AUSTRALIAN INSTITUTE
OF HEALTH INNOVATION
Faculty of Medicine, Health and Human Science

Te Tāhū Hauora
Health Quality & Safety Commission

MACQUARIE University

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OF HEALTH INNOVATION

The Future of Healthcare to 2030: The Aotearoa New Zealand context

November 8th, 2023
1:00 – 1:45 pm
45-minute keynote

Jeffrey Braithwaite, PhD,
FIML, FCHSM, FFPHRCP, FAcSS, Hon FRACMA, FAHMS
Professor and Director
Australian Institute of Health Innovation
Director
Centre for Healthcare Resilience and Implementation Science
President
International Society for Quality in Health Care (ISQua)

Quality Improvement Scientific Symposium 2023 (Auckland, New Zealand)

Second Keynote - November 8, 2023

Holiday Inn Auckland Airport, Māngere, Auckland

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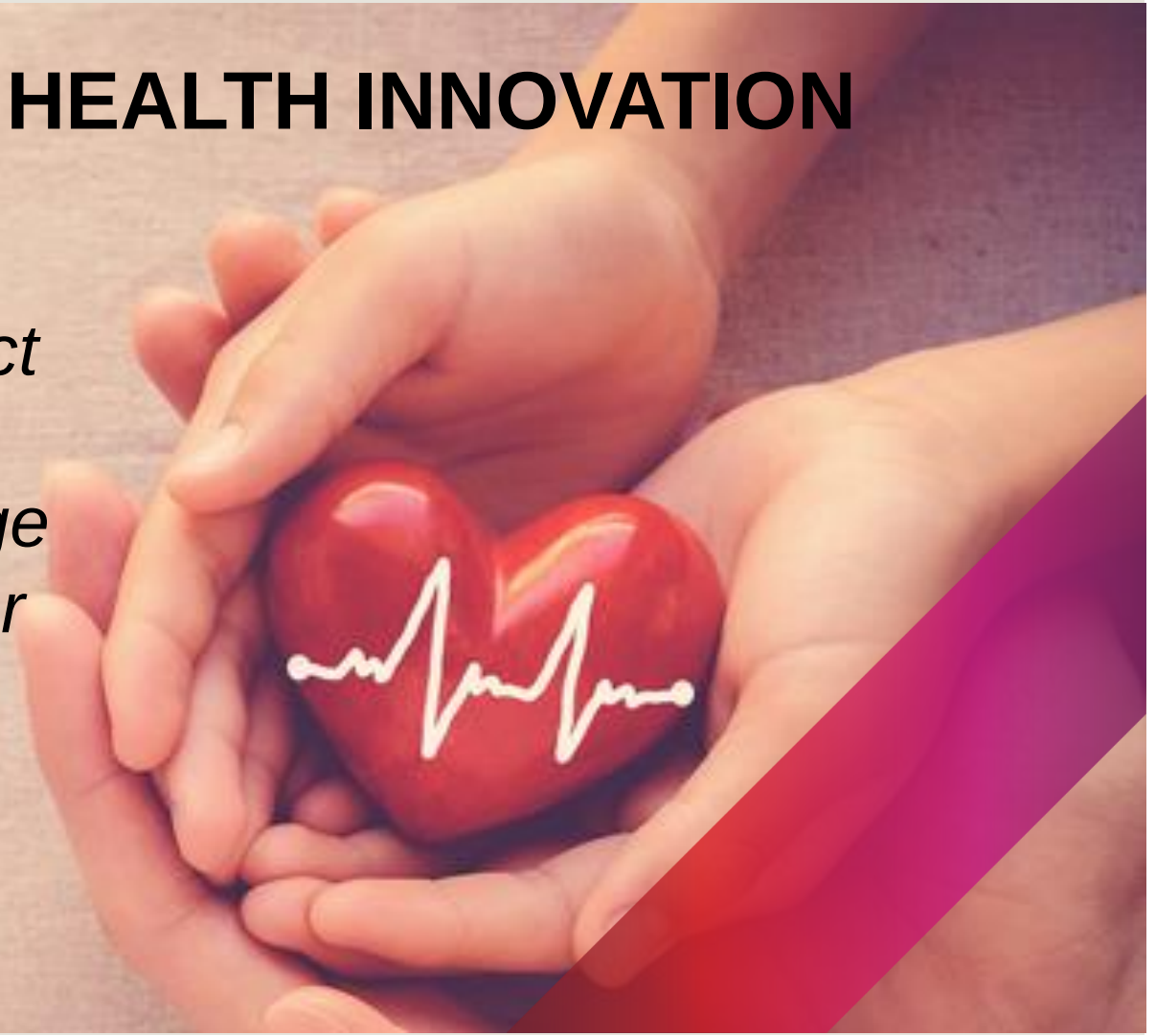
Our goal is to co-create high-impact health services and systems research that drives positive change in policy, practice and behaviour for the benefit of all.

aihi.mq.edu.au



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Professor
Jeffrey Braithwaite

Founding Director, AIHI

Director, Centre for Healthcare Resilience and Implementation Science

Professor
Johanna Westbrook

Director, Centre for Health Systems and Safety Research

Professor
Enrico Coiera

Director, Centre for Health Informatics

Professor
Henry Cutler

Director, Macquarie University Centre for the Health Economy

NHMRC Partnership Centre for Health System Sustainability

NHMRC Centre of Research Excellence in Implementation Science in Oncology

NHMRC Centre of Research Excellence in Digital Health

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Prologue: Are you optimistic or pessimistic about the future?

Are we on track?

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To meet the United Nations' agreed sustainable development goals by 2030?

Strongly agree		Neutral		Strongly disagree
5	4	3	2	1

Worryingly, we are not on track

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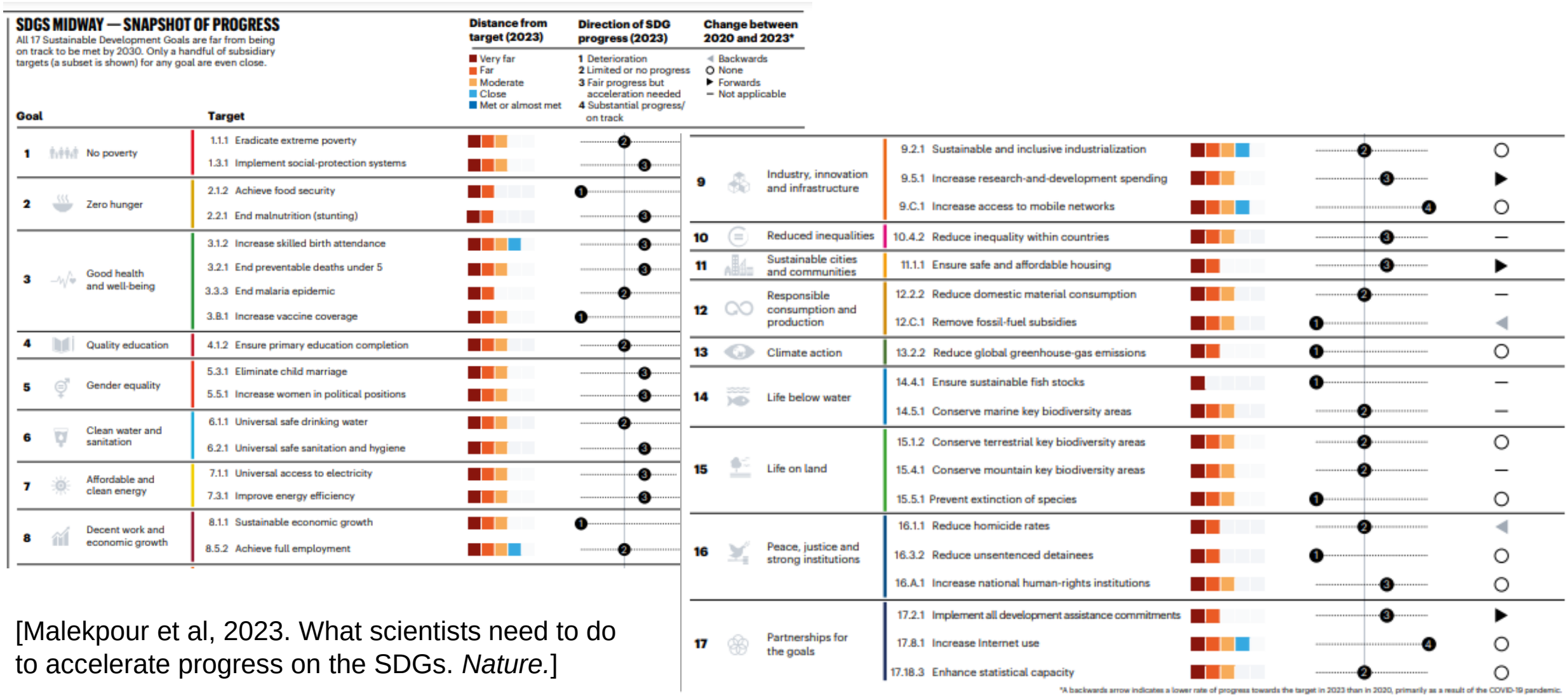

[Malekpour et al, 2023. What scientists need to do to accelerate progress on the SDGs. *Nature.*]

Only two are on track

CAN YOU GUESS WHICH THEY ARE?

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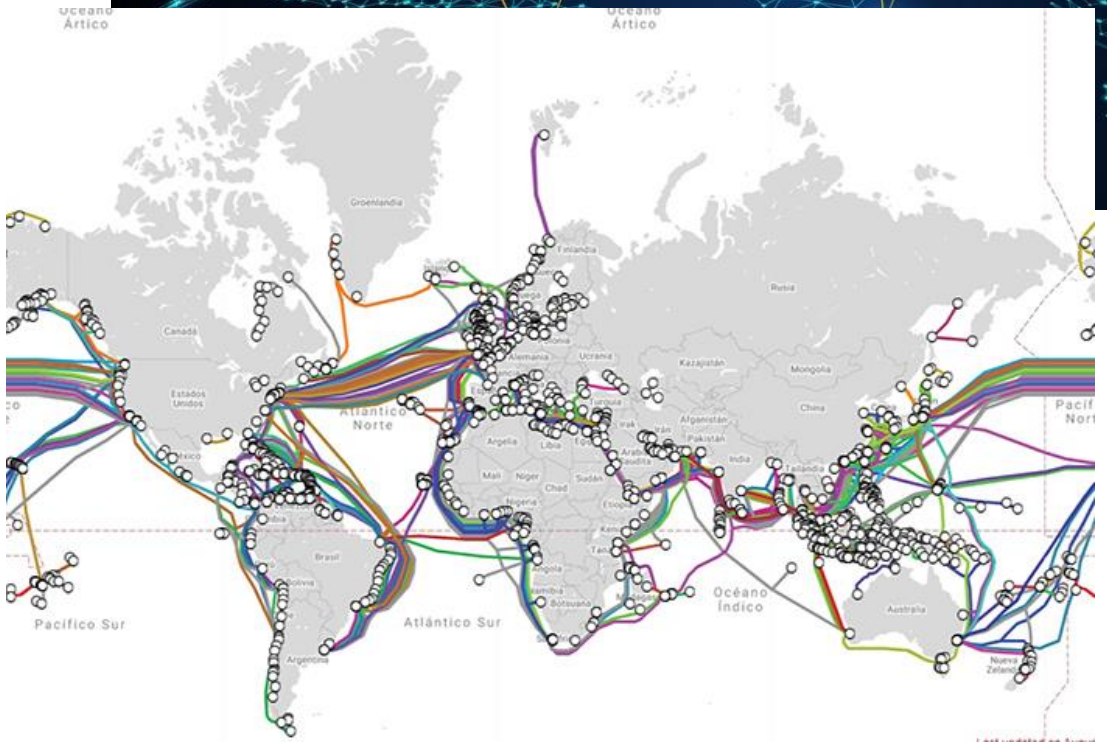

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Part 1: Dealing with the future:

Examples

Example 1:

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Climate change

Tackling climate change: the pivotal role of clinicians

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HEALTHCARE'S BI-DIRECTIONAL PROBLEM

Healthcare is a major emitter (4%-8.5% of national carbon burden)

Healthcare is on the front lines to deal with climate change (especially Emergency Departments and Primary Care settings)

Tackling climate change: the pivotal role of clinicians; BMJ

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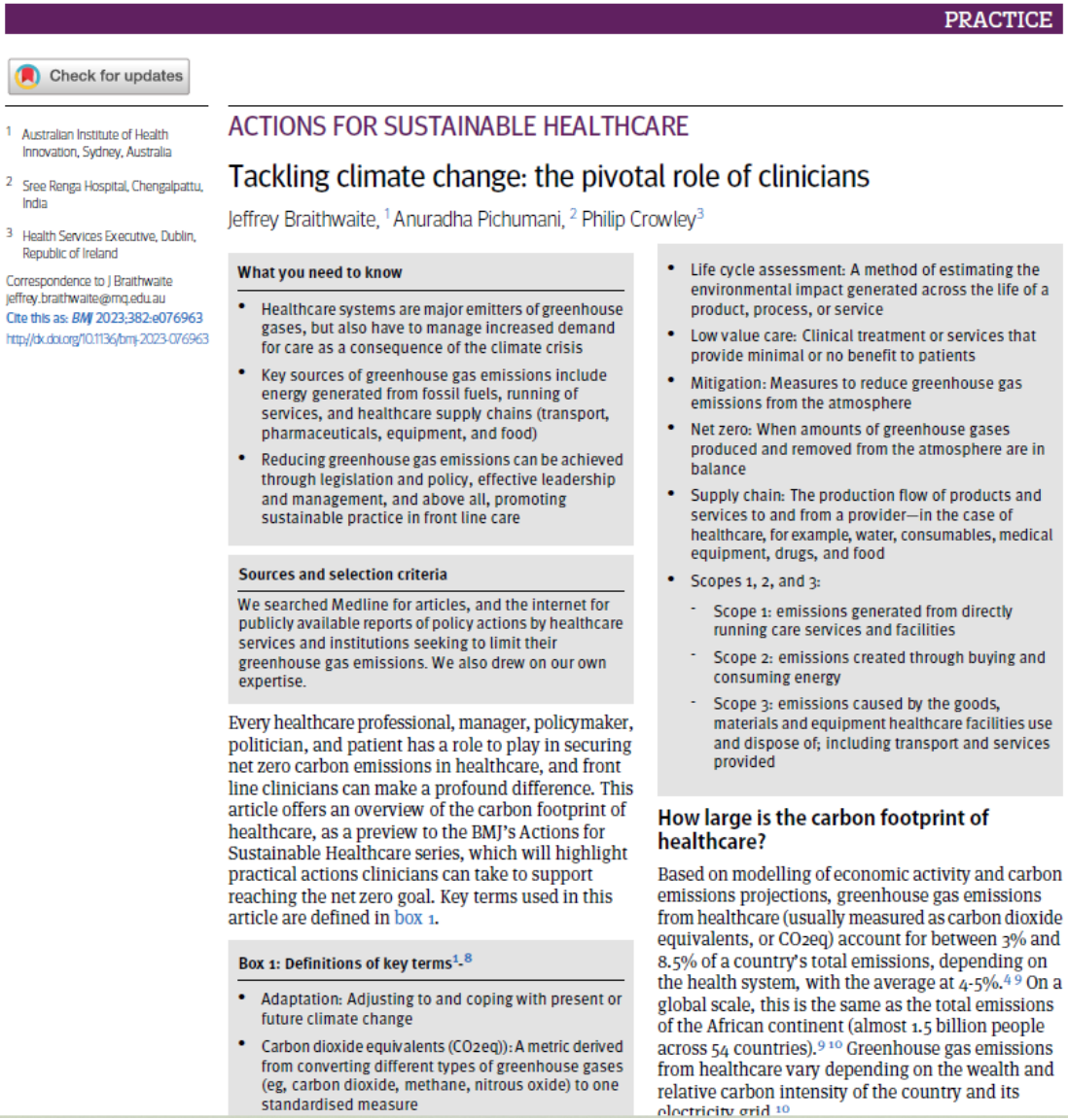

PRACTICE

Check for updates

1 Australian Institute of Health Innovation, Sydney, Australia

2 Sree Renga Hospital, Chengalpattu, India

3 Health Services Executive, Dublin, Republic of Ireland

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http://dx.doi.org/10.1136/bmj-2023-076963

ACTIONS FOR SUSTAINABLE HEALTHCARE

Tackling climate change: the pivotal role of clinicians

Jeffrey Braithwaite,[1] Anuradha Pichumani,[2] Philip Crowley[3]

What you need to know

- Healthcare systems are major emitters of greenhouse gases, but also have to manage increased demand for care as a consequence of the climate crisis
- Key sources of greenhouse gas emissions include energy generated from fossil fuels, running of services, and healthcare supply chains (transport, pharmaceuticals, equipment, and food)
- Reducing greenhouse gas emissions can be achieved through legislation and policy, effective leadership and management, and above all, promoting sustainable practice in front line care

Sources and selection criteria

We searched Medline for articles, and the internet for publicly available reports of policy actions by healthcare services and institutions seeking to limit their greenhouse gas emissions. We also drew on our own expertise.

