Queensland Health

BRIDGE LABS

A year of collaboration and innovation

2020 — 2021

Queensland Government

Bridge Labs -
A year of Collaboration and Innovation

2020 - 2021

Published by the State of Queensland (Queensland Health), February 2022

This document is licensed under a Creative Commons Attribution 3.0 Australia licence.
To view a copy of this licence, visit creativecommons.org/licenses/by/3.0/au
© State of Queensland (Queensland Health) 2022

You are free to copy, communicate and adapt the work, as long as you attribute the State of Queensland (Queensland Health).

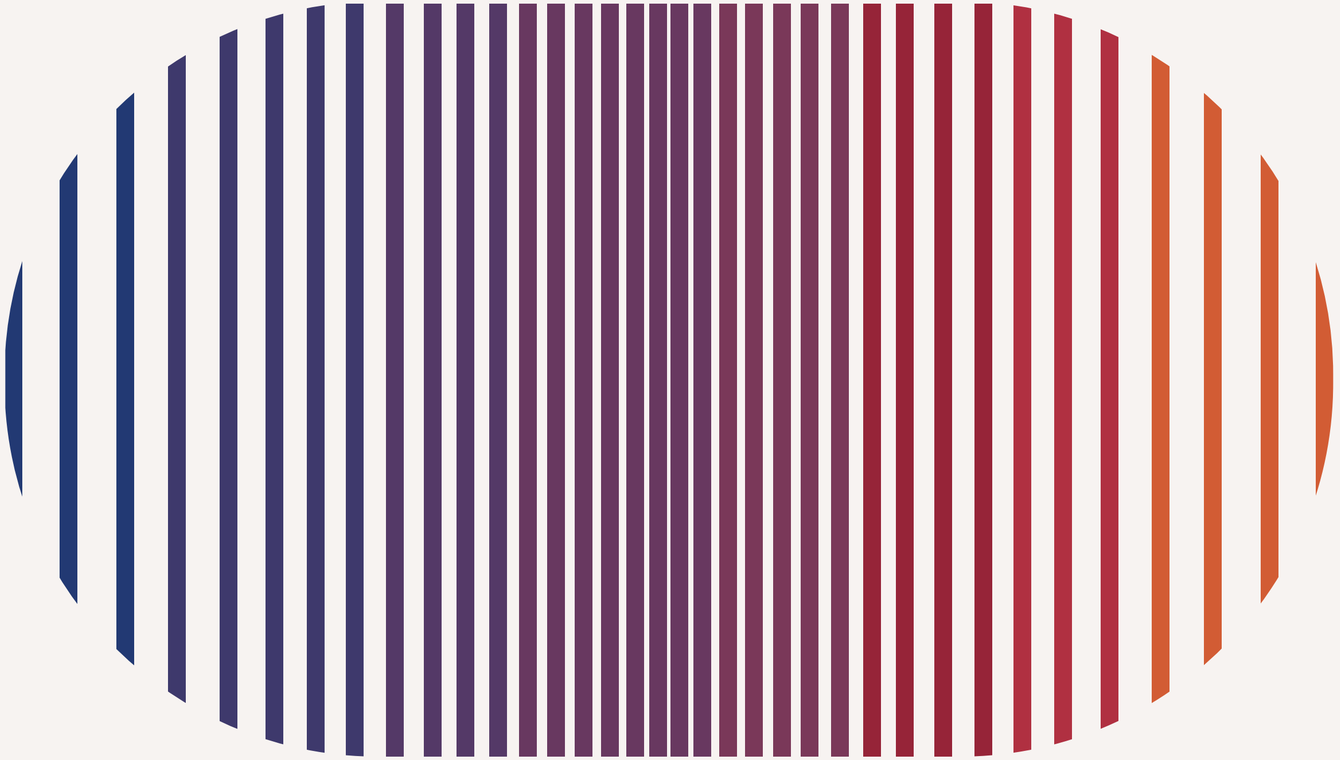
For more information contact:

Healthcare Improvement Unit, Department of Health, GPO Box 48, Brisbane QLD 4001.
Email: BridgeLabs@health.qld.gov.au **Phone:** 07 3328 9167

An electronic version of this document is available at
https://clinicalexcellence.qld.gov.au/priority-areas/service-improvement/bridge-labs-program

Disclaimer:

The content presented in this publication is distributed by the Queensland Government as an information source only. The State of Queensland makes no statements, representations or warranties about the accuracy, completeness or reliability of any information contained in this publication. The State of Queensland disclaims all responsibility and all liability (including without limitation for liability in negligence for all expenses, losses, damages and costs you might incur as a result of the information being inaccurate or incomplete in any way, and for any reason reliance was placed on such information.



Acknowledgement of Traditional Owners

We would like to respectfully acknowledge the Yugara and Turrbal people as traditional custodians of lands and waters which we now share here in Herston. We also acknowledge the Traditional Owners of the lands on which our many partners are based, especially recognising clinicians and members of the community who identify as Aboriginal or Torres Strait Islander, who have contributed as partners and advisors on the many pieces of work described in this report. We pay our respects to all of their Elders both past and present.

We also recognise those whose ongoing effort to protect and promote Aboriginal and Torres Strait Islander cultures will leave a lasting legacy for future Elders and leaders.

OUR PEOPLE

Satyan Chari

PROGRAM DIRECTOR

Leads the design, development and growth of the Bridge Labs program

Jinda McCormack

DIRECTOR

Provides clinical leadership for a range of healthcare transformation priorities in HIU including the Bridge Labs program

Anna Wesselman

PROJECT OFFICER

Coordinates the day to day business of the Bridge Labs and the Healthcare Improvement Community of Practice

jessica cheers

DESIGN FELLOW

Our inaugural experience design fellow, expanding the horizons of healthcare improvement and innovation through creative design methods

INTRO

11 Foreword
Satyan Chari

12 A risk worth taking
Michael Zanco

14 Rediscovering innovation
Linda McCormack

16 Overview

BRIDGES

24 HEAL
QLD University of Technology

26 HF-NET
University of the Sunshine Coast

28 SIBL
Griffith University

OUTCOMES

34 Collaboration

46 Community

54 Capability

NEXT STEPS

60 Since then

66 A designer's lens

68 What's next

Foreword

A risk worth taking

Rediscovering innovation

Overview

INTRO

BRIDGE LABS

Foreword

"Invention, it must be humbly admitted, does not consist in creating out of void but out of c h a o s"

– Mary Shelly

As the Program Director of the CEQ Bridge Labs, it gives me immense pleasure to share our first Year-in-Review report - and what a year it's been. The truly global effects of the COVID-19 pandemic have exacted a heavy toll on individuals, societies, and economies. Yet, 2020 might also be remembered as the year in which healthcare discovered its ability to innovate in a crisis. Amid the chaos and disruption, we've seen examples of breathtaking system shifts, at scale and at speed. The Queensland Health Bridge Labs program is one such example.

The Bridge Labs program was initiated by the Healthcare Improvement Unit (the lead agency for improvement within Clinical Excellence Queensland) to progress a simple goal - to amplify our ability to innovate around emerging challenges by partnering teams at the frontline with key experts from creative design, human factors engineering and the safety & systems science specialities. Armed with a growing body of outcomes, we now have a persuasive story to tell – a case study in transformation rooted in thinking big, starting small, and a bias towards action.

This report is set out in three sections. In the *Intro*, we describe who we are, why such a program is needed in Queensland and what the Bridge Labs uniquely add to the current healthcare improvement and innovation landscape. Under *Bridges*, readers can learn more about each of our three formal linkages, their unique capabilities and vision for translation. Under *Outcomes* we unpack the multitude of impacts and outputs realised over the last twelve months. Finally, we look to where we are headed in *Next Steps*.

The Bridge Labs continue to evolve to maximise benefits to our colleagues and consumers – but never straying from a core philosophy of accessibility, collaboration, and the courage to try new things out. I do hope you enjoy reading this report and find reasons to share in our excitement for the future of this program and the value it brings to Queensland.

Satyan

In our inaugural year, the Bridge Labs program has:

30+
projects
Successfully delivered on at least thirty different clinical and system improvement projects

300+
clinicians
Engaged directly with over three hundred clinicians and healthcare colleagues

200%
community
Catalysed a doubling of our improvement community of practice (HICOP)

$2mil
applications
Contributed to over $2 million of grant success to drive innovation in healthcare

$100k
grants
Attracted over a hundred thousand dollars in clinician-led grants

education
Delivered numerous high quality webinars and workshops on cutting edge thinking and tools in healthcare improvement

training
Built scalable virtual training programs in human factors, safety leadership and design thinking

tangible benefits
Delivered real and measurable value to healthcare consumers in Queensland

testimonials
Garnered many testimonials from clinicians and leaders describing the deep positive impact on them and their teams

A risk worth taking

It gives me great pleasure to write this message for the CEQ Bridge Labs program's Year-in-Review report.

As someone who has lived and breathed performance improvement and transformation for more decades than I would like to admit, I have seen more than my fair share of change in healthcare. Much of this has been positive. Queenslanders have benefited from a greater focus around quality and value, the launch of many new streams of consumer-centric service, the world-leading work on reaching remote and rural consumers via telehealth, and the remarkable advances we have made in transitioning hospital based care to the digital realm. We have expanded services, increased value in a number of areas, and driven critical improvements in infrastructure and capability. This is worth recognising & celebrating – but it is also not enough.

All of our modelling would suggest that demand for hospital-based care will continue to increase faster than we can build and staff hospitals. We are already seeing some of the early effects of this escalating demand in the form of bottlenecks at the usual entry points to our health system and pressures on surgery lists. We know we cannot 'solve' these problems by just purchasing more capacity. Those are only temporary solutions. We must innovate and find new and transformed ways of managing demand. We need to be able to anticipate the problems of tomorrow and prepare for them today, but also retain capacity to deal with unexpected challenges like the many we have seen during the pandemic.

