicular lines inside each circle shows how much that step is consistent across other goals; synergies depicted as green triangles with their impact as low, moderate, or high reflected via the number of triangles; challenges and their magnitude are shown via purple triangles following the same manner; location of synergies and challenges respectively to the step symbolizes their association with that specific step in time; timeline in calendar years.*




## Figure S5. Roadmap towards geographic maps of diagnostic excellence disparities

*Abbreviations: PRO, patient-reported outcome; PRE, patient-reported experience; PRM, patient-reported measure as an all-inclusive label; UK, United Kingdom; #DxVaries Maps, identifying patterns of diagnostic excellence with PRMs. Figure elements: #DxVaries Maps - diagnostic excellence goal's hashtag and accompanying pictogram; geographic maps of diagnostic excellence disparities - PRM use case for that goal formulated as a target; steps depicted as circles where the number of perpendicular lines inside each circle shows how much that step is consistent across other goals; synergies depicted as green triangles with their impact as low, moderate, or high reflected via the number of triangles; challenges and their magnitude are shown via purple triangles following the same manner; location of synergies and challenges respectively to the step symbolizes their association with that specific step in time; timeline in calendar years.*

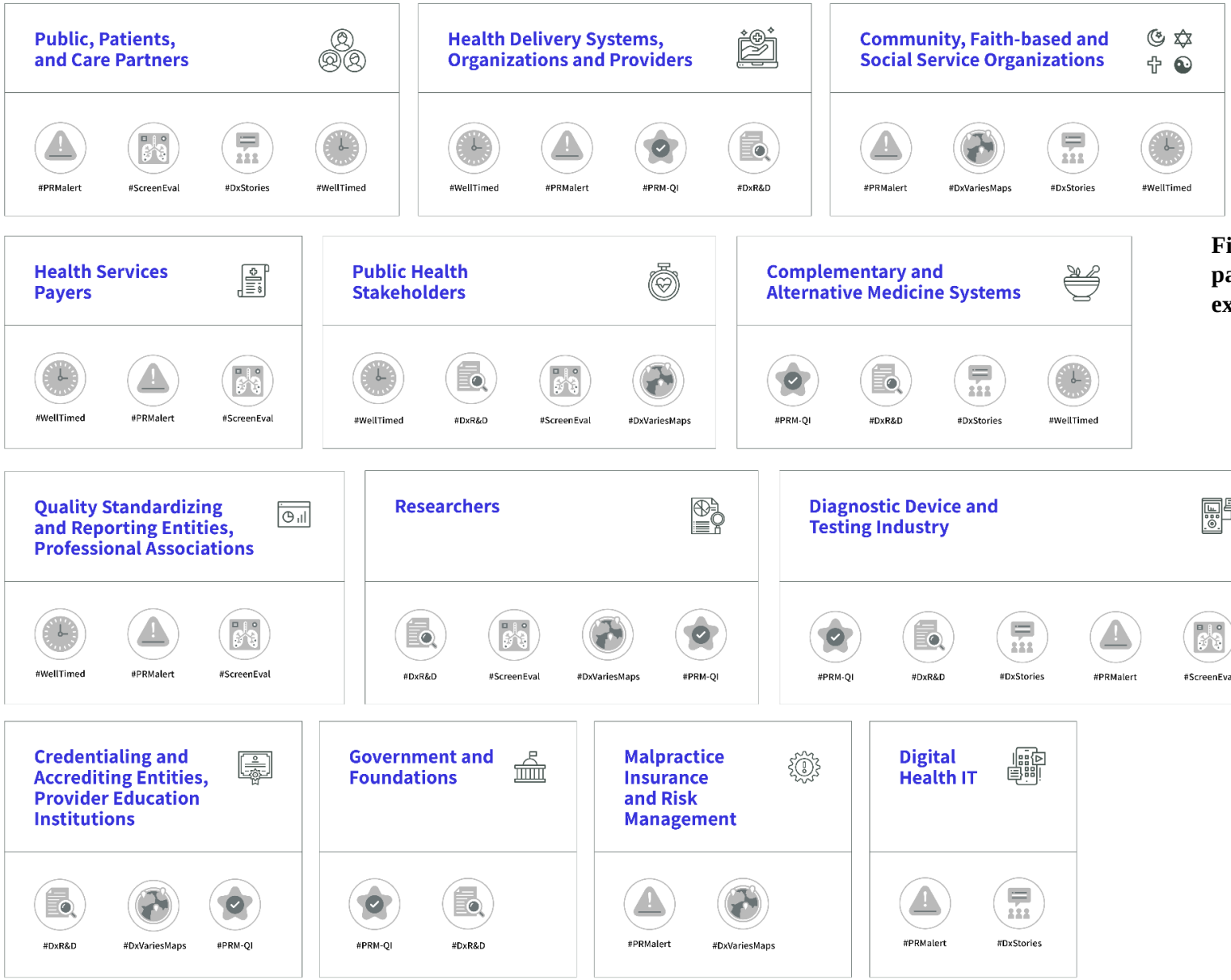



**Figure S6. Stakeholders of patient-reported diagnostic excellence**

*Figure abbreviations/hashtags.*

*#WellTimed: safety net for diagnostic continuity using PRMs; #PRMAlert: Rapid diagnostic patient-reported measure-based alerts; #PRM-QI: PRMs for organizational quality improvement; #DxR&D: PRMs for research on diagnostic excellence; #ScreenEval: PRMs evaluating routine screenings; #DxVariesMaps: identifying patterns of diagnostic excellence with PRMs; #DxStories: PRMs supporting patient diagnostic story-telling. PRM: patient-reported measure.*