Every healthcare professional, manager, policymaker, politician, and patient has a role to play in securing net zero carbon emissions in healthcare, and front line clinicians can make a profound difference. This article offers an overview of the carbon footprint of healthcare, as a preview to the BMJ's Actions for Sustainable Healthcare series, which will highlight practical actions clinicians can take to support reaching the net zero goal. Key terms used in this article are defined in box 1.

Box 1: Definitions of key terms[1-8]

- Adaptation: Adjusting to and coping with present or future climate change
- Carbon dioxide equivalents (CO_2eq): A metric derived from converting different types of greenhouse gases (eg, carbon dioxide, methane, nitrous oxide) to one standardised measure
- Life cycle assessment: A method of estimating the environmental impact generated across the life of a product, process, or service
- Low value care: Clinical treatment or services that provide minimal or no benefit to patients
- Mitigation: Measures to reduce greenhouse gas emissions from the atmosphere
- Net zero: When amounts of greenhouse gases produced and removed from the atmosphere are in balance
- Supply chain: The production flow of products and services to and from a provider—in the case of healthcare, for example, water, consumables, medical equipment, drugs, and food
- Scopes 1, 2, and 3:
  - Scope 1: emissions generated from directly running care services and facilities
  - Scope 2: emissions created through buying and consuming energy
  - Scope 3: emissions caused by the goods, materials and equipment healthcare facilities use and dispose of; including transport and services provided

How large is the carbon footprint of healthcare?

Based on modelling of economic activity and carbon emissions projections, greenhouse gas emissions from healthcare (usually measured as carbon dioxide equivalents, or CO_2eq) account for between 3% and 8.5% of a country's total emissions, depending on the health system, with the average at 4-5%.[4 9] On a global scale, this is the same as the total emissions of the African continent (almost 1.5 billion people across 54 countries).[9 10] Greenhouse gas emissions from healthcare vary depending on the wealth and relative carbon intensity of the country and its electricity grid.[10]

Key sources of emissions:

- energy generated from fossil fuels
- running of services
- healthcare supply chains (i.e. transport, pharmaceuticals, equipment and food)

Tackling climate change: the pivotal role of clinicians

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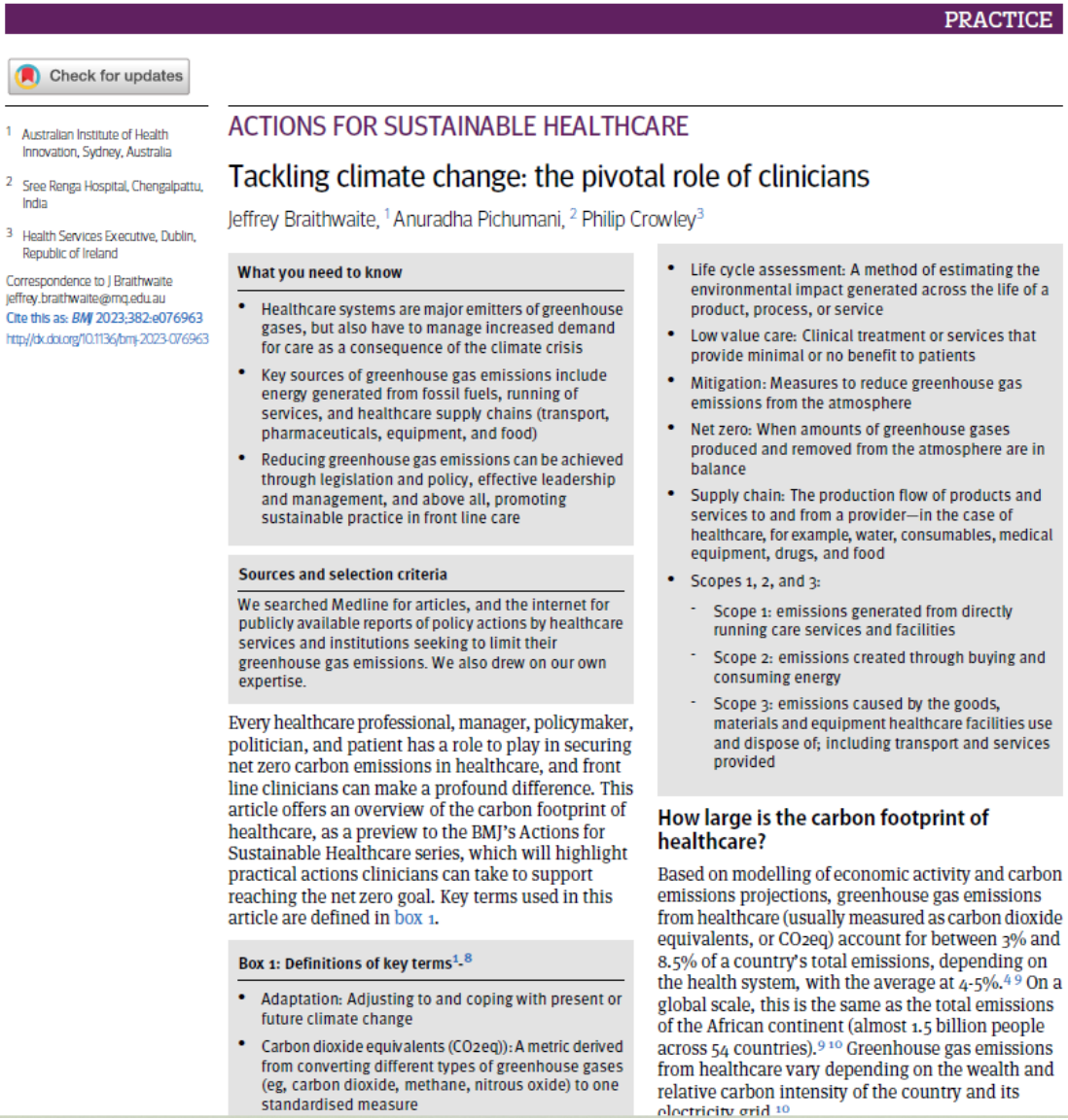

PRACTICE

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Best targeted reductions via:

- legislation and policy
- effective leadership and management
- promoting sustainable practice on the front lines of care
- address the supply chains

How large is the carbon footprint of healthcare?

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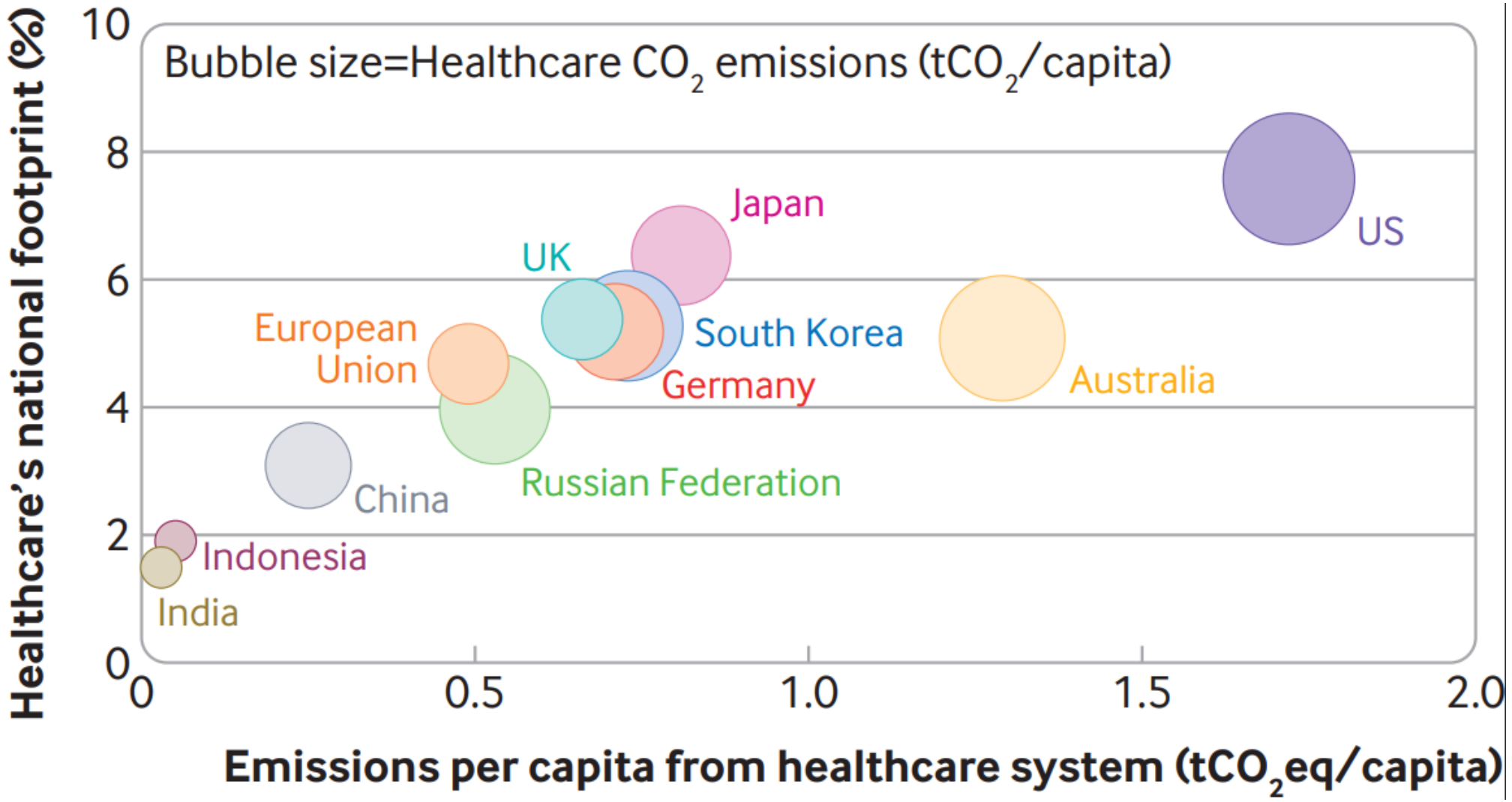
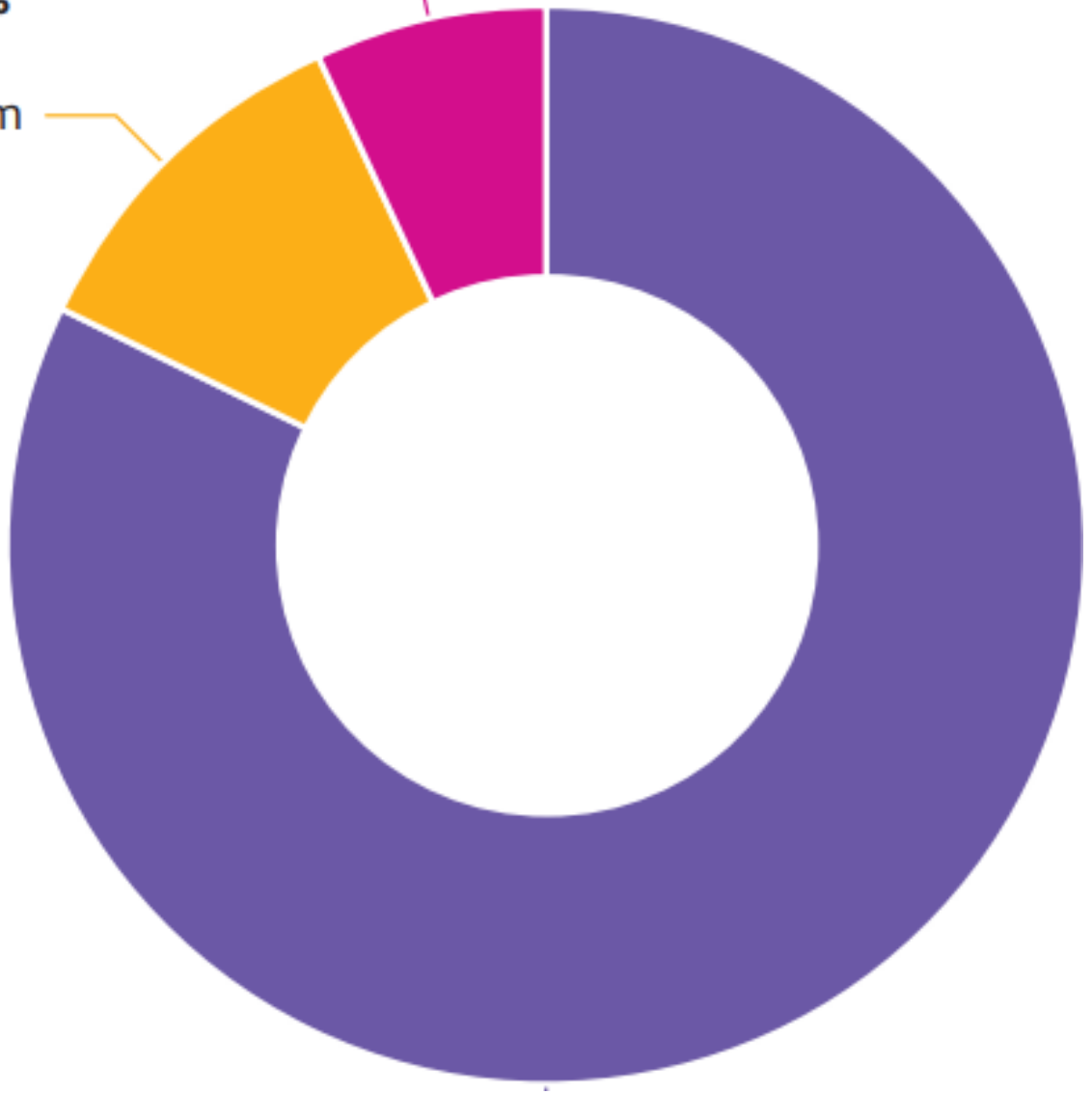