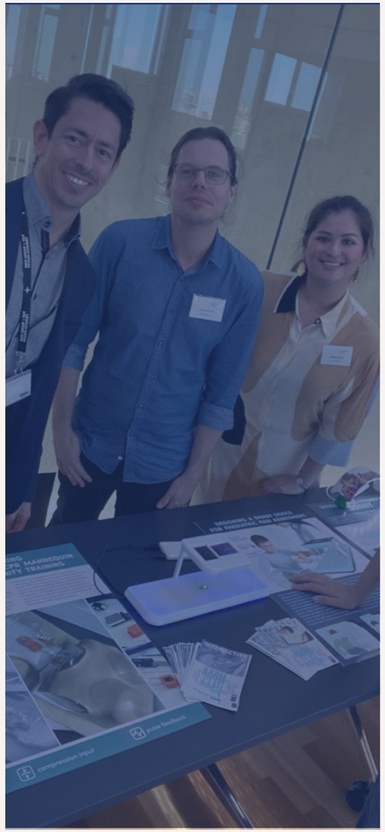
As the lead agency for healthcare improvement in Queensland, it often falls upon my team to develop strategies and programs to mitigate these risks, and the Bridge Labs program is one such initiative to help us generate new answers. The core idea behind the Bridge Labs was to tap into the vast expertise in our academic sector to help us tackle complex operational problems in novel ways. The Bridge Labs started as an experiment but I have to say that I'm really pleased with how they are going. The range of outcomes (over 30 projects completed, and significant grant funds won), the breadth and scale of the program's reach (six health services, over 300 clinicians involved) in such a short amount of time has been impressive.

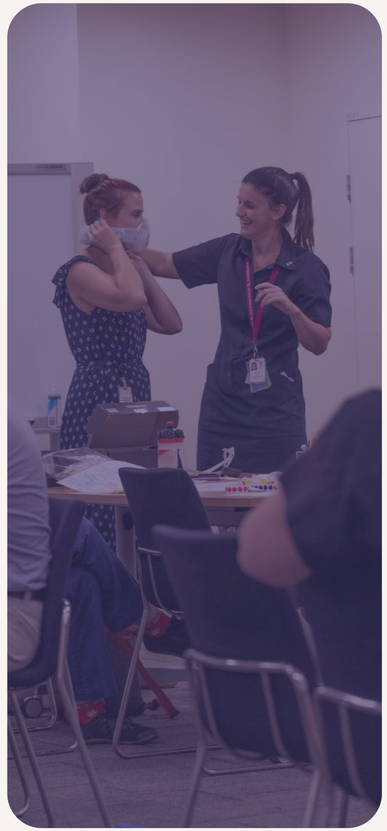
The practical on-the-ground approach that this program has demonstrated is something we need to keep growing. It's where the rubber hits the road and we can tap into the wisdom and expertise of the university sector to help solve problems collectively. The Bridge Labs are really creating a sense of partnership and collaboration across the State.

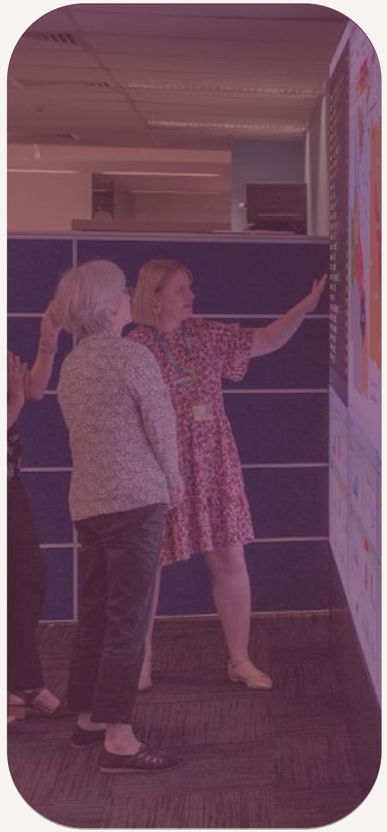
I commend Satyan and the team for having the ability to see things differently, building this idea into reality and their perseverance if following through despite a multitude of challenges. I am very keen to see how we might grow and scale this important work as we move into the post-pandemic period and beyond.

MICHAEL

Michael Zanco | *Executive Director*







Rediscovering innovation in healthcare improvement

An interview with Linda McCormack

Linda McCormack | *Director*

Linda you've been a visible and proactive leader in Queensland Health's journey towards safer and higher quality healthcare. Over the past two decades what do you see as some the big wins and memorable outcomes that you have been part of?

Healthcare has come a long way in Queensland over the past twenty years. In 2005, significant system change was triggered following serious allegations of patient harm related to a surgeon appointed to a regional hospital in Bundaberg. I was initially called on to lead a comprehensive community response to identify, assess and support patients around this emerging situation but it morphed into a broader health crisis as similar concerns began to surface about other hospitals. The situation gained international attention and quickly became a matter before the courts. At this point, I transitioned to coordinate Queensland Health's response to the Queensland Hospitals Commission of Inquiry and to the subsequent criminal trial of the surgeon. By working intimately with affected consumers and clinical teams, by coordinating evidence from the forensic review of our system within the courts for nearly a year, I developed a deep appreciation how outcomes like these cannot be divorced from systems that surround people and processes.

The Commission's recommendations came at a unique time for Queensland. Dr John Wakefield, who recently completed his tenure as Director General for our health system, had just returned from his patient safety fellowship in the United States and had established the fledging Patient Safety Centre. We were finding common cause with many other health systems globally – recognising the scale of the problem of adverse harm and that a scientific approach to improvement was called for. That was truly a period of remarkable disruptive innovation. We went from a relatively blank slate to widespread implementation of systems for clinical governance, standing up a whole new skilled workforce in quality and safety, making investments to promote these new priorities, establishing a whole new way of recording, analysing and learning from harm, writing legislation for patient safety, and cultivating a culture of open disclosure and acknowledgement of harm. As a health system, in a matter of years, we went from a largely ad hoc approach to a systematised model. This enabled clinicians and support teams to engage with emerging safety and quality problems using the most contemporary thinking and tools available at the time, with the training resources to undertake the necessary work with rigour. We really did lead the way nationally for many years.

I think healthcare is remarkably different in 2022 to it was in 2002. Back when I was still leading clinical teams, it was quite reasonable to expect that by pulling together a group of clinicians, devising a plan and implementing process change or reconfiguring care you could resolve most quality problems. This is rarely the case today. Healthcare is far more inter-linked and interdependent, our patients more complex, services have become increasingly subspecialised across clinical and administrative functions, the efficiency pressures on the system are significantly higher and there are so many more layers of technology interlaced with hands-on patient care. There is an emerging school of thought that this has fundamentally changed what healthcare is, how it operates and why a completely different approach is now required. I tend to agree with this position but it's one that's not as widely appreciated as it should be in healthcare. I do think our toolkits are looking less fit-for-purpose than they did twenty years ago, and this is something that has really been borne out by our experience and repeatedly confirmed by leading researchers in the field. But something concerns me even more than this misalignment between emerging issues and the suitability of the tools we rely on - as health systems we seemed to have lost two critical abilities that are necessary to move in a more positive direction.

The first is our ability to gather and apply learnings at a 'whole-of-system' scale and the second is a capacity for disruptive innovation. These were once enviable strengths of Queensland Health and we must be able to do so again. There was quite an emphasis on learning systems in the early 2000s and it's good to see the resurgence in these ideas in safety and quality today. But regardless of new and emerging thinking in the field, it is all purely academic unless we can rediscover our ability to learn from our system's current performance and also our ability to reshape our thinking, tools and approaches accordingly. Cultivating and maintaining these capacities will be critical in coming decades as the rate of change escalates, as familiar challenges shift, as new ones emerge and as methodologies keep evolving.

In the past ten years or so how have you seen the challenges evolve? What does this mean for us, our health system and the models for improvement we use?

In light of this, would you say you are optimistic about the future of healthcare and our ability to continue to improve quality and safety for our consumers?

I am and I think we all have good reasons to be.

Personally, I am constantly in awe of our frontline clinical teams – their creativity, resourcefulness and unflagging desire to improve care for our consumers. This has a been a constant feature of our health system and one I am incredibly proud of. Despite the acute challenges we are facing today, we have seen some breathtaking consumer-centric innovations emerge from our frontline when we have empowered them in small ways – by adding contemporary knowledge on systems improvement to their teams (via sponsorship of clinicians into our healthcare improvement fellowship program) or by linking improvement teams to external expertise (via the Bridge Labs). Several of these early examples are discussed in the inaugural Bridge Labs report but it does not take much to imagine what might be possible if we could take these programs to scale.

Linda McCormack is the Clinical Director for the Healthcare Improvement Unit (HIU) and is a nationally-recognised leader in patient safety and quality improvement. Linda provides oversight for a suite of dynamic programs within Clinical Excellence Queensland responsible for driving system transformation. These strategies for capability uplift (such as the Healthcare Improvement Fellowship), the Healthcare Improvement Community of Practice (a network of like-minded clinical improvers) and the Bridge Labs.

Overview

The Bridge Labs were created in 2020 by the Healthcare Improvement Unit (HIU), which is the lead agency for healthcare improvement and part of Clinical Excellence Queensland. Our intent was to accelerate Queensland's journey towards excellence in healthcare and help generate new answers to the many complex challenges we face as a health system, several of which have escalated or worsened due to the COVID-19 pandemic.

Strategy

The Bridge Labs strategy (lightly adapted from the 'Strategic Doing' model pioneered at the Purdue Agile Innovation Lab) is configured around four simple questions that allow for a flexible and proactive approach to strategic innovation.

What could we do?

What are all the possible opportunities before us? Based on the resources and networks that we currently have, what could we do to help our health system move toward a positive future?

What should we do?

We can't do everything – which opportunities, out of all the possibilities, should we pursue right now?

What will we do?

What commitments are we willing to make to drive the priorities we have selected?

When do we adjust course?

When are we going to get back together to talk about what we've learned, to adjust our direction based on those lessons if needed, and to set our course for the next period?

Goals

We commenced with very specific goals for the first year of the program.

Create access to expertise

We sought to make expertise from key systems change disciplines available to frontline clinical improvement teams and system leaders. The Bridge Labs have done this through a) ready and responsive advisory around emerging systems issues b) substantial project mentorship for improvement initiatives across the state and c) developing focused collaborations on larger pieces of work.

Connect the system to new ideas in improvement

As a catalyst for new ways of looking at entrenched issues, the Bridge Labs have sought to bring the improvement community into closer contact with new ideas in creative design methods, human factors and safety innovation via workshops and seminars with partner academic experts.

Test and refine our collaboration model

Since the beginning, we have invested a lot of time and effort into project-level collaborations. We intentionally prioritised working with clinical teams to test and refine how we created beneficial collaborations between academic and clinical communities. This has allowed us to learn how best to structure engagements to maximise value, to understand the breadth of areas where productive partnerships could emerge, to reduce start-up times, and to learn how partnered improvement approaches can drive positive outcomes.