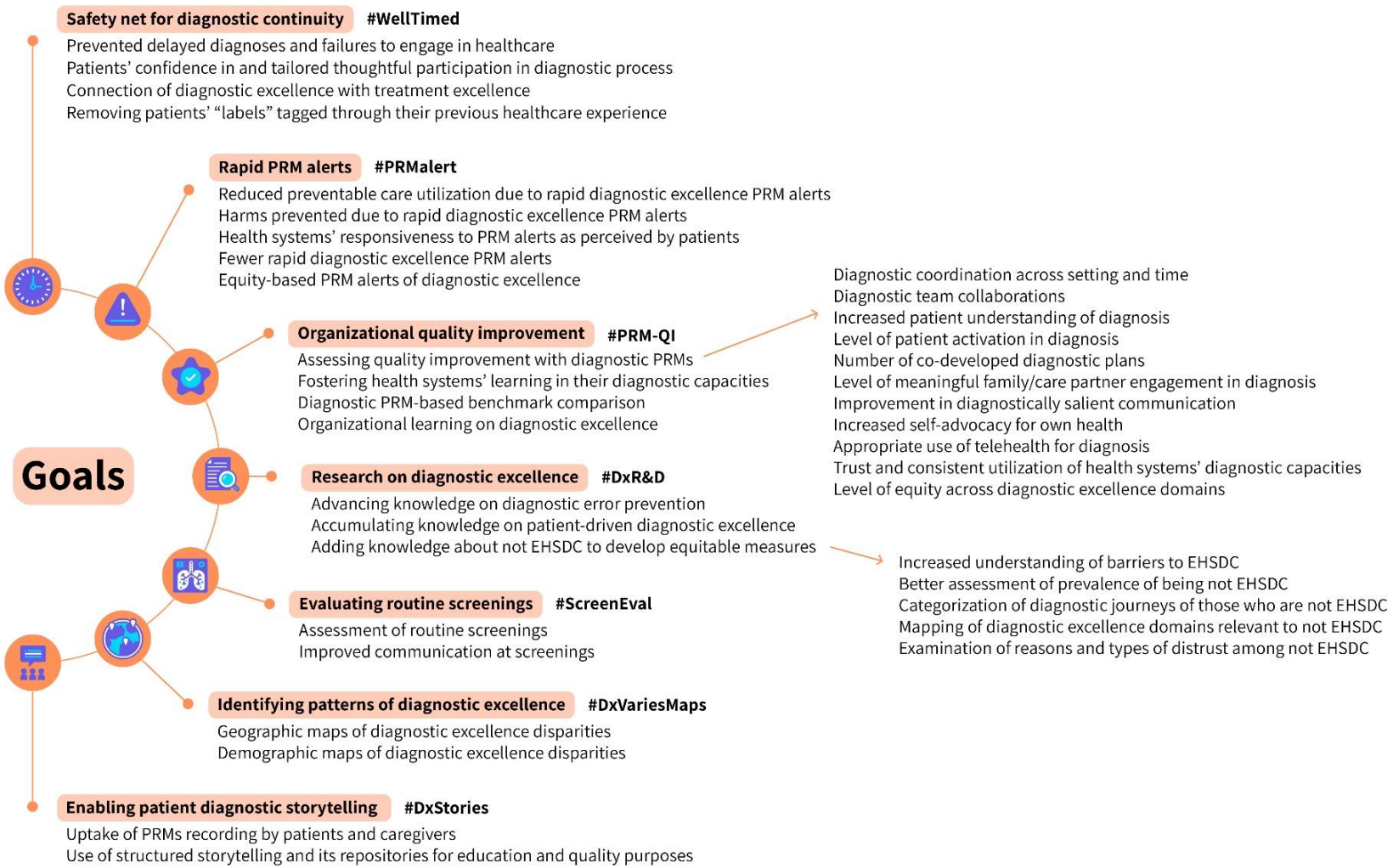



**Figure S7. Diagnostic excellence goals that can be achieved with patient-reported measures.**

*Abbreviations: EHSDC, engagement with health systems in their diagnostic capacities, including partial engagement; Dx, diagnosis; PRM, patient-reported measure; QI, quality improvement; R&D, research and development. Figure elements: pictorial and #hashtag abbreviations of goals highlighted in orange and bolded; the lists under each goal provide specific examples, including measure concepts (e.g., equity-based PRM alerts) and, for some, use cases (e.g., geographic maps of diagnostic disparities).*