[Braithwaite et al., BMJ, 2023. Tackling climate change: the pivotal role of clinicians]

The Scopes framework



Scope 3 All other supply chain emissions **82%**
Including:

- Water and waste
- Energy
- Transport and construction
- Medical devices and medical supplies
- Pharmaceuticals and chemicals
- Other manufacturing
- Information and computer technology, equipment and services
- Plastics, rubber, textiles, and paper
- Finance, insurance, administration, and public health testing and research
- Food
- Others

[Braithwaite et al., BMJ, 2023. Tackling climate change: the pivotal role of clinicians]

From one systematic review to two

2022

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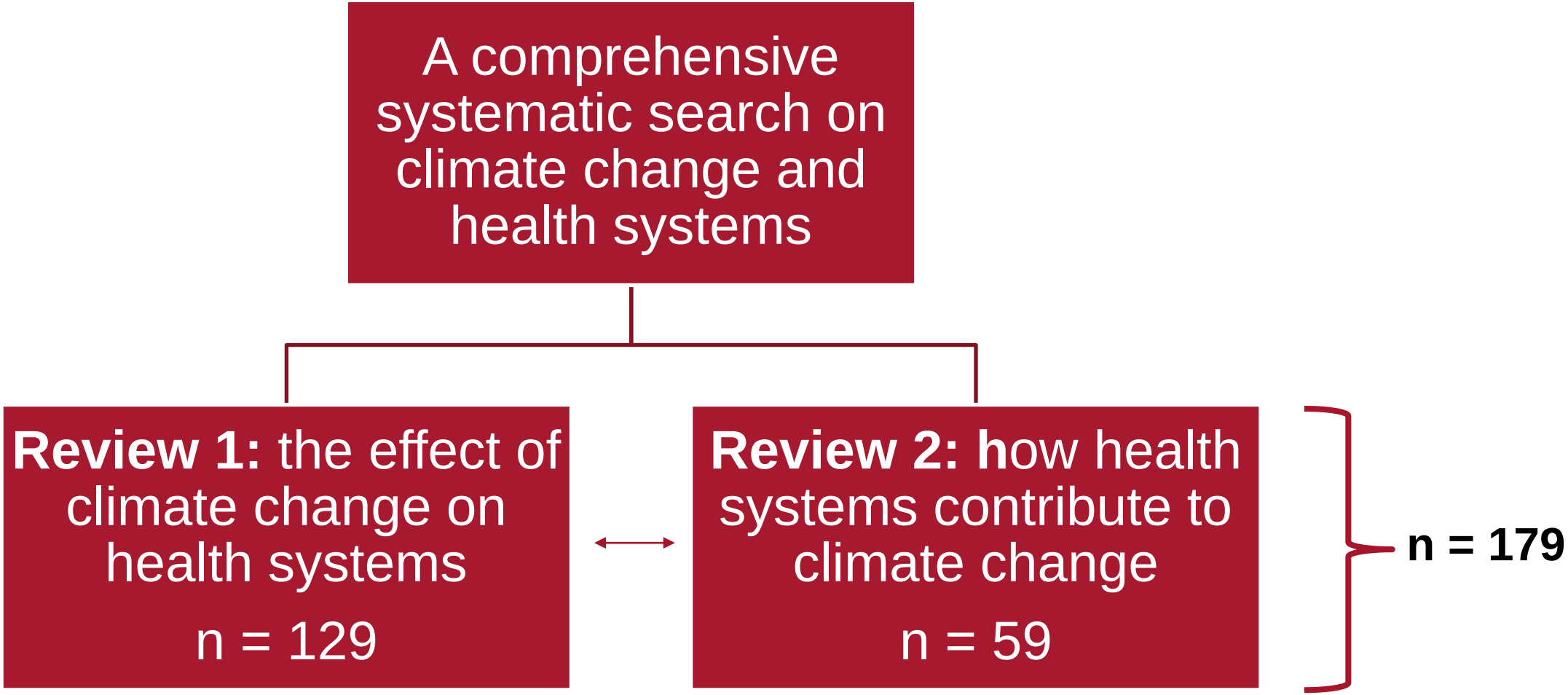

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Review 1

How will health systems cope with the effects of climate change? A systematic review of their capacities and preparedness

Topics

SEVEN TOPICS THAT EMERGED FROM THE LITERATURE

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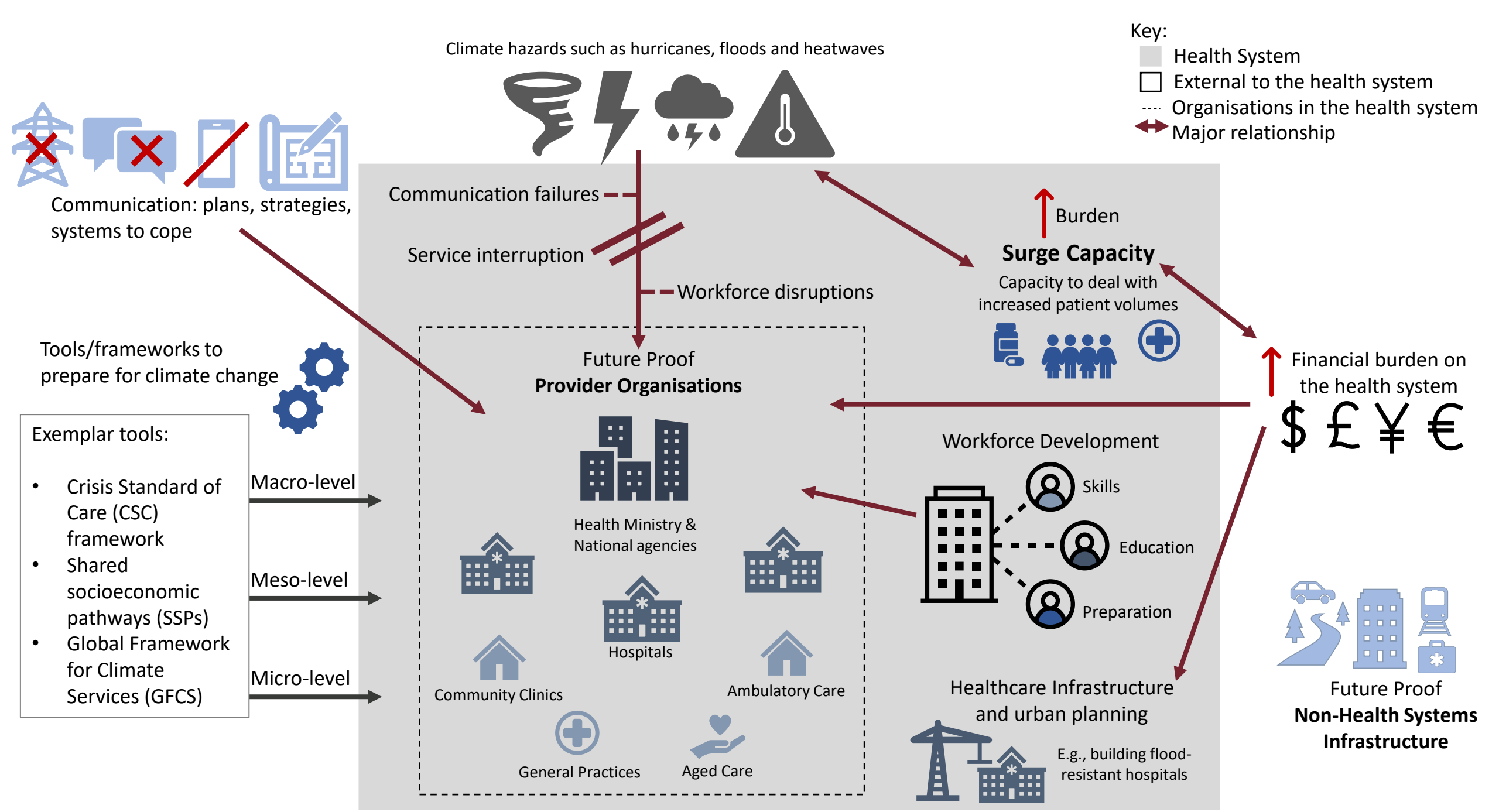
1. Service interruption as a result of climate hazards
2. Surge capacity and increased burden on the system
3. Tools and frameworks for preparing for, and dealing with, climate change
4. Infrastructure and urban planning in the context of healthcare
5. Communication: failures, plans, systems to cope
6. Workforce: skills, education, preparation
7. Financial cost of climate change-related events on the health system


Key:
Health System
External to the health system
Organisations in the health system
Major relationship
Climate hazards such as hurricanes, floods and heatwaves
Communication: plans, strategies, systems to cope
Communication failures
Service interruption
Workforce disruptions
Burden
Surge Capacity
Capacity to deal with increased patient volumes
Financial burden on the health system
$ £ ¥ €
Tools/frameworks to prepare for climate change
Exemplar tools:
• Crisis Standard of Care (CSC) framework
• Shared socioeconomic pathways (SSPs)
• Global Framework for Climate Services (GFCS)
Macro-level
Meso-level
Micro-level
Future Proof
Provider Organisations
Health Ministry & National agencies
Hospitals
Community Clinics
Ambulatory Care
General Practices
Aged Care
Workforce Development
Skills
Education
Preparation
Healthcare Infrastructure and urban planning
E.g., building flood-resistant hospitals
Future Proof
Non-Health Systems Infrastructure

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Review 2

Ways to reduce healthcare's impact on climate change: A systematic review

Themes

NINE THEMES CATEGORISED INTO TWO TYPES OF STRATEGIES

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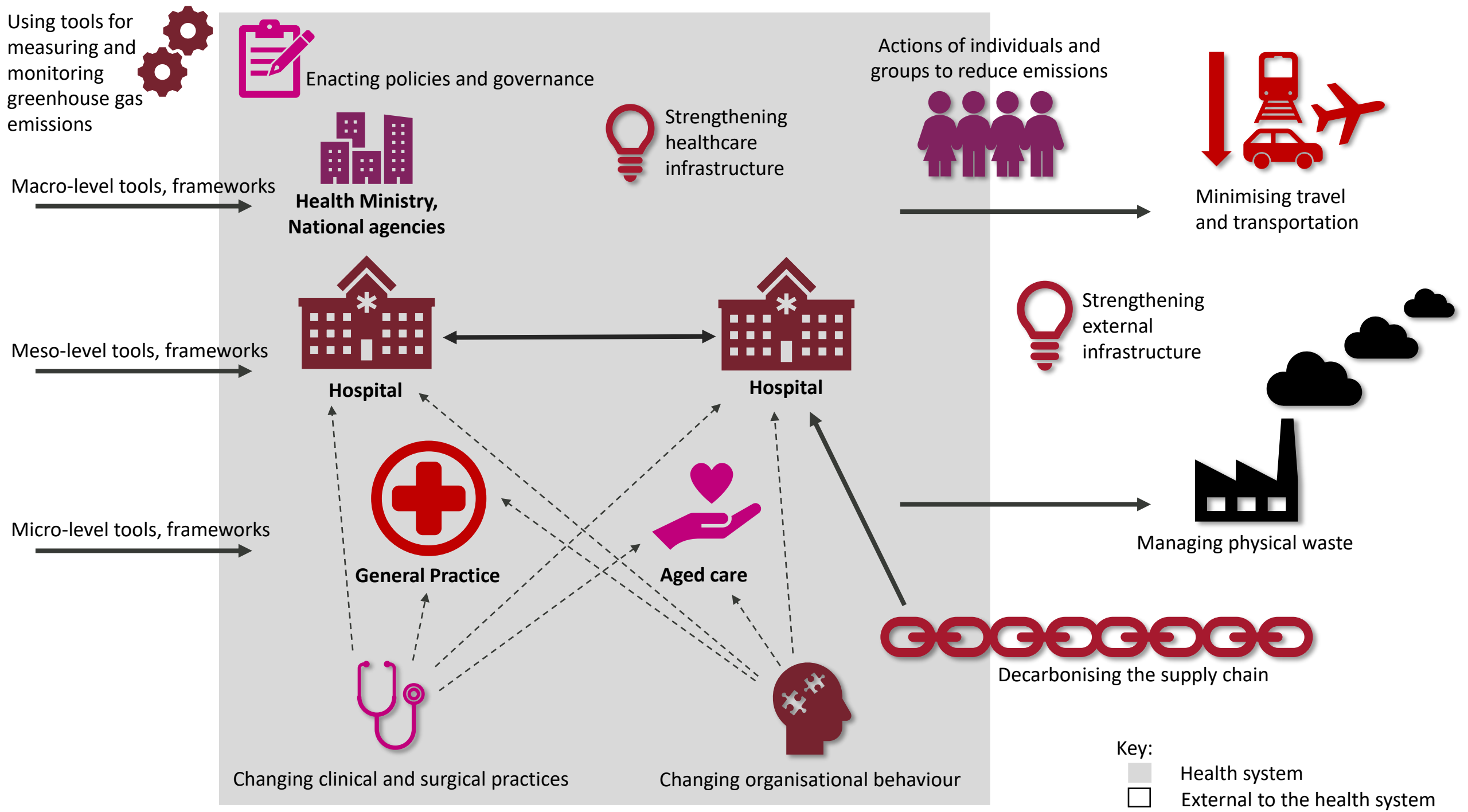
Overarching strategies

- 1. Enacting policies and governance
- 2. Using tools for measuring and monitoring GHG emissions
- 3. Changing organisational behaviour
- 4. Actions of individuals and groups

Decarbonisation strategies

- 5. Decarbonising the supply chain
- 6. Strengthening infrastructure
- 7. Changing clinical and surgical practices
- 8. Managing physical waste
- 9. Minimising travel and transportation


Using tools for measuring and monitoring greenhouse gas emissions
Enacting policies and governance
Actions of individuals and groups to reduce emissions
Strengthening healthcare infrastructure
Macro-level tools, frameworks
Health Ministry, National agencies
Minimising travel and transportation
Meso-level tools, frameworks
Hospital
Hospital
Strengthening external infrastructure
Micro-level tools, frameworks
General Practice
Aged care
Managing physical waste
Decarbonising the supply chain
Changing clinical and surgical practices
Changing organisational behaviour
Key:
Health system
External to the health system

Example 2:

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COVID-19

International Journal For Quality In Health Care, 2020, 00(00), 1–7
doi: 10.1093/intqhc/mzaa113
Advance Access Publication Date: 30 Septembers 2020
Research Article

Research Article

The 40 health systems, COVID-19 (40HS, C-19) study

JEFFREY BRAITHWAITE[1,2], YVONNE TRAN[1], LOUISE A ELLIS[1,2] and JOHANNA WESTBROOK[3]

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Received 24 June 2020; Editorial Decision 3 September 2020; Revised 30 August 2020; Accepted 8 September 2020

Abstract

Background: The health, social and economic consequences of the severe acute respiratory syndrome coronavirus (SARS-CoV-2, henceforth COVID-19) pandemic have loomed large as every national government made decisions about how to respond. The 40 Health Systems, COVID-19 (40HS, C-19) study aimed to investigate relationships between governments' capacity to respond (CTR), their response stringency, scope of COVID-19 testing and COVID-19 outcomes.