Develop capability enhancement programs

To help scale-up ongoing capability uplift efforts, the program also prioritised the collaborative development of world-class self-directed learning materials on creative design, human factors and safety innovation.

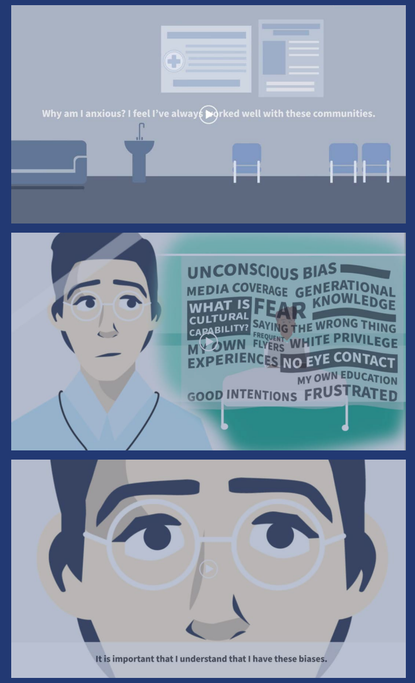
Drive research and translation

By creating a large margin of contact and promoting relationships between the two communities (academic and healthcare) we anticipated growth in successful competitive research bids that would lead to more rigorous collaborative work. The Bridge Labs have proactively supported the development of follow-on proposals and bids that grew out of early partnership projects we funded.

> Working with the Bridge Labs has created a seismic shift in how I view change and improvement in healthcare. Working with and learning from an academic designer has brought the patient and family right back to the centre of how we structure our service, and I've learnt so much on the journey: about the care we currently provide, the care our patients want us to provide, and how to bridge the gap between the two. This is a powerful, inspiring and exciting initiative with so much potential for meaningful improvement!

Rebecca James

Rebecca James was a 2020 Healthcare Improvement Fellow and is currently a Paediatric Rheumatologist at QCH. She recently received Avant funding to co-design the First 100 Days of Juvenile Arthritis



> As a First Nation clinician I am passionate about conveying the complex story about what cultural safety means to First Nation consumers in a way that is accessible to clinical colleagues and to system leaders. The opportunity to work with animators and designers via the Bridge Labs gave me the tools I needed to contextualise cultural safety into our health system and communicate this vision in an impactful and innovative way.

Kirsty Leo

Kirsty Leo was a 2020 Healthcare Improvement Fellow and is currently Assistant Nursing Director for Aboriginal & Torres Strait Islander Health Services at The Prince Charles Hospital

HEAL

HF-NET

SIBL

BRIDGES

BRIDGE LABS

Three formal Bridge Labs have been established, each unlocking distinct specialist capabilities and innovation opportunities.

SIBL

Griffith UNIVERSITY

The Safety Innovation Bridge Lab

HEAL

QUT Design Lab

Healthcare Excellence AcceLerator

HF-NET

USC

Human Factors Learning and Innovation Lab

HEAL

Healthcare
Excellence
Acce**L**erator

As our world gets more complex and uncertain, we need innovative collaborations & fresh ideas. This is why design-led innovation is so critical – it gives us the ability to transform what is and design what could be. A key theme at the QUT Design Lab is Design for Health, where our team of academic designers work in partnership with clinicians, leaders, and importantly health consumers, to speculate, imagine, design, and innovate.

Over the last year, the Healthcare Excellence AcceLerator (HEAL) linked the QUT design and innovation community with Queensland Health, accelerating healthcare improvement efforts across the state. In twelve short months, we codesigned a multi-specialist virtual clinic, developed thought-provoking animations to build clinicians' awareness of cultural safety for First Nation consumers, prototyped personal protective equipment (PPE) that was more child-friendly and less scary, conceptualised design improvements for hospital spaces to be more patient-centric and so much more.

What has amazed and delighted me is the interest, support, engagement, and demand for a design-led approach to healthcare transformation – HEAL has triggered some of the deepest trans-disciplinary dialogues we have been part of – about the challenges facing the system, the urgent need for innovation, and the huge potential for design and designers to be powerful positive disruptors and collaborative agents of change. Working with Clinical Excellence Queensland and multiple health services across Queensland, I have been struck by the passion and determination of people in the system – continually striving to improve their consumers' healthcare experience.

Looking to the future, I believe designers can help trigger transformative, systemic change in all aspects of healthcare – but particularly in three inter-linked priority areas: Chronic Disease Management; Health Technology Innovation; and Equity and Access. Designers could help with value-based redesign of diagnostic and treatment pathways. Designers are also especially well-placed to amplify healthcare's journey to a technology-enhanced but human centred future. I would also like to us collaborate on the uplift of current physical spaces in hospitals to be more biophilic (connected to nature), to develop and trial innovative models to reduce the demand on emergency departments and to look at ways to improve the hospital experience for vulnerable consumers. The opportunities are truly limitless.

Design focuses on making products and services–and our interactions with them–more effective, efficient, and accessible – and I look forward to seeing how HEAL evolves in coming years, to positively enhance the experience of health in Queensland.

@ QUT Design Lab

"QUT Design Lab's mission and vision is to reimagine and redesign the future"

Prof Evonne Miller | *Director*

HF—NET

Human Factors Learning and Innovation Lab

The Centre for Human Factors and Sociotechnical Systems (HF-STS) is a research centre at the University of the Sunshine Coast in Queensland, Australia.
We apply Human Factors and Ergonomics (HFE) to understand and improve the performance of systems across a variety of industries like transport, defence, sport, cybersecurity and increasingly, healthcare. Our team brings a rich and diverse background to our HFE research and practice spanning behavioural science, law, design, and cognitive psychology.

We are especially interested in applying human-centred systems thinking approaches to improve performance and safety in high-risk industries. While uptake of these cutting-edge HFE approaches have lagged in healthcare, our collaboration with Clinical Excellence Queensland seeks to close that gap. The Human Factors Learning and Innovation Bridge Lab (HF-NET) is helping rapidly translate state-of-the-art systems HFE tools in risk management and in adverse event analysis into healthcare safety and clinical improvement practice across Queensland.

We are doing this by refining methods, developing education, and delivering training to support healthcare practitioners in applying systems HFE in practice. Over the last year, the HF-NET Bridge Lab has enabled clinicians across the state to access (in-person) methods training workshops led by our academic team, avail of drop-in practitioner support sessions and attend a hugely popular online webinar series focussed on key HFE issues in healthcare. HF-NET has also enabled collaborations with the CEQ Improvement Fellowship program to develop a short self-directed learning program on human factors for healthcare practitioners.

Finally, we have co-investigated a world-first study with CEQ, through which we are gathering data regarding how easy systems HFE methods are to use in healthcare practice and on the barriers that might prevent their adoption. This study involved eight workshops across Queensland over ten months. Our initial analyses suggest that healthcare practitioners find these emerging methods valuable in generating valid and useful outputs, but that limited time, resources and support might prevent them from fully realising their benefits.

The level of buy-in and appetite for new thinking from the Queensland Health community has been impressive and exciting. We have seen high levels of engagement from many clinicians, practitioners and leaders who are seeking to apply these new HFE methods and underlying concepts in their own work. These are encouraging steps toward a paradigm shift in healthcare improvement. Looking ahead, we intend to work closely with the Bridge Labs program to directly address barriers to wider adoption of HFE tools, to support Queensland Health to more fully integrate systems HFE into standard processes, and ultimately help create safer and more efficient healthcare systems.

@ University of the Sunshine Coast

"We are especially interested in applying human-centred systems thinking approaches to improve performance and safety in high-risk industries"

Professor Paul Salmon | *Director*

SIBL

The Safety Innovation Bridge Lab

The Safety Science Innovation Lab was founded to capitalise on the opportunities for collaboration between science, health, business and the humanities and social sciences to drive critical innovations in safety science through a better understanding of complexity and the socially constructed nature of safety. Our cross-disciplinary academic team at SSIL includes world-leading theoretical and translational expertise in safety science, restorative justice, complexity science, safety leadership, human factors, cognitive psychology and social ethnographic methods of sensemaking. We have been helping organisations, leaders and practitioners think about and engage with safety differently. The SSIL seeks to shift industries away from bureaucratic, compliance-oriented models of safety and towards a more human, adaptive and just approach - one that enables rather than impedes frontline workers in their efforts to create safety in operations every day. There is a dire need for exactly such a shift in thinking in healthcare, an industry with a rising burden of compliance, unyielding rates of harm and a workforce that is tiring under the pressure of the ongoing pandemic. New answers are needed and the Safety Innovation Bridge Lab (SIBL) was conceived in collaboration with our partners at Clinical Excellence Queensland to create the conditions for disruptive change in Queensland.

We set out last year with three goals in mind. First, to create the means to inject SSIL's expertise alongside clinical teams to address emerging issues (like those brought about by the pandemic) with responsiveness and agility. Second, to engage in a wide and penetrative conversation with frontline workers, safety practitioners and system leaders on contemporary and cutting edge thinking in the field of systems safety. Finally, to bolster internal capability building initiatives within Queensland Health through resource development and mentorship of these programs. The Safety Innovation Bridge Lab (SIBL) is evolving into a unique linkage - A shared ecosystem where we can implement and test ideas in the field quickly, while our healthcare colleagues can in turn tap into the 'central veins' where some of this knowledge is flowing and developing. This is one of the great attributes of SIBL. Through training, engagement, expert consultancy and cross-linkages, SIBL has catalysed several partnerships between our group and Queensland's healthcare system. We are working with clinical teams looking to apply restorative justice principles to improve their systems for safety, with teams seeking to build adaptive capacity in pathology testing and with clinical programs wanting to undertake 'everyday work investigations' to probe the real-world complexity of clinical decision making around persisting issues, like the recognition and management of sepsis and the escalation of patient concerns.

We would like to congratulate the Healthcare Improvement Unit for leading Queensland Health on its journey of transformative improvement. It's necessary and overdue. Looking to the future we are excited by the possibilities that SIBL's growing maturity will bring - in joint research and innovation, and in widespread frontline-led systems improvement. Safety innovation is not easy or quick, and the challenges of manifesting sustainable change in real-world settings are not trivial. Even so, the people of Queensland have many reasons for confidence that we are on a promising trajectory towards achieving the goal of a safe, just and high quality care system.