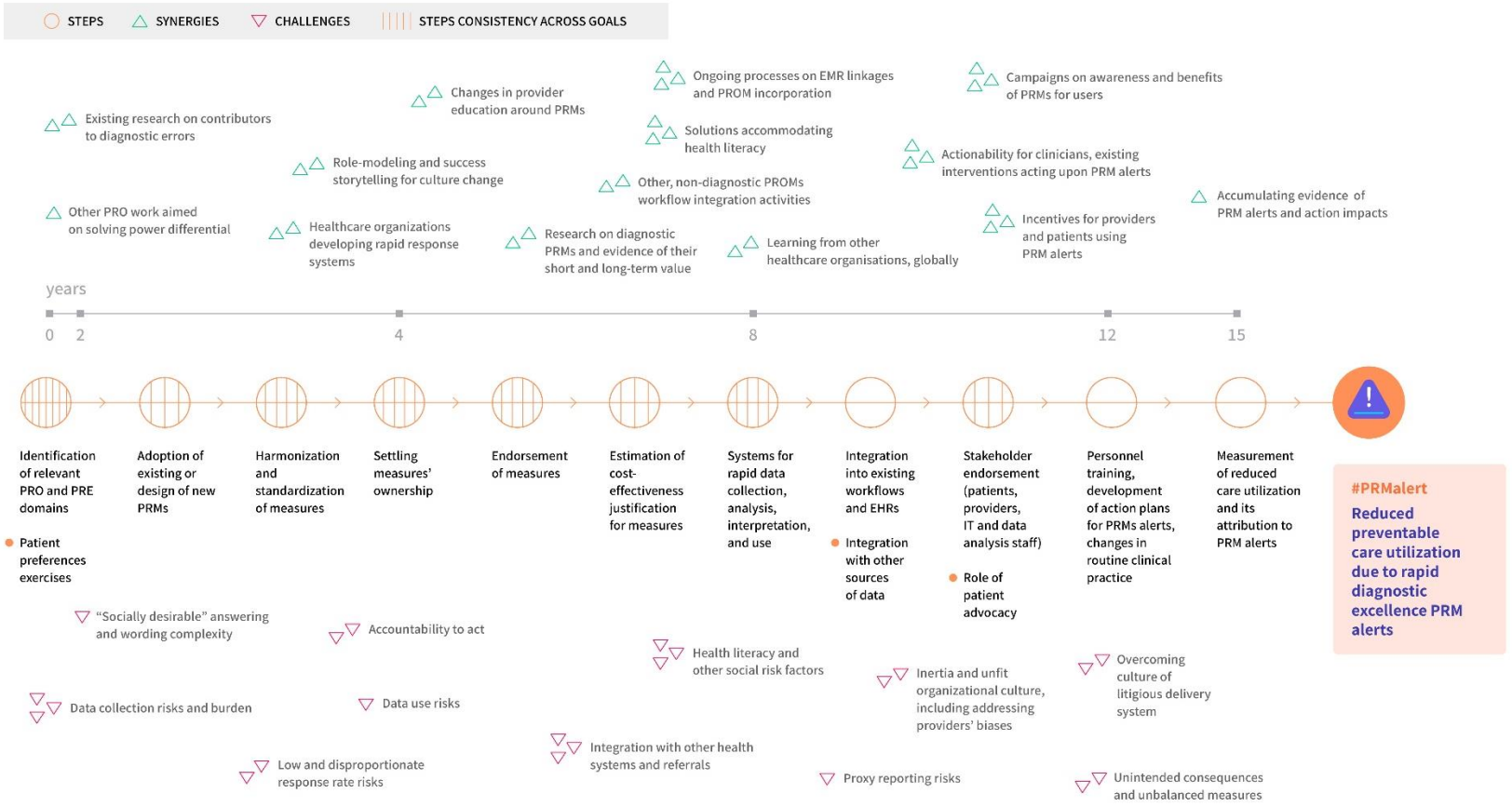



**Figure S8. Roadmap towards reduced preventable care utilization due to rapid diagnostic excellence PRM alerts.**

*Abbreviations: PRO, patient-reported outcome; PRE, patient-reported experience; PROM, patient-reported outcome measure; PRM, patient-reported measure; IT, information technology; EHR, electronic health record; EMR, electronic medical record; #PRMalert, rapid diagnostic patient-reported measure-based alerts. Figure elements: #PRMalert - diagnostic excellence goal's hashtag and accompanying pictogram; reduced preventable care utilization due to rapid diagnostic excellence PRM alerts - PRM use case for that goal formulated as a target; steps depicted as circles where the number of perpendicular lines inside each circle shows how much that step is consistent across other goals; synergies depicted as green triangles with their impact as low, moderate, or high reflected via the number of triangles; challenges and their magnitude are shown via purple triangles following the same manner; location of synergies and challenges respectively to the step symbolises their association with that specific step in time; timeline in calendar years.*