The 40HS, C-19 Study

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- 40 health systems
- 36 OECD countries
- Plus the Republic of China (Taiwan), Singapore, Malaysia and Iran

[Braithwaite et al. 2020. Int J Qual Health Care]

The 40HS, C-19 Study

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- Examined three parameters:
  - Capacity of the system and the government to respond
  - Early stringency, e.g., masks, lockdowns, shelter in place
  - Testing, broadly across society, or narrowly to specific groups

[Braithwaite et al. 2020. Int J Qual Health Care]

Which of these three is most important?

Results

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- Intrinsic national capacities to respond (CTR) and early stringency measures to deal with a pandemic are insufficient
- Extended stringency measures, important in the short-term, were not thought to be economically sustainable
- In this study, broad-based testing is key to managing COVID-19. **Why?**

National Health Systems' Cluster Performance on Capacity to Respond, Stringency of Response, and Approach to Testing

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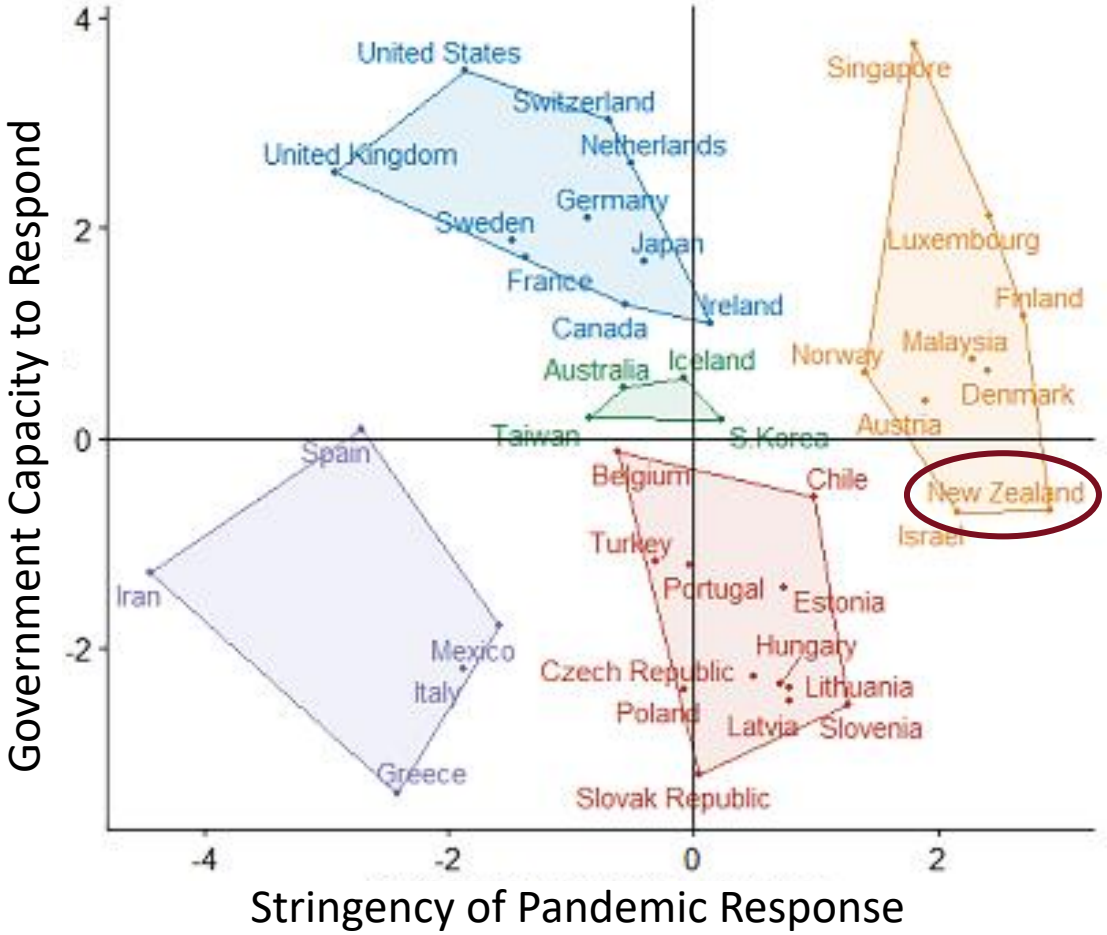

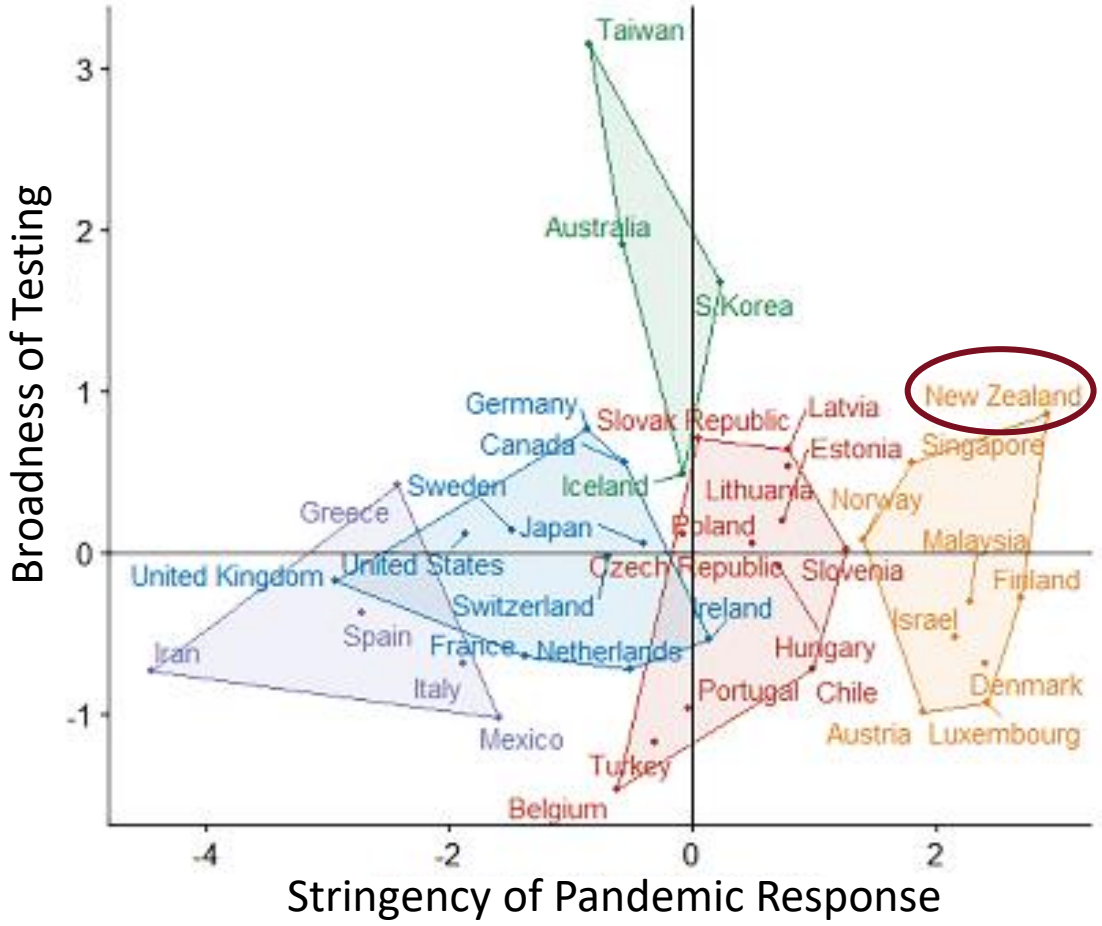

[Braithwaite et al. 2020 Int J Qual Health Care]

National Health Systems' Cluster Performance on Capacity to Respond, Stringency of Response, and Approach to Testing

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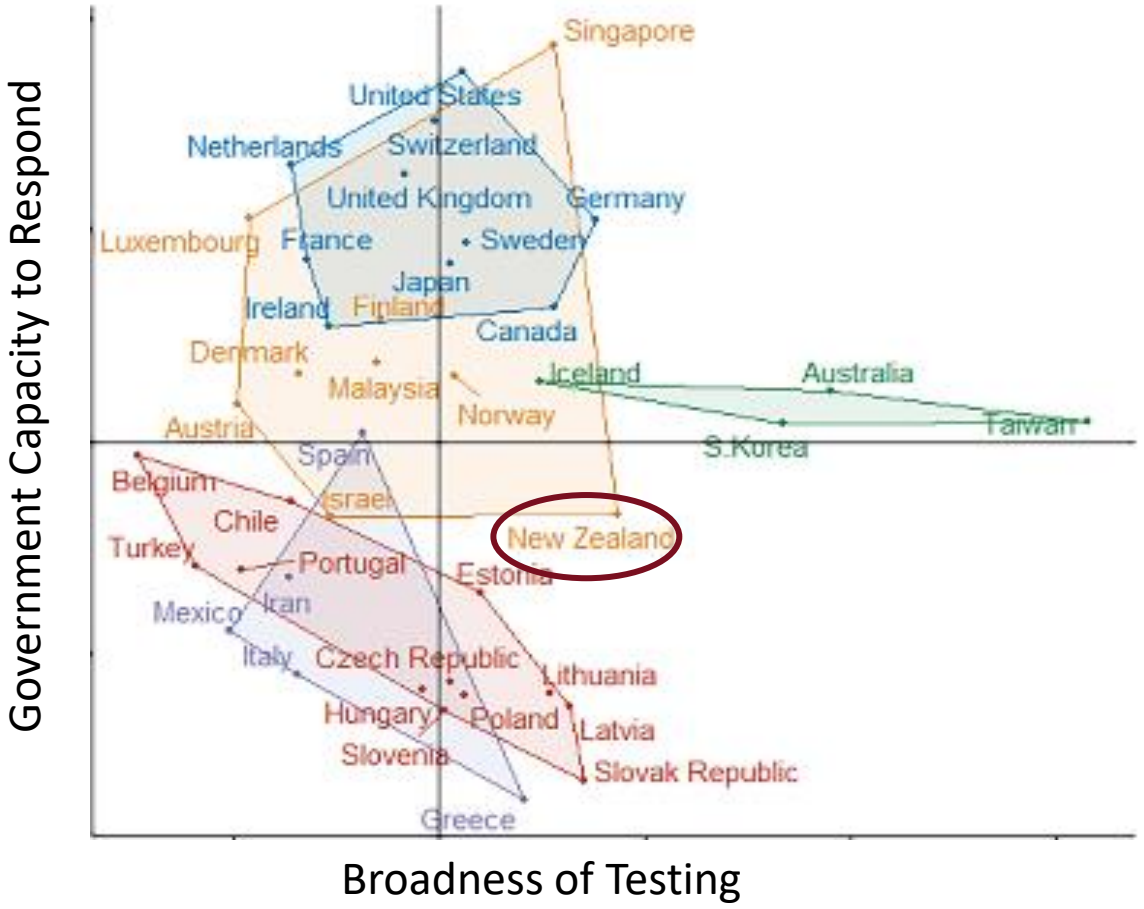

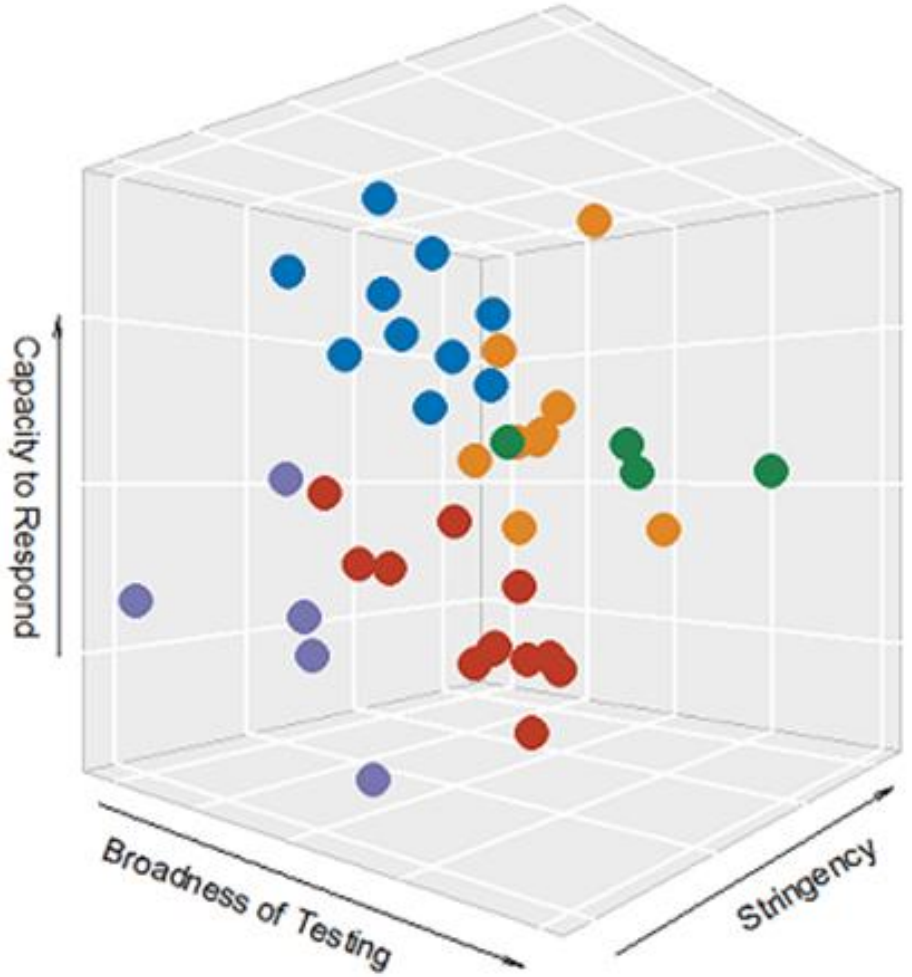

[Braithwaite et al. 2020 Int J Qual Health Care]

National Health Systems' Capacity to Respond, Adoption of Early Stringency Measures and Approach to COVID-19 Testing