@ Griffith University

"One aspiration I have from this linkage is to simply shorten the time to market - from idea to implementation."

Prof Sidney Dekker | *Director*

“For us, the clearest evidence that our Bridge Lab collaboration with QUT and CEQ was successful is in the outcome. Together we achieved a totally transformed environment which brings joy to everyone who encounters it, and most importantly leads patients and families to spaces where kids can still be kids and families can relax together, away from the stressors of clinical routines.

Belinda Taylor

Belinda Taylor is the Executive Director of Communications, Culture and Engagement at Children’s Health Queensland

To HIU, thank you for the vision in supporting the Bridge Labs program and the Level 6 redesign at Children’s Health Queensland; I hope seeing this brings you some joy and you can see that golden thread that connects with the work you do everyday at Clinical Excellence Queensland.”

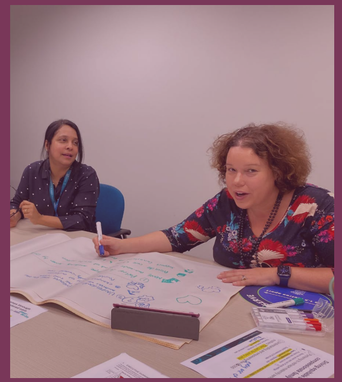
Frank Tracey

Frank Tracey is the Health Service Chief Executive of Children’s Health Queensland

collaboration

community

capability



OUTCOMES

The first year of the Bridge Labs program was all about...

COMMUNITY

Growing the Healthcare Improvement Community of Practice, which doubled in membership

COLLABORATION

Seeking deeper collaborations to drive frontline improvement projects

CAPABILITY

Creating workshops and education opportunities to improve healthcare improvement capability

COLLABORATION

A key focus during the inaugural year of the Bridge Labs was to test the feasibility and effectiveness of our collaborative model - by partnering clinical improvement teams with expertise (academic designers, human factors experts and safety scientists).

We undertook a tranche of demonstration projects as test-beds for our model and invited expressions of interest from clinical colleagues and improvement teams across the state. We were especially interested in submissions that aligned with key departmental & ministerial priorities, where there was potential for transformative impact at scale or where programs could help the system to address the impacts of COVID-19. We were specifically looking to inject specialist expertise (primarily in design, but also in human factors science and safety innovation) alongside healthcare teams that were already actively pursuing services and system improvements. Whilst we had initially committed ourselves to supporting six demonstration projects, the demand from our health system escalated quickly as word of the initiative (and opportunity to partner with experts) got out. Fortunately, this demand was matched by growing interest from our Bridge Lab partners and we were able to progress many of these requests for support.

The project outputs described in this section, although impressive in their own right, should be viewed as case studies that illustrate the feasibility and clear real-world validity of our approach - undertaken during a pandemic year, with little start up time, with reasonably design 'naive' healthcare colleagues, yet with an incredible range of successful projects on display. We have gained deep insight into how healthcare systems like ours can generate mutual value from well-designed academic partnerships.

Learn more about our projects

- Playful Placemaking & Wayfinding in the Queensland Children's Hospital — PAGE 36
- Co-creating virtual care: Virtual Outpatient Integration for Chronic Disease
- Animating Cultural Safety
- Delivering seamless care in Central Queensland
- Connecting rehab services across West Moreton
- Using digital manufacturing to design out diabetic foot problems in regional Australia — PAGE 38
- Creating a sense of arrival for the RBWH Birth Suite
- Promoting Adaptive Capacity in Pathology Testing — PAGE 40
- Co-creating a Cancer Wellness website
- Interactive CPR Manikin for community training
- The pain pressure cooker: A rapid one-hour co-design sprint
- Prototyping a novel pain metric for paediatrics admissions
- Application of human factors science in vaccine deployment planning — PAGE 41
- Design-led Sense-making with the Queensland Stroke Clinical Network — PAGE 42
- Enhancing Access to 'Just' Healthcare for CALD clients
- CEQ Project Management Framework 2.0
- Emergency Room Entrances and Exits
- Co-designing child-friendly Personal Protective Equipment (PPE)
- Co-designing a healing environment for PICU families and staff — PAGE 44
- Using images to reduce urine contamination in the ED

COLLAB ORATION HIGH LIGHTS

Photos *(left, right middle and right bottom)*: Sarah Osborn

Visual Design of the Level 6 Entertainment Precinct at the Queensland Children's Hospital

HEAL

One of our first collaborations was a way-finding and spatial design project between the Queensland Children's Hospital (QCH) and the QUT Design Lab (via HEAL). For many children who require ongoing inpatient care at QCH, the entertainment precinct on level 6 of the hospital provides vital respite, a place where children and young people can go to smile, have fun and forget about being in hospital and their treatment for a while. The precinct which hosts Kidzone, the Starlight Express Room and Radio Lollipop required an integrated visual identity, one that built on motifs that characterise the hospital but which would also generate a sense of excitement on arrival at the floor and assist children and families find their way in and around the precinct.

Local artist Kirsten Baade collaborated with the hospital's own design team and Arts in Health Program via the HEAL design linkage to develop a fun and engaging concept including murals, floor art, and digital animation. Wayfinding to each of the precinct's not-for-profit partners was supported by floor decals of parrot feathers in the colours of each provider which led from the lifts to each destination. The themes built on the nature and parrot motifs that were already part of the hospital's fabric and have promoted a sense of spatial and functional integration in the space.

Jen Seevinck

Kirsten Baade

Evonne Miller

Lynne Seaar

Gillian Ridsdale

Learn more about this project

Disruptive Innovation at Mount Isa Hospital

HEAL

Mount Isa hospital services a vast geographical catchment of remote and regional consumers, including several first nations communities and provides a vital access point to healthcare services. The podiatry service in Mount Isa hosted a textile design research higher degree (HDR) student (Isabel Byram) early in year one of the Bridge Labs program with the hope that there might be opportunities to undertake materials innovation in the types of prescription footwear that were being provided to consumers from remote communities with peripheral limb problems due to diabetes and other conditions.

However, through Isabel's site visit at Mount Isa, it became clear that the biggest opportunities were not in redesigning orthotics and footwear but in redesigning the entire consumer experience. Patients would often have to travel several hours to be assessed by a podiatrist and then return at another time when the fly-in-fly-out orthotist was next in Mount Isa. A third trip would often be required several weeks later to have the fitting done, by which time the person's condition might have deteriorated further.

The industrial design team from QUT Design Lab, led by Assoc Prof Marianella Chomoro-Koc crafted an industry partnership between Mount Isa hospital, the University Queensland School Of Mechanical Engineering, iOrthotics (a Queensland based provider of custom orthotics based on advanced 3D manufacturing techniques) and Myfootdoctor (a Nation-wide provider of private and telehealth podiatry services). The team came up with an innovative model to approach the issue through end-to-end reconceptualisation of the entire supply chain. The team envisioned a model where volumetric scanning of patients' limbs could be undertaken by their local health worker or at a clinic where they live (under the guidance of a podiatrist via telehealth). The scans would be uploaded to a cloud service and the orthotics would be 3D manufactured in Brisbane using the digital scans and sent up to Mount Isa for the final fitting with the podiatrist - cutting out considerable cost, time and inconvenience while improving clinical outcomes and transforming consumer experience. This proposal has since garnered a significant investment from the Commonwealth via its Cooperative Research Grant funding scheme (over two million dollars) and research is commencing.

Isabel Byram

Marianella Chomoro-Koc

Sarah Bohan

Learn more about this project

Promoting Adaptive Capacity in Pathology Testing

SIBL

Whilst project level support has been the mainstay of the Bridge Labs model, many of our outcomes also came via responsive consulting into emerging challenges. One great example of this was the first piece of work we undertook through SIBL Bridge Lab – to help our straining Pathology services in Queensland to find better ways to cope with surging demand for COVID-19 testing. The service was looking to find ways to extract more capacity from an already stretched system. When Prof Sidney Dekker and a small team from Clinical Excellence Queensland facilitated a session with their middle and senior leadership, we were able to advocate for early adaptations focused around load sharing across the statewide pathology network and creating adaptive capacity as a way of building resilience under the uncertainty of the pandemic. This shift in focus, enabled recognition of how middle-level leaders had already been leveraging horizontal capacity to deal with exactly these types of scenarios. By having Prof Dekker's expertise in the room we were able to introduce a mental model that prioritised adaptive capacity, that unlocked new ways of responding to the emerging scenario in terms of the service's strategy for preparedness. These insights have also informed an end-to-end review of COVID-19 testing in Queensland, conducted by HIU.

Sidney Dekker

Linda McCormack

Michael Tresillian

Application of human factors science in vaccine deployment planning

HF-NET

The Bridge Labs also had the opportunity to directly contribute to Queensland Health's preparation and response to the COVID-19 pandemic on another front. As the State began readying its vaccine deployment program in advance of shipments arriving from the Commonwealth, we were requested to provide advice and support from a human factors engineering perspective, to contribute to a successful vaccine delivery system in Queensland. Our colleagues from HF-STS, including Prof Paul Salmon, Assoc Prof Gemma Read and Dr Adam Hulme were brought on to the project early and the Bridge Labs program facilitated a high-level workshop with the Queensland Vaccine Taskforce to share insights on program design from a systems human factors perspective.

The team developed a Work Domain Analysis (WDA), which is a human factors method appropriate for systematically examining assumptions and constraints in complex socio-technical systems, including yet to be created ones (such as the proposed vaccine deployment program). The team worked with subject matter experts to complete the WDA and converted the findings into an easy to use check sheet that could be flexibly applied to plan, commission and deploy any large scale vaccine deployment system. This proved to be a high utility exercise but also showcased the Bridge Labs program's capacity to introduce expertise into pressing, time sensitive, priorities.