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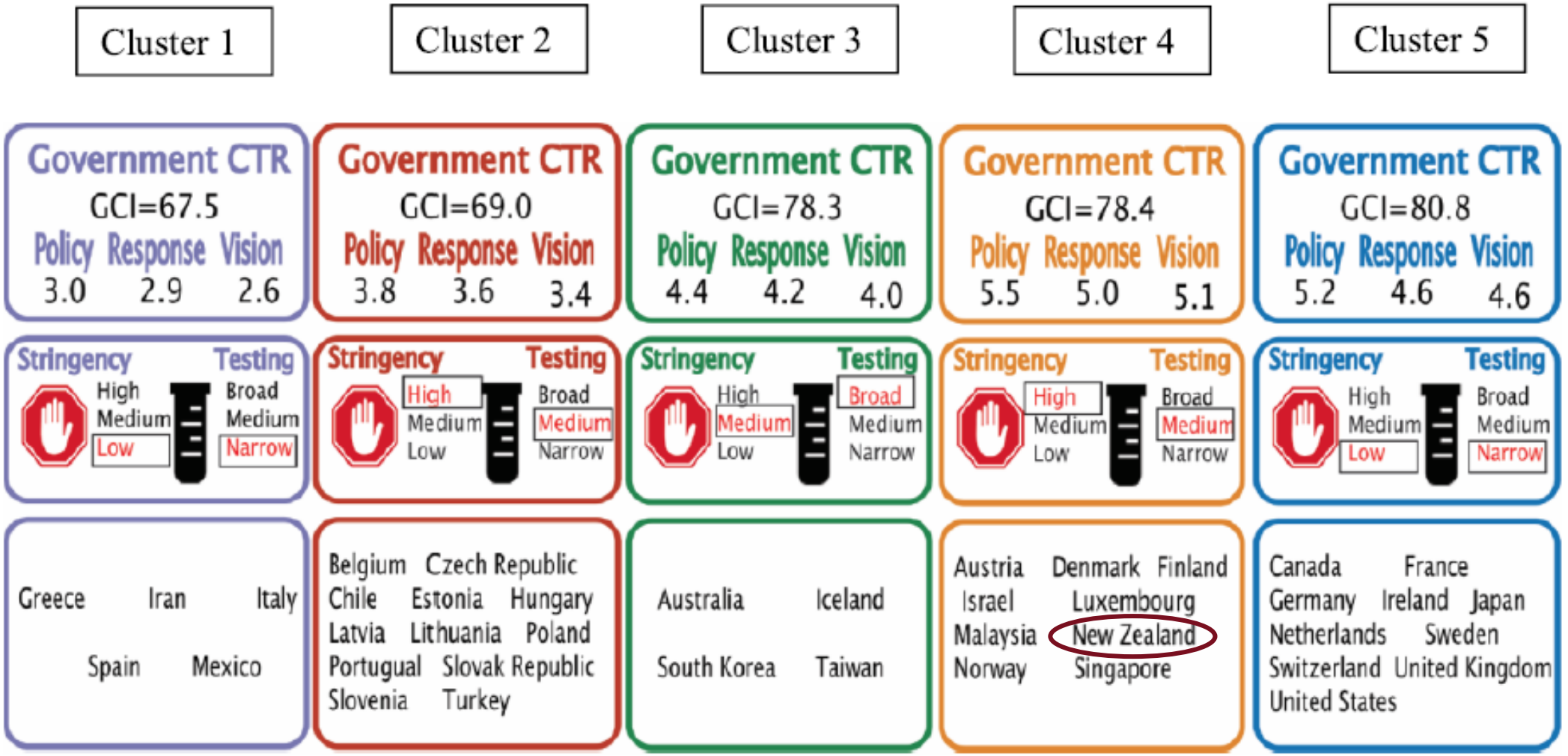

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Part 2: Against this background, how do we get to 2030?

A roadmap to the future

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The New Zealand Approach

[1] The Health Charter

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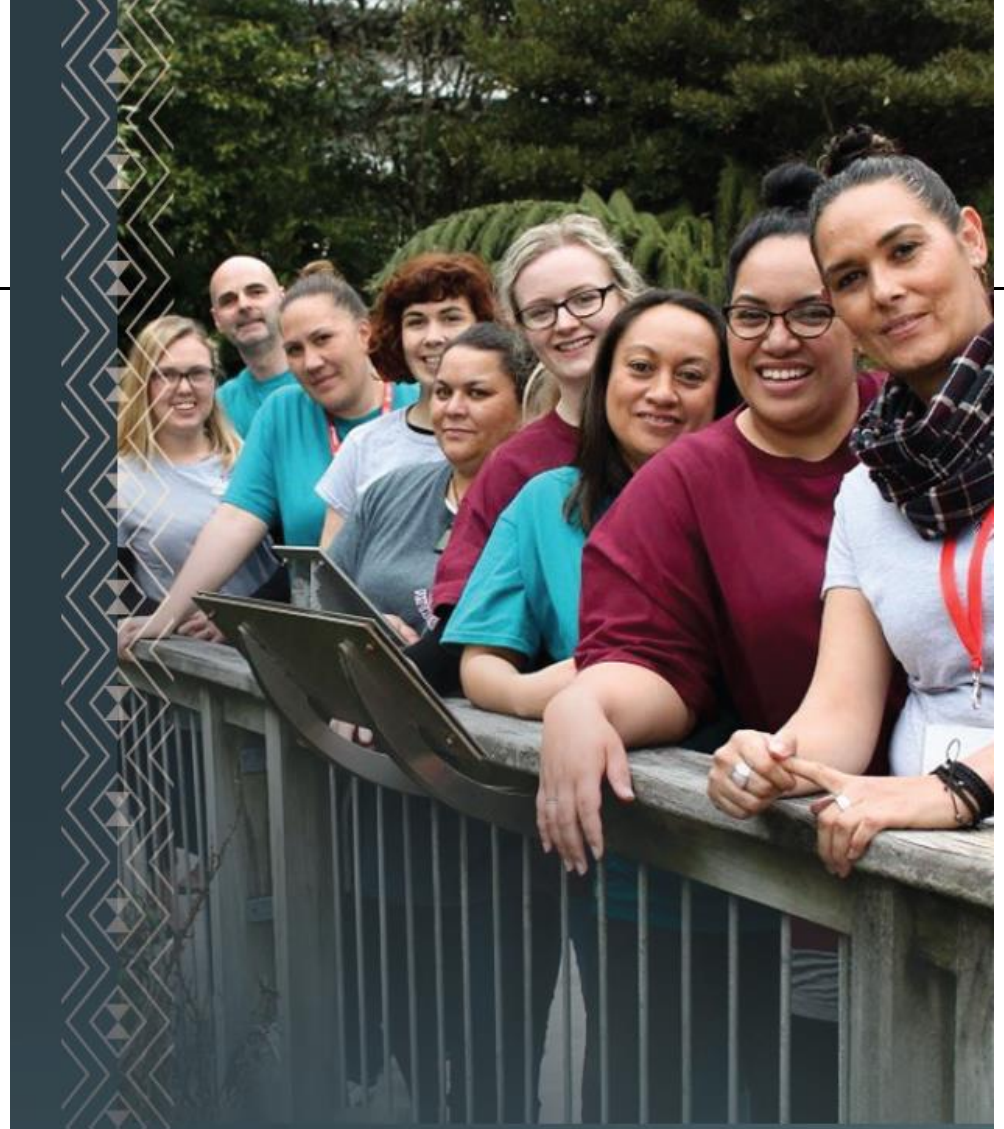

Te Mauri o Rongo

THE NEW ZEALAND HEALTH CHARTER

Te Mauri o Rongo – The New Zealand Health Charter

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Te Mauri O Rongo is a statement of values, principles, and behaviours that health entities and health workers are expected to demonstrate at a collective, organisational and individual level and ensures that health and care workers are supported and empowered by shared values in workplaces that value their contributions.

Te Mauri o Rongo – The New Zealand Health Charter

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Wairuatanga

Working with heart, the strong sense of purpose and commitment to service that health workers bring to their mahi.

Rangatiratanga

As organisations we support our people to lead. We will know our people; we will grow those around us and be accountable with them in contributing to Pae Ora for all.

VALUES AND PRINCIPLES THAT SHAPE OUR BEHAVIOURS

Whanaungatanga

We are a team, and together a team of teams. Regardless of our role, we work together for a common purpose. We look out for each other and keep each other safe.

"Whiria te tangāta" – we will weave our people together.

Te Korowai Āhuru

A cloak which seeks to provide safety and comfort to the workforce.

Te Mauri o Rongo – The New Zealand Health Charter

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Te Mauri O Rongo is how [New Zealand] will provide healthcare that is more responsive to the needs of, and accessible to, all people living in Aotearoa New Zealand.

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The New Zealand Approach

[2] The Health Strategy

New Zealand Health Strategy 2023

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New Zealand Health Strategy

Purpose

The New Zealand Health Strategy sets the medum - and long-term direction for health and identifies priority areads for change to improve health outcomes.

Our vison

Our long-term vision is to achieve pae ora | healthy futures for all New Zealanders.

Commitment to Te Tiriti o Waitangi | The Treaty of Waitangi

The health sector is committed to fulfilling the special relationship between Māori and the Crown under Te Tiriti o Waitangi | The Treaty of Waitangi.

The Crown's approach to meeting its obligations under Te Tiriti is outlined in section 6 of the Pae Ora (Healthy Futures) Act 2022. The legislation contains specific provisions intended to give effect to the Crown's obligations. In particular, the health sectors principles in section 7 of the Act guide the Minister of Health, Manatū Hauora | Ministry of Health and health entities in how they carry out their functions. The health sector principles incorporate key outcomes and behaviours derived from the principles of Te Tiriti, as articulated by the courts and the Waitangi Tribunal

Relationship to other health strategies

The New Zealand Health Strategy takes a whole-population focus and considers systemic issues, opportunities and priorities. It does this in partnership with Pae Tū | the Hauora Māori Strategy, which provides a framework to guide health entities in upholding Te Tiriti o Waitangi and improving Māori health outcomes. Together, the New Zealand Health Strategy and Pae Tū set the overarching long-term direction for health.

The four population strategies (for Pacific health, health of disabled people, women's health and rural health) set a more focused direction for specific populations.

The New Zealand Health Strategy - key points

The strategy is **focused on achieving pae ora | healthy futures for all New Zealanders.**

The strategy is **built on our commitment to Te Tiriti o Waitangi.**

The strategy has **two overarching long-term goals:**

- to **achieve health equity** for our diverse communities and especially for Māori, Pacific, disabled and other groups who have poorer outcomes
- to **improve health outcomes** for all New Zealanders.

The strategy has **six strategic priorities** that set a clear direction for the for the type of change needed in the next 10 years to move towards achieving these goals and ensure that our health system is fairer, stronger, more sustainable and responsive.

The strategy sets **ten-year ambitions** for the changes that are needed in each priority area, to direct efforts on the actions that will have the greatest impact on our goals.

These ambitions require collective action and aim to build alliances across the health system, the wider public sector, the private sector industry and other partners.

Recognising and responding to the voices of our people and communities throughout the health system, so people have greater control over the design of services and decisions made about their care.

Ten-year ambitions

- People, whānau and communities will have greater control and influence over their health and the services they need.
- People have the best possible experience of health services and the health system.

Supporting the health workforce to develop the diverse, skilled and confident workers for the future.

Ten-year ambitions

- The workforce will reflect our diverse communities and have the skills and capabilities required to meet their needs.
- The workforce will feel valued, recognised and respected and will be supported and motivated to deliver high-quality care.
- Flexible learning and working environments will give more room for growth and development.

Developing services that are focused on preventing illness and delivering care closer to home, and support access for most uder-served communities

Ten-year ambitions

- Health services will be flexible to people's range of needs and their cultural expectations.
- People are able to access the care they need, when they need it.
- The health system will make a significant shift in investment towards services that reduce, delay and prevent ill health and prioritise the early years of life.
- The health system will value physical and mental health equality.

Creating a culture of continuous learning and improvement that supports quality, innovation, research and evaluation.

Ten-year ambitions

- The health system will develop standards for high-quality care that support all services to improve.
- New initiatives will healp all parts of the system to harness innovation and new technologies and put evidence and research into everyday practice.
- New national functions will drive continuous improvement and support the development of new technologies.

Ensuring preparedness for future shocks and the best use of resources to manage the demand for health services and affordability of the system over long term.

Ten-year ambitions

- The health system will be better prepared to manage future adverse events.
- The health system will be more productive and efficient, to make the best use of public money.

Working with the other sectors and across government to partner on actions that address the drivers of health and wellbeing and support healthy communities and environments.

Ten-year ambitions

- The health system will lead and influence across government to improve health and wellbeing outcomes.
- Health entities will partner with other sectors to support shared approaches to improve health and wellbeing.

Our approch to setting priorities

The strategy balances the different driving forces of change

Achieving and sustaining change to deliver our long-term goals requires coordinated action in different areas.

The strategy seeks to guide a cultural shift to align the motivations and values of a diverse workforce, to rebalance decision making and influence more evenly, and to focus on how relationships and connections inform how people behave.

Our approach to change recognises the driving forces that influence how the system works as a whole and balances a focus on:

- systems, policies and practices that set rules, funding and expectations
- behaviours, relationships and mindsets that inform how people think and act.

The strategy is based on the evidence and what we have heard from people, whānau and communities

The strategy has been developed based on an understanding of current health outcomes and trends, including inequity between groups, and opportunities for change.

The choice of priorities and ambitions has been informed by the voices of people, whānau and communities and their experiences and aspirations for health and wellbeing.

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My Approach

A series on international health reform

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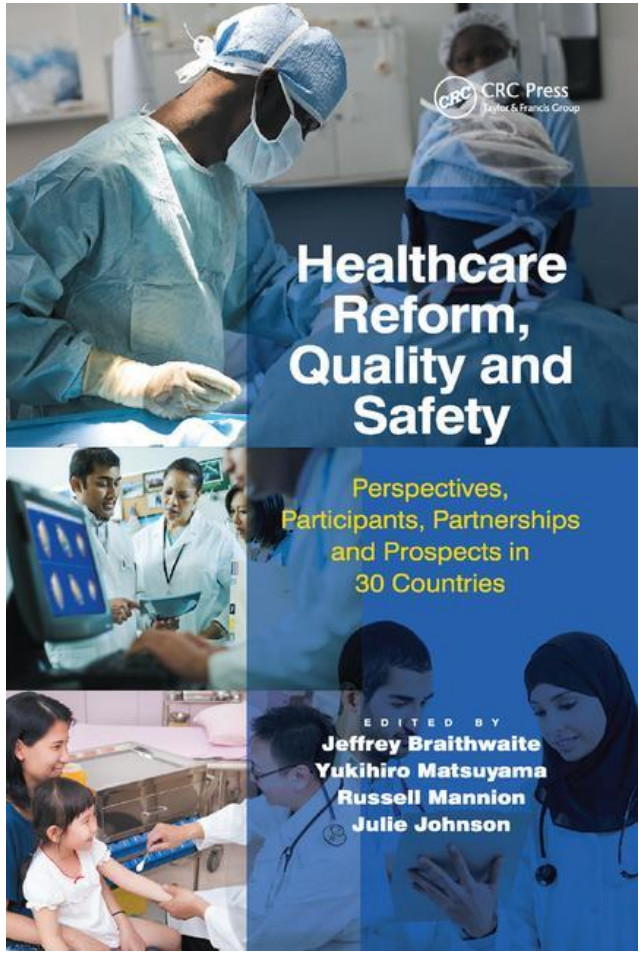

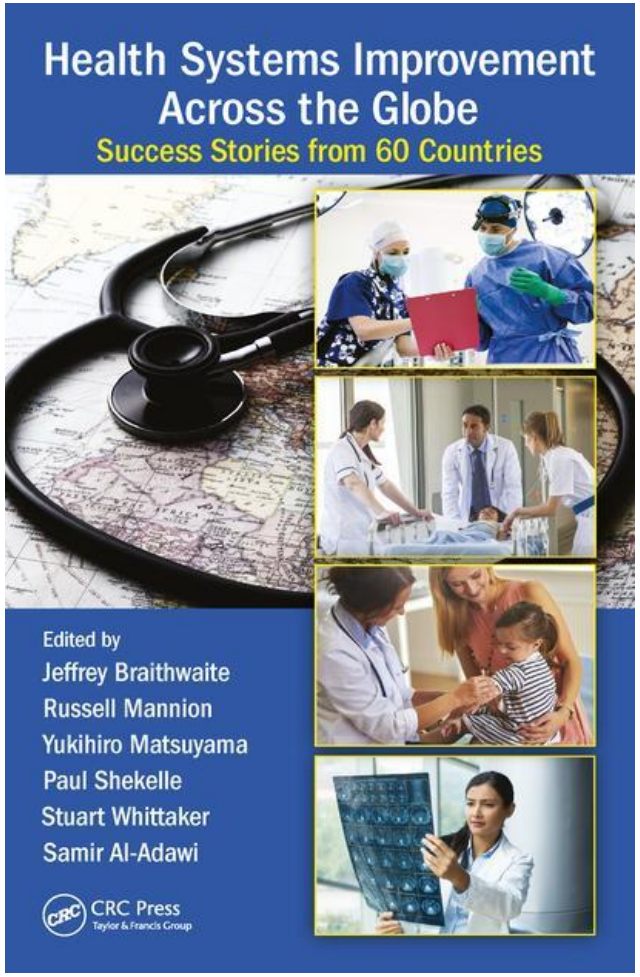

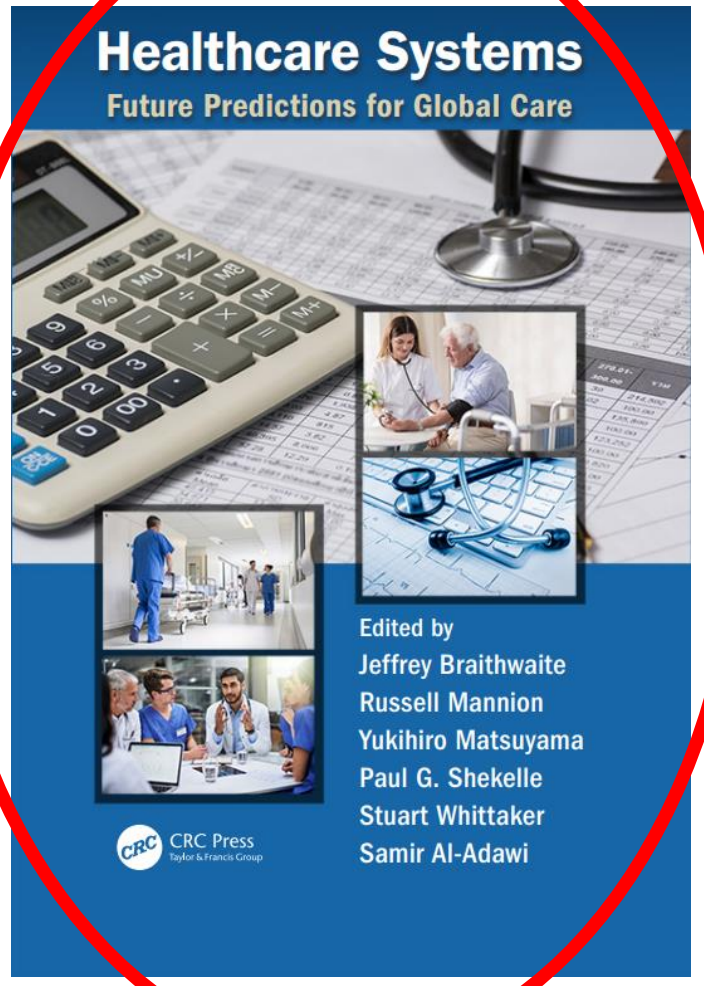

Healthcare Systems: Future Predictions for Global Care

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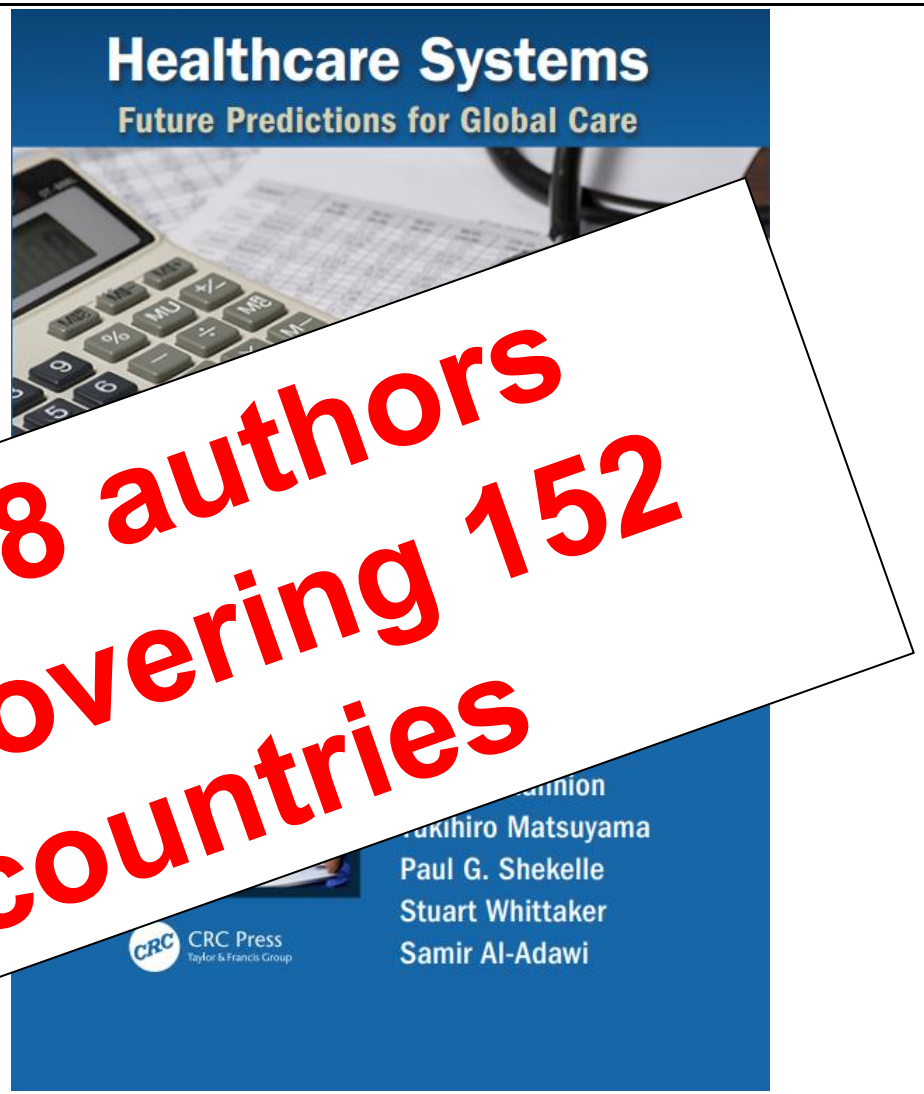

148 authors covering 152 countries

International Journal for Quality in Health Care, 2018, 30(10), 823–831
doi: 10.1093/intqhc/mzy242
Advance Access Publication Date: 20 December 2018
Perspectives on Quality

ISQua

OXFORD

Perspectives on Quality

The future of health systems to 2030: a roadmap for global progress and sustainability

JEFFREY BRAITHWAITE[1,2,3,4], RUSSELL MANNION[1,2], YUKIHIRO MATSUYAMA[1,3,5], PAUL G. SHEKELLE[6], STUART WHITTAKER[7], SAMIR AL-ADAWI[1,8], KRISTIANA LUDLOW[1], WENDY JAMES[1], HSUEN P. TING[1], JESSICA HERKES[1], ELISE MCPHERSON[1], KATE CHURRUCA[1], GINA LAMPRELL[1], LOUISE A. ELLIS[1], CLAIRE BOYLING[1], MEAGAN WARWICK[1], CHIARA POMARE[1], WENDY NICKLIN[4], and CLIFFORD F. HUGHES[1,4]

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Editorial Decision 16 October 2018; Accepted 6 December 2018

Abstract

Most research on health systems examines contemporary problems within one, or at most a few, countries. Breaking with this tradition, we present a series of case studies in a book written by key policy-

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Lessons?

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What lessons can be taken from this global outlook on the future?

The result:

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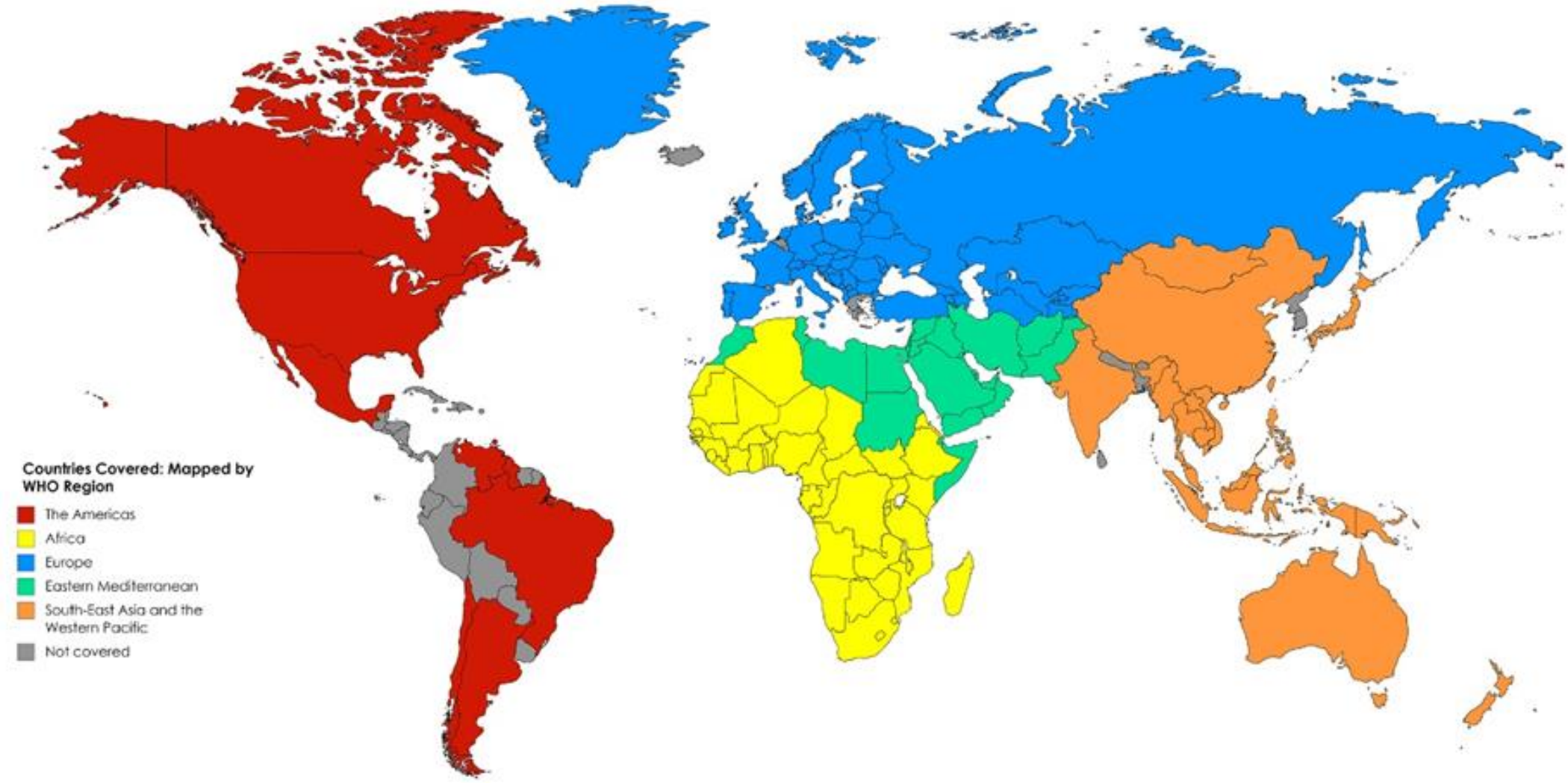

Five main trends

The trends shaping health s… the future:

- Sustainable … systems
- The … revolution
- …ging technologies
- Global demographic dynamics
- New models of care

These are happening now, in any case

[Braithwaite et al 2018]

Nine main initiatives: These are being widely promoted or adopted

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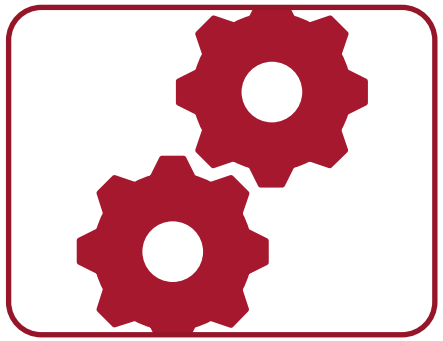
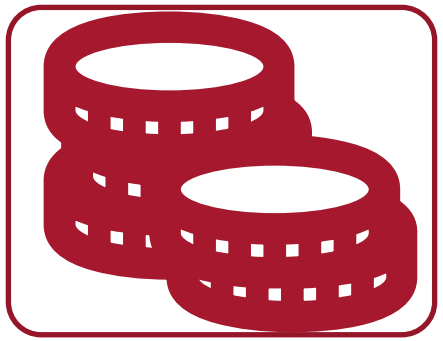


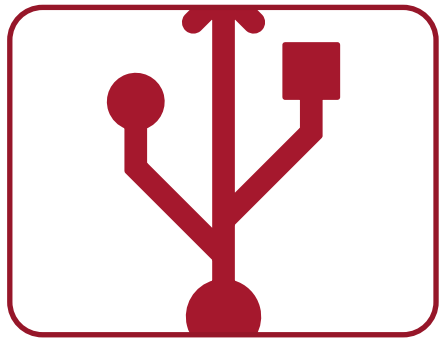
1. Integration of healthcare services



2. Financing, economics and insurance

3. Patient-based care and empowering the patient

4. Universal healthcare



5. Technology and information technology

Nine main initiatives

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6.

Ageing populations

7.

Preventative care

8.

Accreditation, standards and policy

9.

Human development, education and training

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How do we get to this version of 2030?

The system as we know it	THE ROAD TO 2030	The ideal healthcare system of the future
Fragmented and siloed	1 INTEGRATED CARE	Cohesive, joined up
Volume-based care	2 VALUE-FOR-MONEY SERVICES	Value-based care
Provider-oriented	3 PATIENT-BASED CARE	Person-centred
Barriers to access and affordability	4 UNIVERSAL COVERAGE	Wide access without financial hardship
Static, legacy-based systems; not data driven	5 INFORMATION TECHNOLOGY	Machine learning and AI enabled: Data-driven clinical decision making
Unhealthiness amongst the population: Poor health literacy	6 HEALTHY, HEALTH-LITERATE POPULATIONS	Well-being, healthy ageing and health aware
Focus on acute care	7 PREVENTATIVE CARE	Shift to primary-orientated, health promoting, preventative care
Entrenched levels of poor quality, unsafe care	8 HIGH-QUALITY, SAFE, STANDARD-BASED CARE	Less harmful, more effective services
Uneven workforce, training, knowledge and development	9 WORKFORCE DEVELOPMENT	A fit-for-purpose, highly trained and sustainable workforce

There's many ideas ...