Paul Salmon

Gemma Read

Adam Hulme

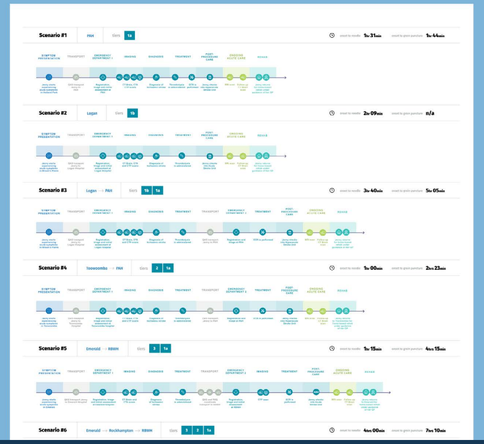
Design-led Sense-making with the Queensland Stroke Clinical Network

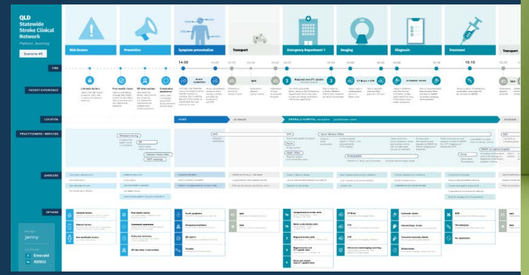
HEAL

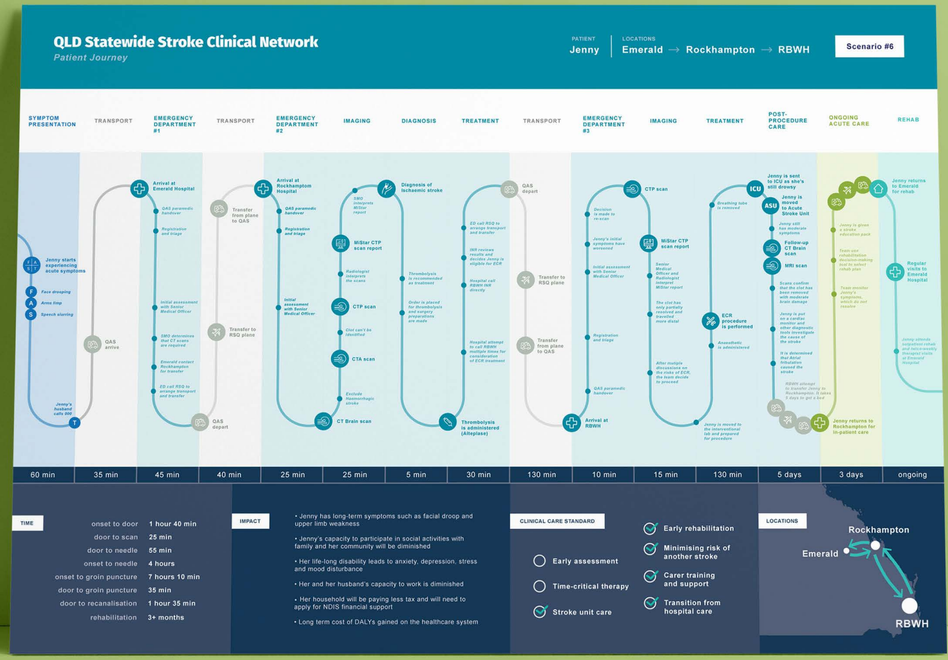
Another fascinating example of positive disruption was a small project undertaken by the statewide stroke management clinical network. Kate Jacques, an experienced stroke nurse and coordinator of the network, was looking for support to help the group find new ways of addressing system-level issues. Jess – our very talented design intern at the time – worked with the Stroke Network and guided their thinking around the creation of consumer personas and representative consumer journeys of stroke care in rural, regional and metropolitan areas.Injecting a design-oriented mental model into the question of statewide stroke pathways yielded a visualisation that placed the challenges and opportunities in a completely new light whilst rendering an incredibly complex system more tractable - something that could be engaged with and thus improved. This work has seeded important follow-on conversations that will likely lead to additional partnerships in system redesign and enhancement.

Katherine Jaques

Jessica Cheers







BRIDGE LABS

Design Partnerships and the PICU Liberation Program

HEAL

Among the various project successes, a standout piece was our HEAL Bridge Lab project with the paediatric intensive care unit (PICU) team at Queensland Children's Hospital. The team initially reached out looking for support to develop a set of family-facing electronic resources in their efforts to make their services more family-friendly and recovery-orientated.This team had been part of an important global journey to "liberate" patients from the harmful effects of long stays in intensive care settings.

Within weeks of connecting with HEAL, the Queensland Children's Hospital PICU team had completely revamped their approach and a multipronged PICU Partnership Project began to take shape. QUT design lab researchers from a number of specialty areas began work with PICU clinicians and family members to reimagine what a healing-focused environment could and should look like. With the families as the focus, the team immersed themselves in the ward with weekly site visits, spatial observations, parent and staff interviews and a number of visual engagement strategies that culminated in the PICU Marketplace; a series of drop-in activities that ran over two days in the central corridor to gather data and engage staff and families in the design process. The Marketplace concept responded to the nature of an intensive care ward, where commitments of time (to attend a workshop) are just not possible. This initiative was so well received the Director of PICU, Dr Christian Stoker, has voiced his desire to adopt the approach for rapid engagement across the board in the paediatric care environment.

Natalie Wright

Anastasia Tyurina

Judy Matthews

Evonne Miller

Leighann Ness Wilson

Sarah Johnstone

In response to the evidence collected throughout the project and the consumer voice (interview transcripts from parents themselves), the program is making important headway. Thematic design concepts have been developed and delivered alongside interior design options to 'activate' the central corridor so that it better meets the needs of the families of PICU. This concept has received considerable interest across QCH leadership.

Most recently, a group of design students were supported to develop these preliminary concepts into virtual reality as part of workplace-integrated-learning placements. In mid-November the team from QUT returned with another iteration of the Marketplace – this time sharing concept boards and 3D visualisations of the corridor space. Many clinicians and consumers also undertook the full virtual reality tour.

By employing a range of storytelling and engagement strategies, by capturing valuable consumer voices and by creating a meaningful and pragmatic collaboration framework, the Partnership project set the benchmark for the application of design-thinking and design-doing methods in a complex and challenging clinical setting. The HEAL PICU partnership project started as a small engagement but has continued to grow in scale and impact - enhancing experiences for many families with children in intensive care.

Learn more about this project

COMMUNITY

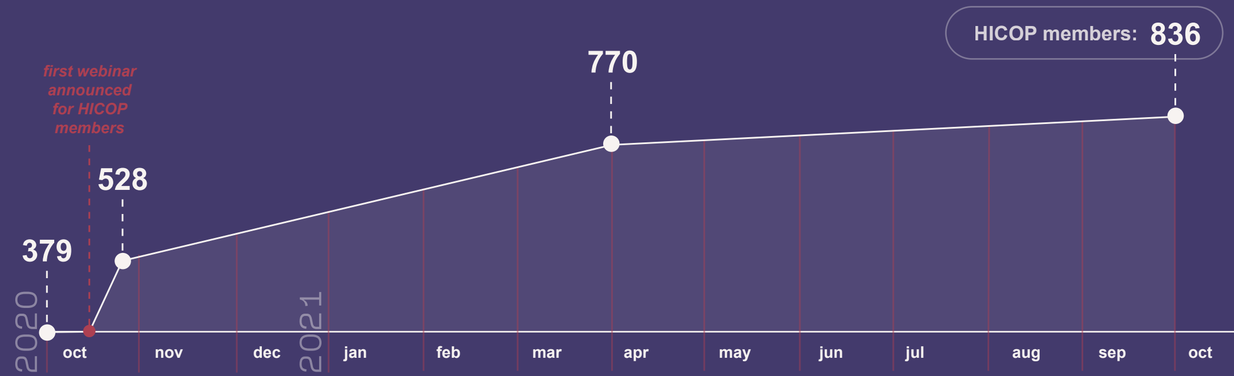
The outflows from the Bridge Labs program have galvanised the Queensland healthcare improvement community in a myriad of ways. The healthcare improvement community of practice (HICOP) was launched in 2019. While the community enjoyed some early interest from improvement practitioners and clinicians, growth in HICOP truly accelerated after the Bridge Labs program began to inject a multitude of learning offerings (such as the human factors webinar series and the safety differently symposium), training opportunities (state-wide workshops in systems human factors methods) and improvement support (partnership opportunities with academic designers). This move coupled with a transition to a primarily virtual model of engagement has witnessed membership double since August 2020, to more than 800 healthcare colleagues at present.

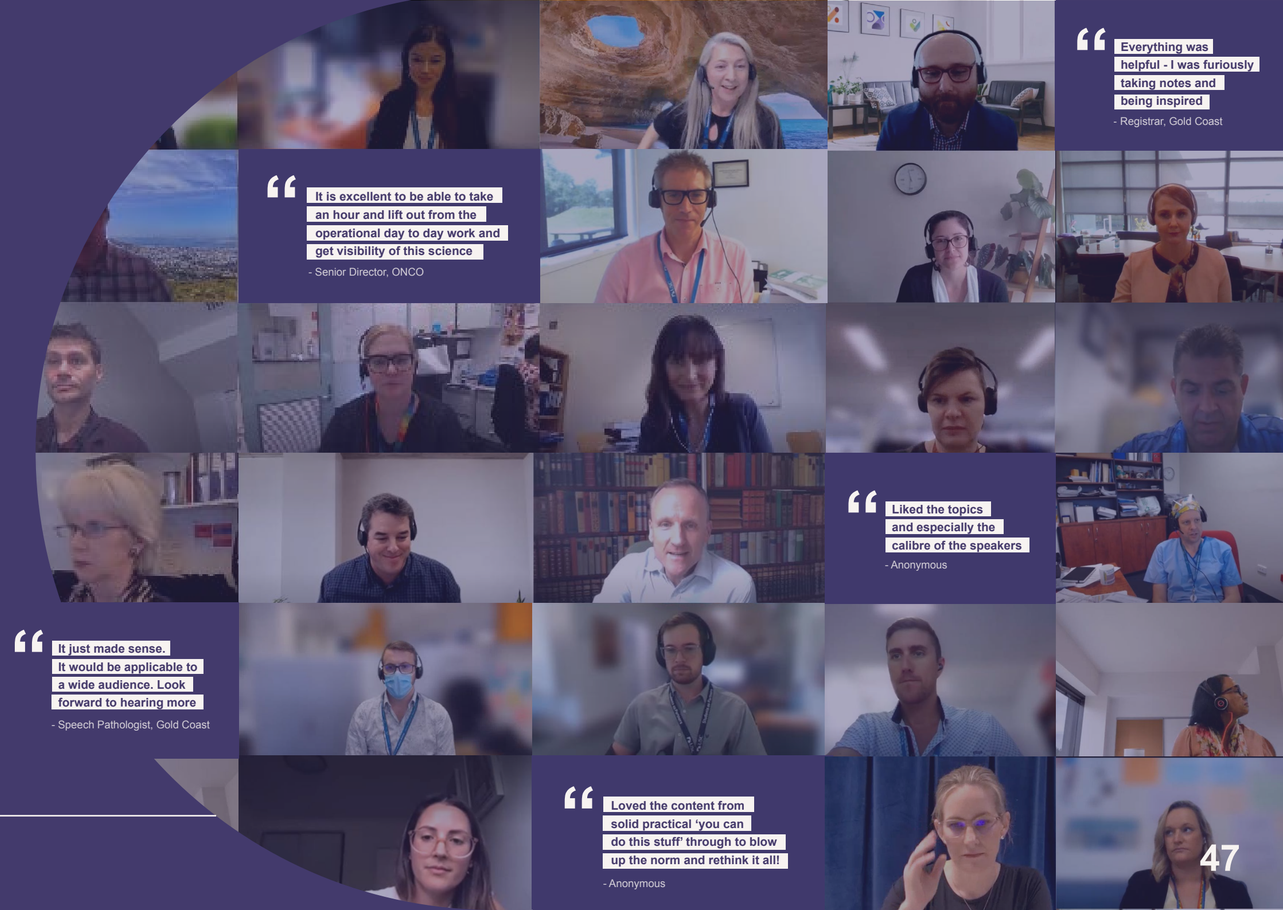
Efforts to grow and enrich the HICOP community throughout the year resulted in:

220% membership

6+ webinars

800+ attendees





COMM UNITY HIGH LIGHTS

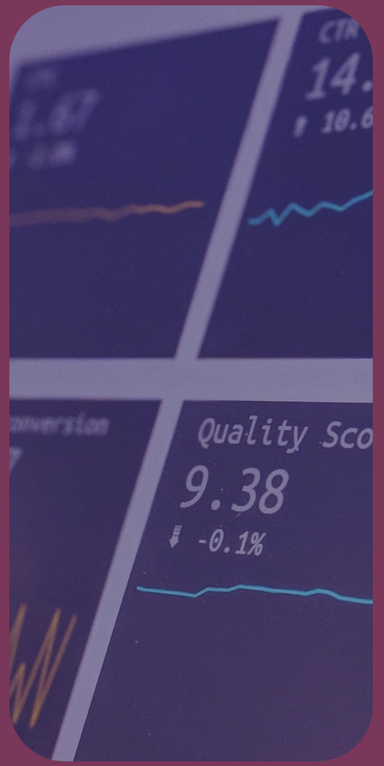
> **Personally, being exposed to new ideas in safety, human factors and design and having a space to discuss and exchange ideas has unlocked a tremendous number of new insights for me. I can see more clearly how we might apply these emerging concepts to the design of more useful and usable metrics and data systems, and how we might create a whole new level of value for clinicians, consumers and other stakeholders within healthcare.**

Ahmed Muhtashim

Data innovation

Ahmed Muhtashim is a clinically trained principal data analyst at the Patient Safety & Quality Unit at West Moreton Health. Ahmed was an early and enthusiastic contributor to the HICOP community and has been a passionate advocate for innovation in quality and safety systems over a career that has spanned many roles in health services across Queensland. Ahmed has become increasingly interested in evolving safety and quality data and metrics in a more user-centric direction. He asks "What do system leaders, quality managers and frontline staff find valuable? What insights are actionable? How might we design our reporting and quality systems with their needs in mind?"

Ahmed saw value in engaging early and widely with the HICOP community during trials of an innovative model for safety and quality improvement (the Vincent Framework) at his health service. After attending several learning events supported by the Bridge Labs, Ahmed has found enthusiasm and support to take his passion for data systems innovation further.



> **It was such an easy process; I made a simple phone call and it just went from there. Because it came from Clinical Excellence Queensland, I didn't have to worry about the governance and the red tape, I could just think about the collaboration and what it could offer our service and how it could benefit patients.**

Jane Harnischfeger

Paediatric Intensive Care

Jane Harnischfeger, a nurse educator at the Queensland Children's Hospital's Paediatric Intensive Care Unit took a different path into the community. Jane applied for the Healthcare Improvement Fellowship programme at Clinical Excellence Queensland in 2020 to progress a vision she shared with the QCH PICU team to advance their many early innovations in creating a more family-focused model of care for young patients. Jane also joined HICOP just as the Bridge Labs program were seeking expressions of interest from clinical teams to work with the QUT design lab to incorporate design-led methods in their work. Jane and the PICU team were selected in our initial tranche of exemplar projects with the Design Lab and this work has been transformative for the team and for Jane personally.

Jane speaks highly of the innovative outcomes that came out of this collaboration, "I wouldn't have even known to look for the solutions that were provided. I wouldn't have known what questions to ask or whom to go to – having these types of supports as a built-in service within Clinical Excellence Queensland provided something I couldn't even imagine and the impact of that has been phenomenal." In 2021, Jane was selected for the healthcare improvement fellowship, and in partnership with colleagues from the QUT Design Lab, the QCH PICU team continues to drive an uncompromising vision for a world-leading, family centred, recovery oriented, model of paediatric intensive care right here in Queensland.

Dr Lynnette Knowles

Patient safety

> **The HIU team have been critical to developing our capability by providing access to experience, coaching and mentoring for the DDH Clinical Governance team - assisting us to move forward to improve safety for our patients, staff and organisation.**

The Bridge Labs have created opportunities for the spread of expertise such that several patient safety and quality teams have accelerated their own innovation journeys. The Clinical Governance Unit at Darling Downs Health, led by Dr Lynnette Knowles, is a prime example. Lynnette, a medical administrator, came into her present role at Darling Downs with some familiarity with new and emerging approaches in patient safety, having worked alongside leading experts in the resilient healthcare movement while in Townsville. Lynnette and the Patient Safety team saw the huge potential on offer via HICOP and the Bridge Labs - and the team has take up every learning and partnership opportunity with both hands – all the while making concerted attempts to shift practice from a compliance-focused model to a more adaptive, systems-oriented model. By attending methods workshops offered by Bridge Labs and by proactively seeking support from our academic network, they have set up trials of new approaches in incident investigation and learning, in conducting appreciative explorations of everyday clinical work (and its role in creating safety in operations) and in drawing more deeply from the available body of human factors knowledge to inform system improvement.

Tobias Ford

Worker safety and Wellbeing

Tobias Ford is a senior health, safety and wellbeing consultant at Metro South Health and Hospital Service (MSHHS) and represents a small but active contingent of workplace health, safety and well-being practitioners within HICOP.

For Tobias, attending the presentations from Griffith University's Safety Science Innovation Lab (one of our Bridge Labs partners) set him on new path in his professional practice. Tobias has found much ongoing value in being active in HICOP and tapping into the expertise the Bridge Labs have brought into the mix. He says:

> **When I was relatively new to Metro South Health, I was trawling through our intranet looking for information and I came across a line in the 'what's new?' spotlight advertising a series of lectures with Sidney Dekker and Drew Rae from the Griffith Safety improvement lab. That seemed interesting and relevant, so I applied to attend and was really blown away by what I heard. The content resonated with me, so much so that after the final lecture I applied to Griffith University to start a Graduate Certificate in Safety Leadership – I needed to know more. Being curious in that moment, has again opened doors and expanded my thinking. significantly.**

> **What I've found most rewarding about being part of HICOP is the community element. It has been valuable to bounce off of the expertise present within the community. I think the way it has helped my work the most was through exposure to Safety II, and a Human Factors approach. When I look back at my own work over the last year and read the content I was writing before being introduced to HICOP, there is a definite journey of growth and what I am producing now is objectively better.**
>
> **HICOP is valuable to other people in the health, safety and wellbeing space as we come from a wealth of lived experience, and all walks of life. Having a community that appreciates contemporary theory and expands how we think about problems and solutions – provides a common language. This is extremely valuable in delivering a consistent approach to health, safety and wellbeing for the Health service.**

Kate Weller

Paediatric Sepsis

Kate Weller manages the Queensland Paediatric Sepsis Program and found novel insights in the systems safety and improvement concepts advocated by the Griffith University Safety Science Innovation Lab and the USC Centre for Human Factors and Sociotechnical Systems. Kate and colleagues attended the Systems Analysis methods workshops with HF-STS and have since conceptualised a project to re-analyse key serious harm events related to paediatric sepsis using systemic analysis tools like Accimap and STAMP-CAST. The Queensland Paediatric Sepsis Program is also undertaking a collaborative research study with Dr Drew Rae (at the SSIL) involving ethnographic investigations of everyday clinical work to better understand the context under which sepsis is detected and managed by clinicians.

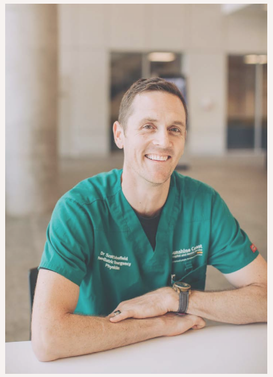
Kate has been instrumental in introducing a 'systems' emphasis in the recently developed QPSP roadmap and regards the help from the Bridge Labs as an important contributor to the evolution of their program.

> **The Bridge Labs program has come at a very fortunate time for the Queensland Paediatric Sepsis Program. There is growing recognition that deeper systems-level issues are challenging the paediatric sepsis pathway and we need to understand how we can design clinician support tools to meet the needs of clinicians. This partnership has been instrumental in linking us with leading researchers in safety innovation and human factors science. We have used this knowledge and expertise to better understand the real complexities of sepsis management and design a more resilient program.**

Dr Scott Schofield

Emergency Care

Some members of the HICOP community have successfully woven multiple Bridge labs partnership into their healthcare improvement practice. Dr Scott Schofield, a Paediatric Emergency Physician at the Sunshine Coast University Hospital and 2019 Healthcare Improvement Fellow, has been tireless in his efforts to advance a quality and safety innovation agenda in emergency medicine within his health service. Scott forged early connections across two of our Bridge Labs. In collaboration with Dr Lindy Burton, an architect and academic from the QUT Design Lab, Scott undertook a conceptual design project to create a more welcoming and healing oriented space in the paediatric emergency waiting area at the Sunshine Coast University Hospital.



In parallel, he collaborated with the Centre for Human Factors and Sociotechnical Systems at USC, Scott piloted a systems human factors approach in a recent morbidity review that he led after a clinical incident. Scott was able to undertake training in the Accimap tool that he used in the review through methods workshops supported by the HF-NET Bridge Lab. Scott recently presented to HICOP on his positive experiences with the tool and has been actively giving back to the community through advice and mentorship of junior clinician improvers.