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Part 3: My take on getting to the future

Eight suggestions

1. The inside and outside world—everyone is in their own box

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So get out of your box, embrace the complexity, and lead your bit of the needed transformation

2. Have a plan based on implementation science

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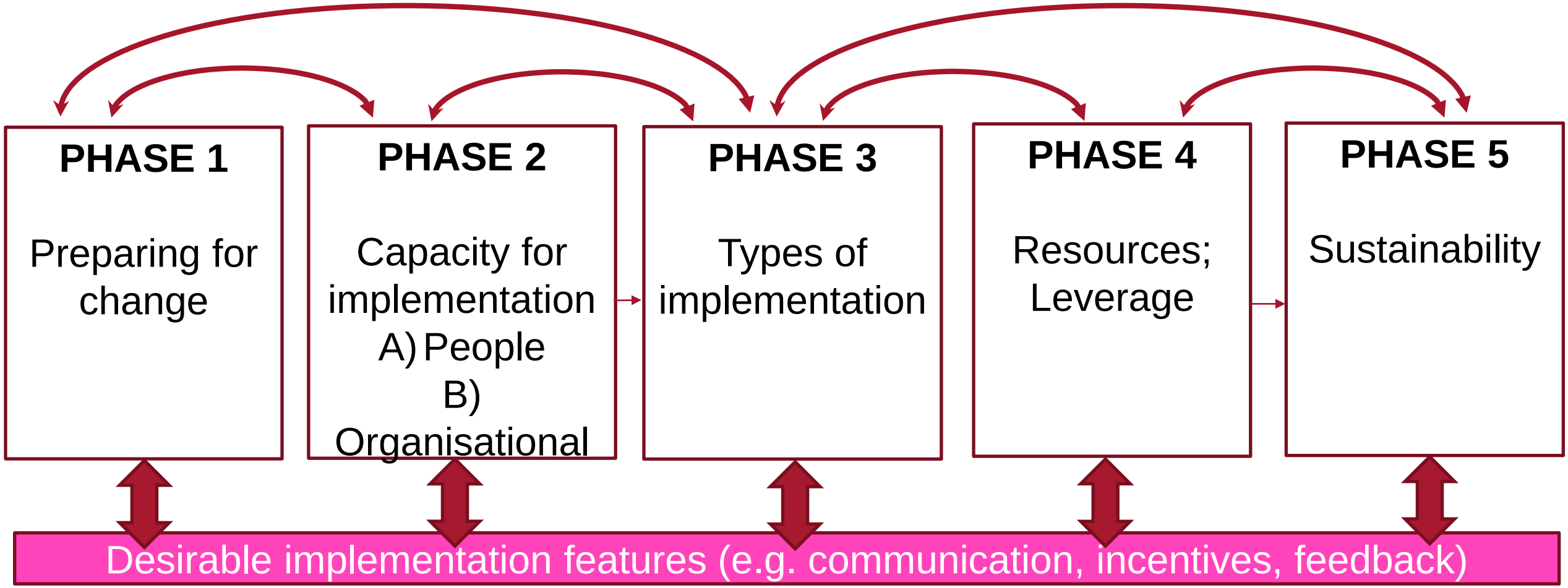

[Braithwaite J, Marks D, and Taylor N. (2014) Harnessing implementation science to improve care quality and patient safety: a systematic review of targeted literature. *International Journal for Quality in Health Care*, 26:3]

3. Know that you have two jobs: do your job and improve things

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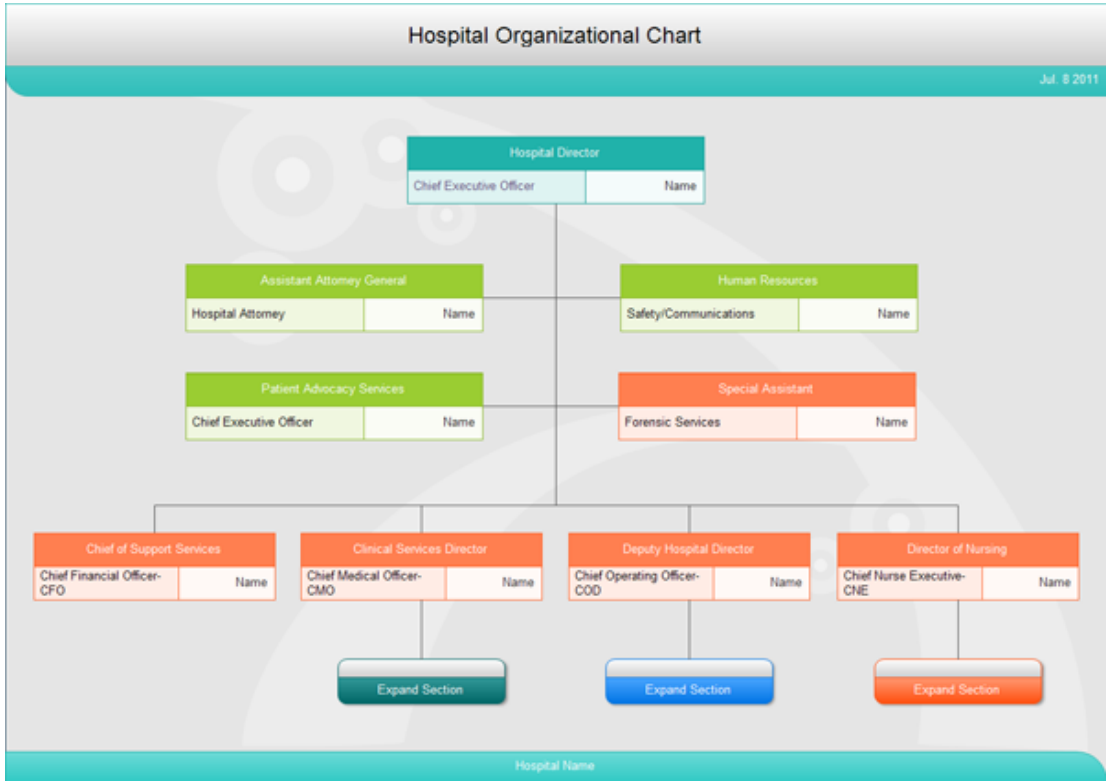

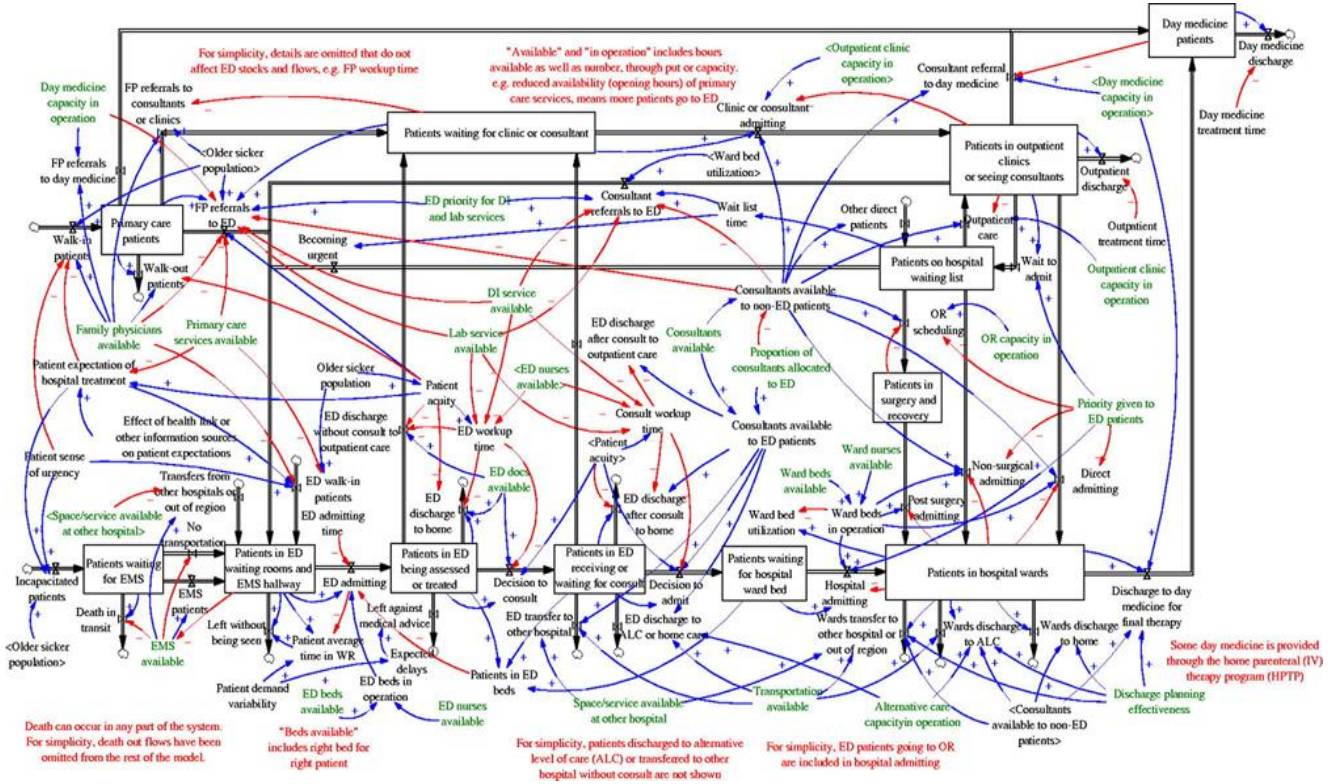

“Do your job”

“Improve things”

4. Understand deeply that our problems and solutions are not linear

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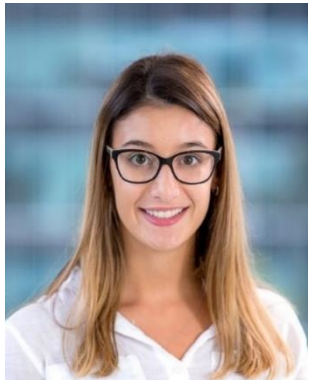
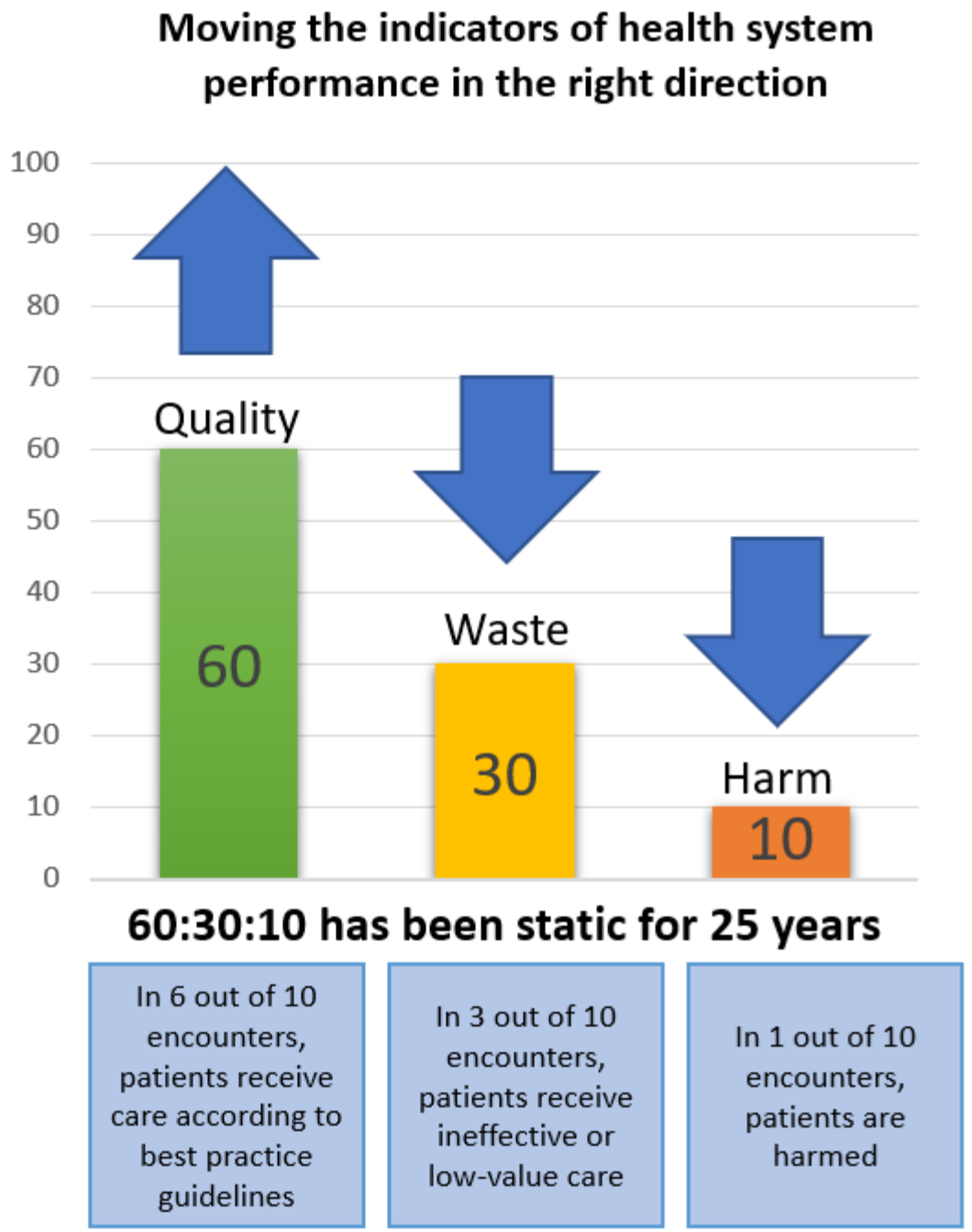


5. Focus on the important

Just three numbers – 60:30:10



[Braithwaite, J., Glasziou, P. & Westbrook, J. The three numbers you need to know about healthcare: the 60-30-10 Challenge. *BMC Med* 18, 102 (2020). https://doi.org/10.1186/s12916-020-01563-4]

6. It’s a journey, not a destination

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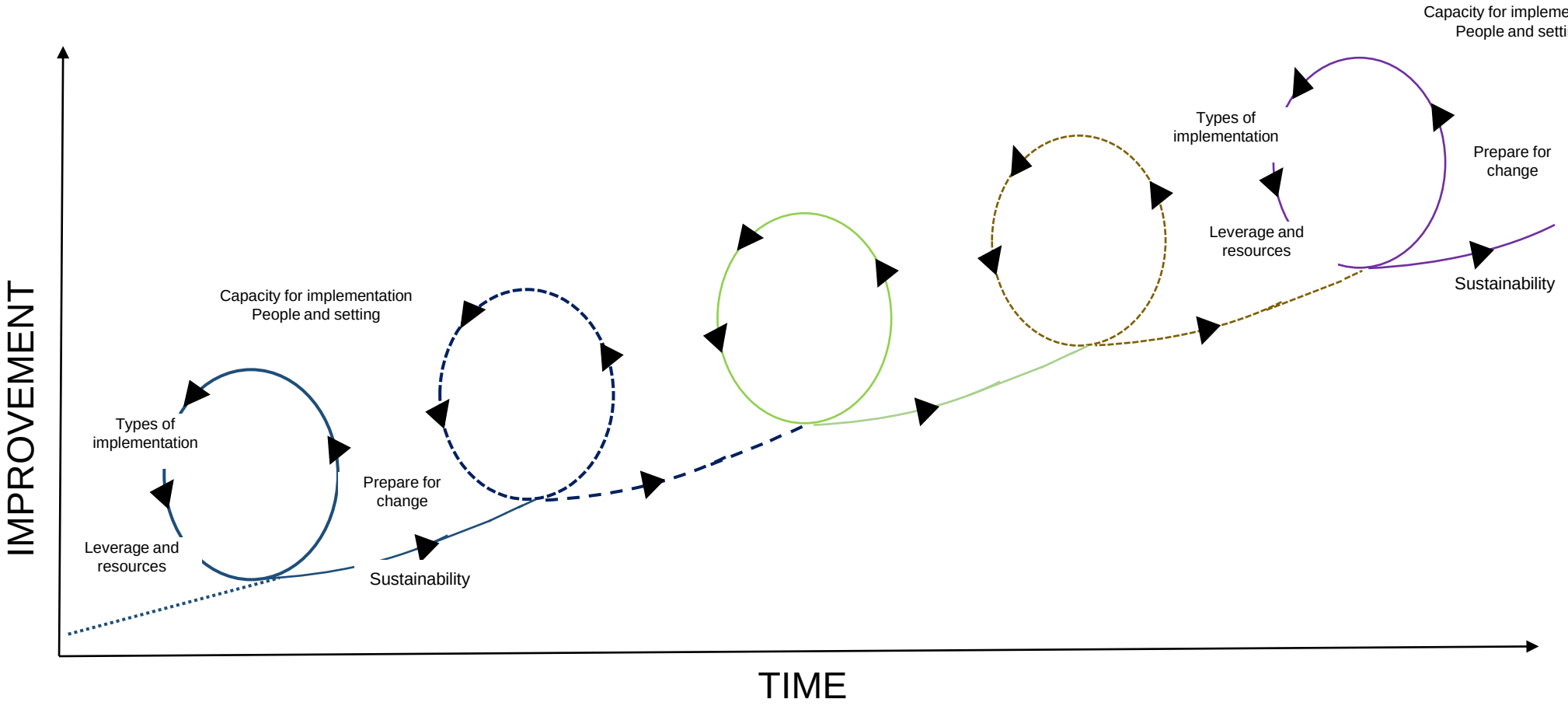

[Adapted from Braithwaite et al. 2014. Harnessing implementation science to improve care quality and patient safety: a systematic review of targeted literature. *Int J Qual Health Car*; Braithwaite et al. 2007. An action research protocol to strengthen system-wide inter-professional learning and practice. *BMC Health Serv Res*]

7. Implementation at scale

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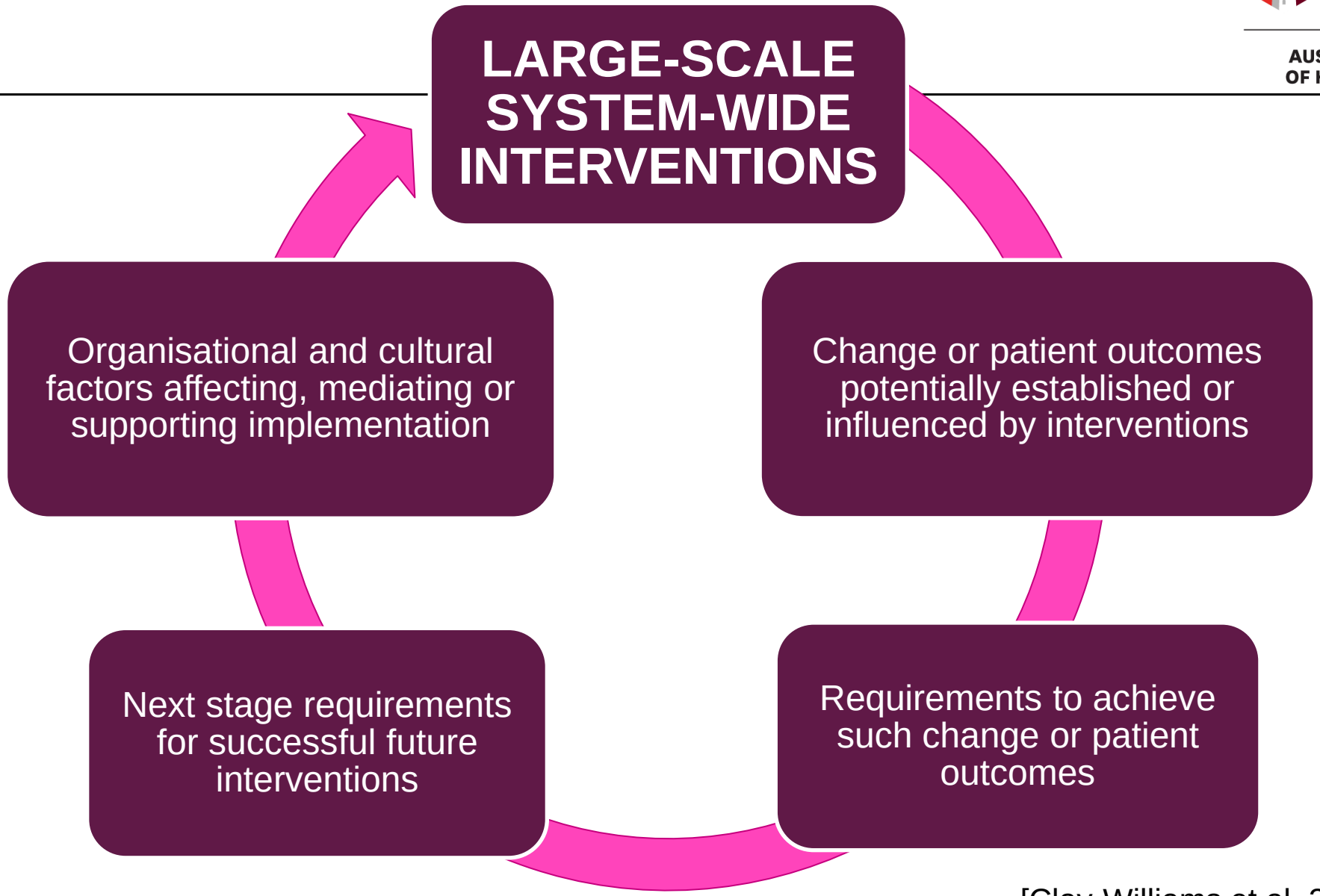

[Clay-Williams et al, 2014. Large-scale hospital- and system-wide interventions]

8. High Performing Hospitals

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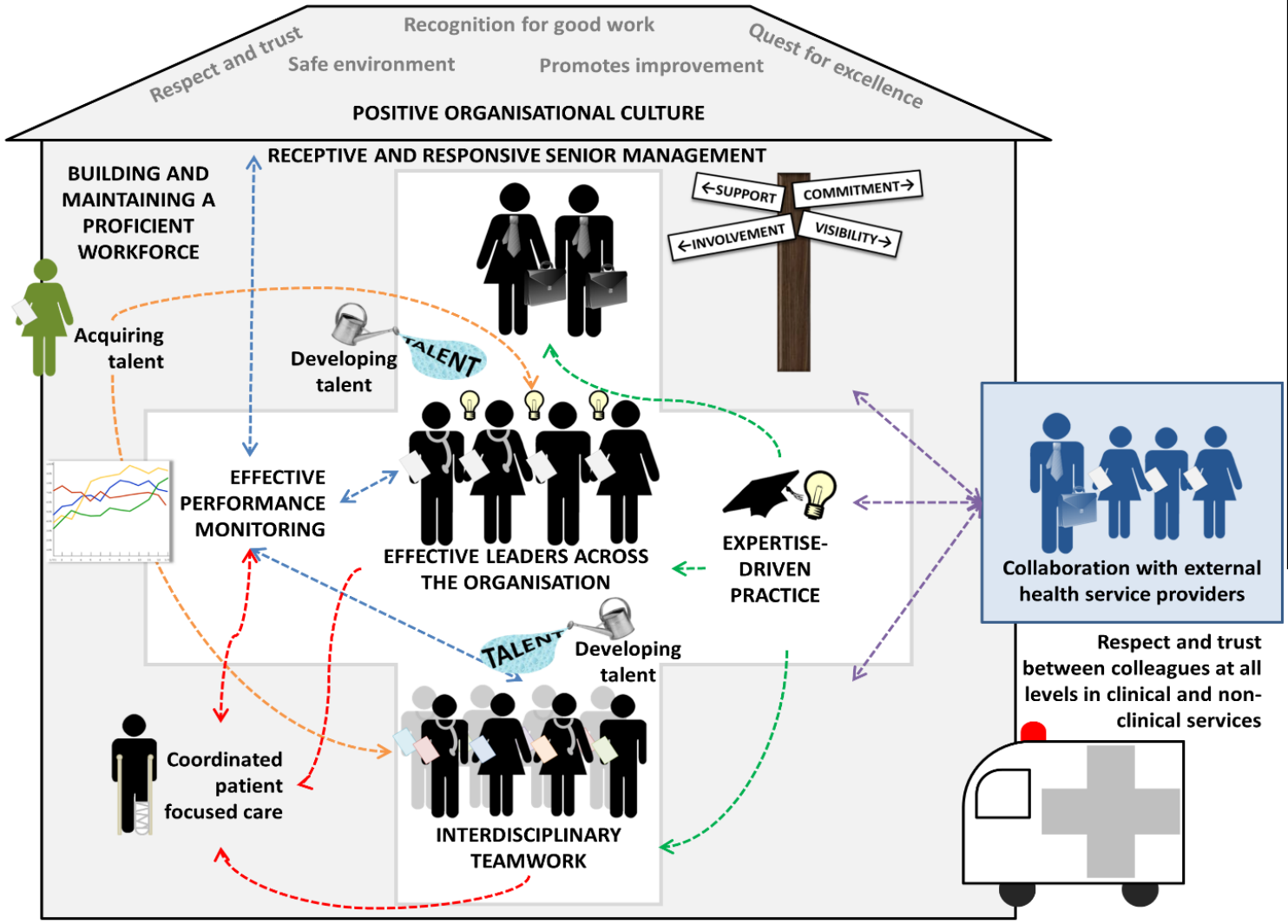

Taylor et al. BMC Health Services Research (2015) 15:244
DOI 10.1186/s12913-015-0879-z

BMC Health Services Research

RESEARCH ARTICLE Open Access

High performing hospitals: a qualitative systematic review of associated factors and practical strategies for improvement

Natalie Taylor[1*], Robyn Clay-Williams[1], Emily Hogden[1], Jeffrey Braithwaite[1] and Oliver Groene[2]

Abstract

Background: High performing hospitals attain excellence across multiple measures of performance and multiple departments. Studying high performing hospitals can be valuable if factors associated with high performance can be identified and applied. Factors leading to high performance are complex and an exclusive quantitative approach may fail to identify richly descriptive or relevant contextual factors. The objective of this study was to undertake a systematic review of qualitative literature to identify methods used to identify high performing hospitals, the factors associated with high performers, and practical strategies for improvement.

[Taylor et al, 2015]

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Discussion: comments, questions, observations?

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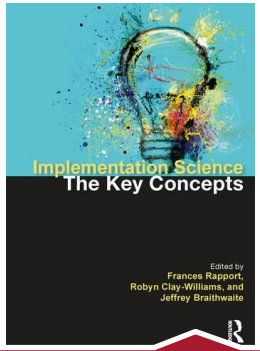
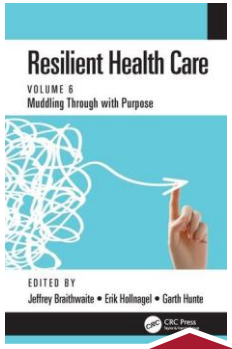


2022 – Transforming Healthcare with Qualitative Research



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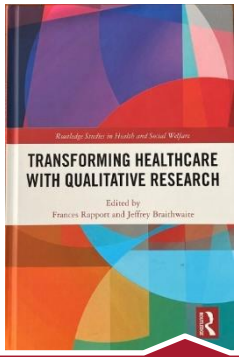

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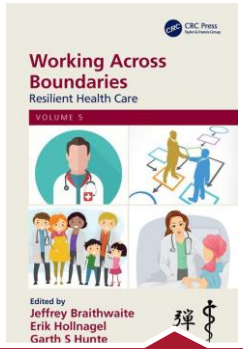
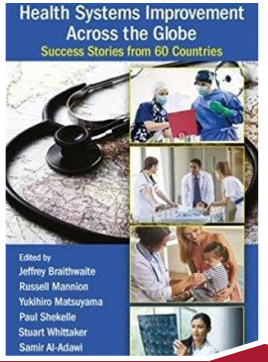


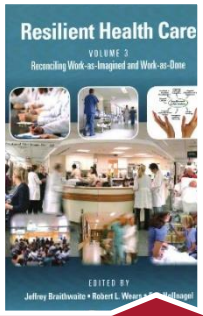
2019 – Working Across Boundaries

2018 – Delivering Resilient Health Care

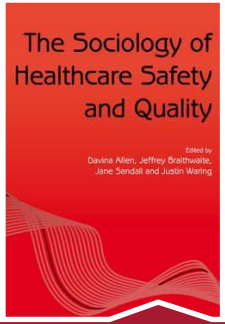
2018 – Healthcare Systems: Future Predictions for Global Care



2017 – Health Systems Improvement Across the Globe: Success Stories from 60 Countries



2017 – Reconciling Work-as-imagined and Work-as-done



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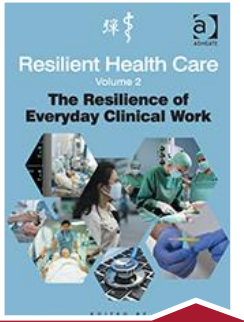
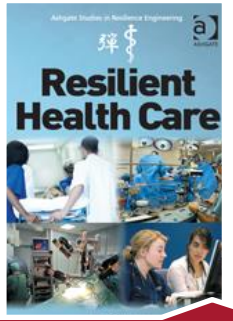
2015 – Healthcare Reform, Quality and Safety: Perspectives, Participants, Partnerships and Prospects in 30 Countries



2015 – The Resilience of Everyday Clinical Work



2013 – Resilient Health Care

2010 – Culture and Climate in Health Care Organizations

Forthcoming books

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Gaps: the Surprising Truth Hiding in the In-between

Surviving the Anthropocene

Counterintuitivity: How your brain defies logic

Handbook on Climate Change and Health System Sustainability

Jeffrey Braithwaite PhD

FIML, FCHSM, FFPHRCP, FAcSS, Hon FRACMA, FAHMS

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