This small sample of stories highlight the diverse range of frontline-led and -focused outcomes that are being realised by individuals and teams in their unique journeys to transform services and care for their consumers. The support we have offered our clinical improvement community via the Bridge Labs, whether it has been through the delivery of high-quality learning events and methods workshops, providing expert advisory or through project-level support, are all contributing to a growing movement of wide-spread, inclusive, and locally relevant healthcare innovation in Queensland.

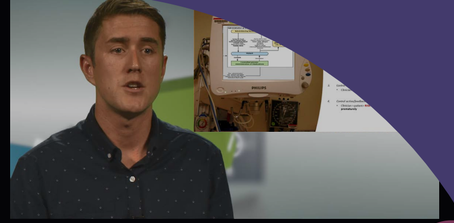
CAPABILITY

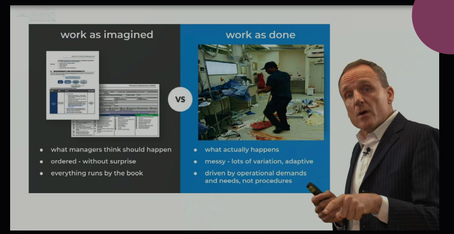
The Bridge Labs have intentionally invested time and resources into capacity building with our improvement community. Our linkage with the HF-STS (via HF-NET) and with the Griffith Safety Science Innovation Lab (via SIBL) saw us host six webinars in human factors science, and four on safety science respectively with 814 colleagues attending across these ten sessions in our inaugural year. Our statewide workshop series on system analysis methods were led by the team from HF-STS and were held at Gold Coast, the Sunshine Coast, Townsville and Brisbane and attended by over sixty clinicians.

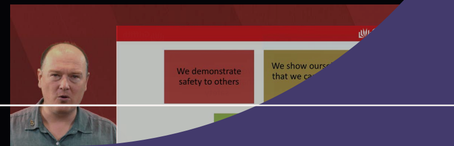
Workshops

HEAL — **Healthcare design thinking workshop**

The team from the QUT Design Lab co-designed a healthcare design thinking workshop with the 2020 cohort of the healthcare improvement fellowship and again delivered this workshop for CEQ colleagues in May 2021.





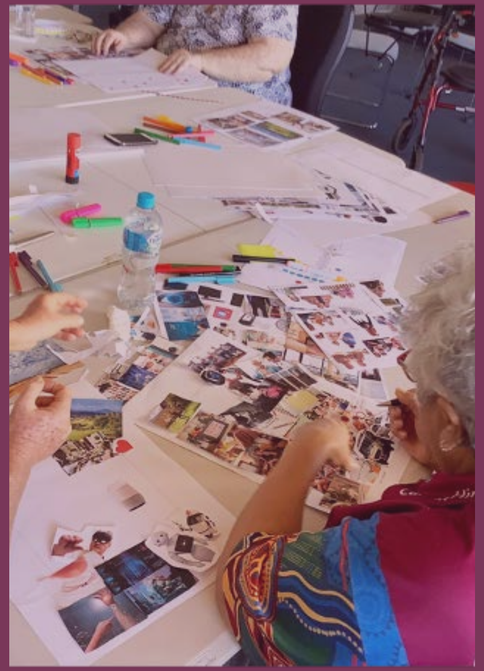


Short courses

The Bridge labs partnerships have also yielded three world-class short courses from our partners to advance the capabilities of our improvement workforce.

We are excited that these will be available shortly across the state and at no cost to Queensland Health colleagues and substantially benefit our colleagues and their efforts to improve healthcare.

HEAL	**Design thinking for Healthcare Professionals**
SIBL	**Safety science**
HF-NET	**Introductory program on human factors for healthcare professionals**



> Collaborating with Bridge Labs to help co-design VOICeD model with our patients and consumers led to us being the recipient of Clinical Excellence Queensland 2021 Consumers Choice Award... it's as simple as that!

Gaurav Puri

Dr Gaurav Puri is the Clinical Director of Endocrinology at Logan Hospital and the Chair of the Statewide Diabetes Clinical Network

> The Bridge Lab program provided West Moreton Health staff with the space and opportunity to creatively review their approach to developing communications, supporting transformational change in the Rehabilitation service. This is definitely something I would recommend to other healthcare improvement teams, or clinicians rolling out organisational change.

Therese Hayes

Therese Hayes is the A/Executive Director of Nursing and Midwifery at West Moreton Health

NEXT STEPS

Since our inaugural year, the Bridge Labs team have...

Events

Hosted and presented at a number of events to celebrate the success of our inaugural year and shape our focus for the years to come.

Linkages

Created new linkages between academics and healthcare professionals in areas of need.

Projects

Continued to seek new opportunities to expand our impact and embark on projects of larger scope and scale.

Grants

Submitted and were awarded several competitive grants aimed at scaling up healthcare improvement research.

Design Fellowship

Welcomed our first Experience Design Fellow to the team to explore embedded opportunities.

Awards

Received multiple awards in recognition of our contribution to design and building partnerships.

SINCE THEN

Follow the stand-out moments along our journey from the inaugural year of the Bridge Labs to today

April 2021

EVENT

Bridge Lab Leaders Forum

In April 2021, we had the privilege of hosting a leaders forum during the HEAL Bridge Lab Showcase event at QUT Kelvin Grove.

This session, led by Dr Jillann Farmer (Deputy Director General, CEQ), was attended by senior leadership from Clinical Excellence Queensland, executive and clinical leaders from several health services that partnered in the first round of HEAL projects, senior academic leaders from QUT and representatives from Health Consumers Queensland. The discussion allowed health system leaders in Queensland to shape the focus for the second year of the Bridge Labs program, reflecting on the program's successes and strengths and emerging opportunities and threats.

June 2021

PROJECT

Prisoner Health Medical Request Redesign project

Dr Graham Kraak, the Director of the Office of Prisoner Health and Wellbeing, attended the HEAL showcase and subsequent leaders' forum. Graham saw the potential in engaging with HEAL to redesign the process through which prisoners request medical care in Queensland, to allow the system to be more responsive to prisoners' health needs. This project is characteristic of a key HEAL 2.0 priority - to undertake fewer projects that are of larger scope and scale, and to be involved from end-to-end (conceptualisation to closure). The Prisoner Health Medical Request Redesign project – a collaboration between HEAL, key HIU staff, Capricornia Correctional Centre, Health Consumers Queensland and the Office for Prisoner Health – is a novel initiative, pioneering the application and refinement of codesign methods with stakeholders (prison inmates and staff) within the correctional system.

June 2021

GRANT

Avant Foundation grant

The Bridge Labs program supported Dr Rebecca James (2020 healthcare improvement fellow and Paediatric Rheumatologist) in her successful $80,000 bid to the Avant Foundation to reimagine (using codesign methods and working with HEAL designers) the consumer and family experience within the first 100 days after diagnosis with Juvenile Idiopathic Arthritis. This important piece of work at the Queensland Children's Hospital will provide insights and novel tools to codesign services with younger consumers that could transform how paediatric services are conceptualised, delivered and further iterated upon within Queensland. Rebecca's work has gained visibility within QCH and by the Royal Children's Foundation which provided Rebecca with a further Working Wonders grant to fund part of her time towards leading this innovation program.

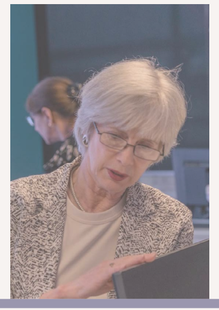
July 2021

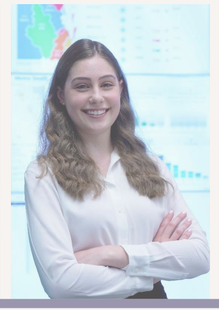
LINKAGE

University of Queensland's Cognitive Engineering Research Group

In line with our core commitment to developing academic linkages in areas of need, the Bridge Labs engaged with Professor Penelope Sanderson from the University of Queensland's Cognitive Engineering Research Group to lead a small exploratory project looking at the intersections between cognitive systems engineering (a branch of human factors science) and the design of healthcare coordination centres and hubs, after a very successful three month industry experience placement of Prof Sanderson's PhD student, Jelena Zestic at the Metro North Patient Access Coordination Hub (PACH) in 2020.

Professor Sanderson, who holds an appointment as Professor of Cognitive Engineering and Human Factors (joint appointment across the School of Psychology, School of ITEE, and the UQ School of Clinical Medicine), is a leading expert in the field of cognitive systems engineering and human factors in healthcare and with considerable experience in the design of control centres and decision support systems in and outside of healthcare. The project is co-led by Dr Estrella Patterson, a post-doctoral researcher in human factors at UQ.



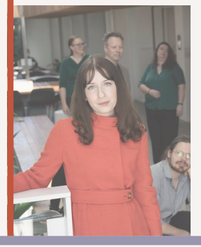


July 2021

DESIGN FELLOWSHIP

Commencement of our first Experience Design Fellow

This year we have also had the privilege of welcoming our first 'experience design fellow', embedded in HIU for a period of twelve months. Jessica Cheers had participated in the first year of the HEAL bridge lab as a design intern while pursuing her PhD in experience design through QUT. Jess made a significant positive impact on the programs she worked with (VOICED, Stroke clinical network, the palliative care network, and the Cancer Wellness Portal project with the Princess Alexandra Hospital). We were keen to explore how and where talented design practitioners like Jess could bring additional value to statewide improvement priorities and established a design fellowship through HEAL. Jess commenced with HIU in June 2021 and you can read more about her early experiences as a healthcare experience design fellow in her interview at the end of this report.



October 2021

AWARD

Good Design Award

In 2021, the HEAL partnership won a prestigious Good Design Australia award in two categories - in 'Service Design' and in 'Social Impact'. The submission 'The Healthcare Excellence AcceLerator (HEAL) project - embedding designers into Health' was praised for "design methods applied at scale in Health" and as a "really impressive example & a standout project". The Australia Good Design Awards are Australia's longest running design recognition program and widely regarded as a top honour in the industry.

GOOD DESIGN AWARD® WINNER

October 2021

AWARD

QUT Vice-Chancellor's Award for Partnership and Engagement Excellence

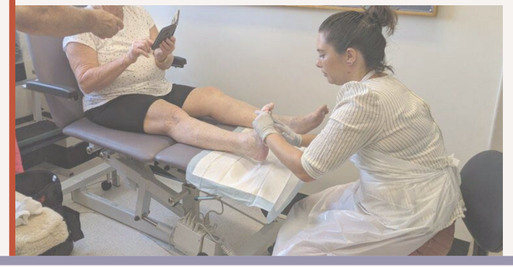
The HEAL partnership was awarded a Vice-Chancellor's Award in Partnership and Engagement Excellence for their work in developing design-led methods that tackle real-world healthcare challenges.

November 2021

GRANT

Cooperative Research Centres Projects Grant

The QUT Design Lab team and iOrthotics Pty Ltd (QLD) were part of a team awarded a grant of $2,044,034 through the Cooperative Research Centres Projects (CRC-P) Grants to advance the manufacturing of smart orthotics to reduce diabetes related amputations. Emerging from the HEAL Bridge Lab, this project explores the complex challenges in assessment and prescription of orthotics for remote consumers with diabetic feet, using advanced manufacturing and industry 4.0 technologies for the development of smart orthotics.



November 2021

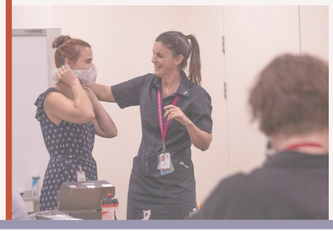
PROJECT

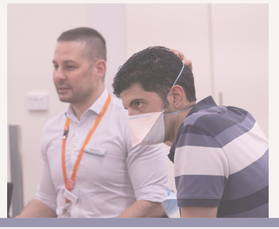
Design guidelines for more comfortable Personal Protective Equipment (PPE)

During the COVID-19 pandemic, the increased use of personal protective equipment (PPE) in healthcare settings has been globally recognised as a contributor to wearer discomfort and other negative impacts. Due to the local need for action around the problem, the Queensland Government made an election commitment to investigate the issue and to implement suitable strategies. To progress this priority, the CEQ Healthcare Improvement Unit commissioned a project via the HEAL Bridge Lab to develop design guidelines for more comfortable PPE with the intent to inform procurement and innovation. Industrial designers Assoc Prof Marianella Chamorro-Koc, Dr Rafael Gomez and Ms Erina Wannenburg are leading this project from the QUT Design Lab. They have been leading design innovation research in healthcare PPE through HEAL, so this project represented a natural extension of their work.

In the current project, we have surveyed over 600 healthcare colleagues to study the influence and impacts of personal protective equipment (PPE) and opportunities for improvement, especially respirators and face masks. The information was used to design a recently completed focus group with frontline healthcare workers to generate data that will be translated into final design guidelines for more comfortable PPE.

This will assist manufacturers optimise PPE options in line with the emerging evidence and allow health systems to be better informed when procuring PPE.





A designer's lens

An interview with our inaugural Design Fellow Jessica Cheers

Tell us a little about yourself

By way of profession I'm an experience designer, design educator and researcher. By way of enthusiasm I'm all of the above, coupled with a love for play, preventative healthcare, making things and untangling wicked problems. My brain is equal parts excel spreadsheet and children's finger painting, which might explain why I feel right at home at the intersection of healthcare and design. For the past few years I've explored creative methods of engaging consumers and clinicians in the co-design of healthcare products, services and systems. I love being involved from end-to-end – capturing lived experience, generating shared ideas and translating them into meaningful, sustainable and *delightful* healthcare experiences.

What was your first project within healthcare and how did that come about?

In 2016 I had a design degree to my name and was freelancing as a graphic designer. At the time, if anyone asked me what I did for work, I would say "*well*, I make things look pretty". I was teaching design at QUT and my enthusiasm for design was growing, but my passion for my own work was waning. Around this time I was approached by a research team within QUT Design Lab – they were developing a digital wellbeing toolkit with Kids Helpline and needed a designer. Weeks later I was unexpectedly thrust into a confronting and humbling two-year crash course in co-design – waiting months for ethics approval, facilitating my first co-design workshops, navigating multidisciplinary teams and nervously presenting outcomes developed with 30 young people to higher-ups. By the end of the project I was utterly convinced that the most logical and meaningful way to design a product or system with any level of complexity was to take end-users on the journey with you. At the same time, I was deeply frustrated by some of the barriers we faced and fumbles I'd made – I wanted to dig deeper into the kind of methods that could support and inspire rich, democratic, creative collaboration but also result in usable and sustainable outcomes. For the last five-or-so years I've dived deeper into this space, working across various healthcare contexts and exploring creative collaborative methods through my research.

What are you working on through the fellowship?

At the start of the fellowship there were some loose ends to be tied off the back of HEAL's inaugural year – for example finishing the development of a Project Management ecosystem for CEQ. As a continuation of the VOICeD project, I travelled to Rockhampton to explore how our telehealth model might bring value to contexts within Central Queensland HHS. I also developed visuals for Specialist Palliative Care in Aged Care (SPACE), the Telehealth Strategy, the Statewide Risk Stratification and Management Plan for Children with COVID-19, and the report you're reading right now. The first co-design piece to emerge centred around improving the 'First 100 Days' of treatment and care for children diagnosed with Juvenile Idiopathic Arthritis and their families. I'm currently working directly with the rheumatology team at QCH, interviewing families and designing methods to capture their stories. Although we are only in the early stages, this has been such an affecting project, as well as a fantastic opportunity to unleash my passion for play – to better understand the experience of families we're designing "cultural probes", which are packages sent to their home with self-documentation tools like disposable cameras, diaries and activities. To continue the discussion of similarly creative and playful collaborative methods in healthcare I presented a webinar at HICOP, introducing methods borrowed from the world of design. There are several other projects in the works and rich conversations being had as we continue to explore, uncovering the barriers and opportunities to embedding designers in healthcare.

You're now a veteran of several pieces of work in healthcare, could you reflect on the journey to this point, what you've come to learn, assumptions that have been challenged or peculiarities of doing design work in healthcare?

I've made many mistakes and had just as many humbling learning experiences in healthcare. Being a part of HICOP and speaking to healthcare professionals of all varieties who are equally passionate about co-design has been infinitely inspiring – there are plenty of movers and shakers who are working to break beyond the buzzwords. However, there is still so much work to be done. To embark on a "true" co-design process requires a level of ambiguity that can be tricky to achieve, both personally and when convincing anyone to fund, lead or follow a project when the outcomes read "we don't know yet!". However, I've learned over and over again the importance of refraining from defining the "thing" you're designing until you've intimately explored the problem space. Assuming, for example, that an e-health tool is the solution to a problem without first engaging with the day-to-day needs of diverse consumers and clinicians might result in an expensive, tech-heavy and high-maintenance solution when a paper-based resource (or no resource at all!) could have been equally (or more) impactful. This exploratory approach has not been very compatible with previous models of healthcare improvement, however the Bridge Labs are a glaring testament to the fact that change is happening.

I had many preconceived ideas and hesitations around working in healthcare, especially in an embedded role. Earlier in my career I can't say I pictured myself working 9-5 in a government office – I imagined following rigid style guides and feeling that I was moving further and further away from having my finger on the pulse of contemporary design. It was not something I would have considered had I not experienced so many breadcrumb moments leading up to this role – coming into complex healthcare contexts that I knew nothing about and using design methods to untangle them from every angle. While some of preconceptions have rung true, they are far outweighed by the impact of the work. If done thoughtfully and collaboratively, I've learned that design can improve the experience of people going through some of the most emotionally affecting moments of their lives, shaping the way they view their condition and quality of life. While many healthcare professionals are already engaging with healthcare improvement in this way, I feel there's a role for designers in crafting *experiences* – whether it's a creative method of capturing lived experience, a visual approach to telling patient stories or the design of usable and delightful healthcare experiences that authentically represent the needs and ideas of their users.

What excites you most of the future of design in healthcare and areas where you think designers like yourself can create transformative services and experiences?

The picture painted of healthcare innovation that's slick, high-tech and streamlined doesn't excite me. What excites me is the opportunity to get the basics right – to take a step back, ask the right questions, build communities, and look for those low-cost, bottom-up, human-led interventions that – over time – lead to real cultural change. There's a time and a place for an app, however the oversaturated e-health market has a lot to answer for with many solutions that look good on paper but end up expensive, underused, difficult to maintain, buggy, frustrating to clinicians and inaccessible for those with low digital literacy. I hope that by asking the big Why's up front, designers can work with health professionals to create experiences that leave a long-lasting practical and emotional impact.

“You can’t connect the dots looking forward; you can only connect them looking back. So you have to trust that the dots will somehow connect in your future. You have to trust in something — your gut, destiny, life, karma, whatever. This approach has never let me down, and it has made all the difference in my life.”

– Steve Jobs

What’s next

The Bridge Labs story is an evolving one but we have many reasons to look forward with optimism. We are demonstrating the validity of a different mindset when approaching healthcare improvement - one founded in collaboration and empowerment. We are hopeful that many of the linkages we have catalysed between academic and frontline teams will mature into long-term research and innovation partnerships. Our model of innovation is drawing in a critical mass of healthcare colleagues with the passion, energy and expertise to drive transformative change. What started as an experiment is now looking increasingly like a grassroots innovation movement - clinicians, consumers and system leaders partnering with groups of experts in moving our health system towards a more humanistic, high quality, safe and equitable future.

Still, the next step will be critical - as we try to understand what sustainable growth looks like for us. How much capacity and internal skills do we need to develop to meet the escalating demands for support? What services must we build to partner effectively on Queensland’s path to healthcare excellence? How do we stay true to our DNA as we grow? Where might we focus our efforts to bring the greatest value? These are important questions for us, but we cannot answer these questions in a vacuum. So these are also questions for you - our partners on this journey.

In the coming year, we will bring our colleagues and collaborators together to co-design the future of this program. We would love to hear from you. Maybe there is something that caught your interest, perhaps you have a need that we could help with, maybe you could help us! Even if it’s nothing more than a ‘sense’ that a connection could prove interesting, do reach out - we trust the dots will connect looking back.

Thank you for taking the time to engage with our year in review.
Happy innovating.

Satyan

Satyan Chari, PhD | *Program Director*

PHILIPS
Standby

Join the conversation on social media

ClinicalExcellenceQueensland clinexcelqld clinexcelqld

#ExcellenceMatters

clinical**excellence**.qld.gov.au

Queensland Government