



# **TAKING ONLINE INTERVENTIONS TO THE NEXT LEVEL WITH IMPLEMENTATION SCIENCE SYMPOSIUM**

**A Focus on Paediatric and Adolescent Oncology**

TUESDAY 22 MAY 2018

9:00AM - 12:30PM

THE BRIGHT ALLIANCE BUILDING,  
RANDWICK







# Acknowledgement of Country

Professor Glenn Marshall AM





# Welcome

Professor Glenn Marshall AM





# Kids Cancer Alliance

**Sydney Children's Hospitals Network**

**John Hunter Children's Hospital**

**Children's Cancer Institute**

**Children's Medical Research Institute**

**Kids Research Institute**

**University of NSW**

**University of Sydney**







# Child Cancer in Australia

- Each year almost 2,000 children, adolescents and young adults are diagnosed.
- 20% will relapse and most will die of their disease.
- Families still travel overseas for experimental therapy after relapse.
- Most successful cancer therapy consists of old drugs with high toxicity, needing expensive supportive care.







# Child Cancer in Australia

- Each child cancer centre performs 20-25% of the work at our 8 children's hospitals each day.
- Cause of child cancer is partly germline genetics and partly pre- and post-natal environment.
- 20,000 young adult survivors, of whom 1/3 will have a serious ongoing health problem.
- Most survivors are lost to follow-up.
- Rural kids have prolonged stays in city centres.
- 10% of inpatients suffer mortality or severe morbidity from an error/variation in normal practice.







- **95% of children with cancer are treated at one of three clinical centres (SCH, CHW, JHH)**
- **60% of patients treated on a trial, some more than one.**
- **Integration into national and international clinical trials networks.**
- **Trials are rarely industry sponsored.**
- **Rapid adoption of new diagnostics and therapies.**
- **30 year history of biobanking tumor tissues, germline DNA.**
- **30 year history of multidisciplinary team meetings and care.**







## **KCA Flagships Research Programs**

- (i) Improving models of child cancer care**
- (ii) Treatment of high risk child cancer**
- (iii) Monitoring and preventing treatment side-effects**
- (iv) Prevention of child cancer.**







## KCA Spending

- **Infrastructure: 60%**
  - Bioinformatics
  - Clinical Trials
  - Pharmacokinetics
  - Biobanking (at diagnosis, germline, liquid biopsy, CCS)
- **Research Grants:**
  - New Projects: 2-3 per year. 100K/yr for 2 years.
  - Commissioned Research.
- **Education:**
  - Conferences, workshops
- **Training:**
  - Grant writing
  - Travel, PhD and Top-up scholarships.
  - Career directions.
- **Leveraging 10:1.**







## KCA Implementation Research Projects

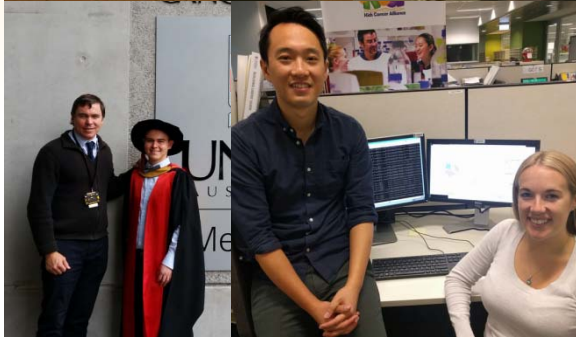
- Impact of electronic clinical systems on clinical safety and workload in oncology.
- Model of care for fertility preservation in children and AYA.
- Prevention of abnormal body composition, including obesity, and associated comorbidities in CCS
- Improving the management of the febrile child with cancer in rural share care clinical centres.
- A decision aid for parents of a child who has relapsed.







Premier's Awards success for KCA







# Consumerism, Data, Mobility; Changing Health Expectations

Associate Professor Cheryl McCullagh

#IMPSCI  
COMMUNITY  
OF PRACTICE

KIDS  
CANCER  
CENTRE  
SYDNEY CHILDREN'S HOSPITAL

K  
Kids Can





The Sydney  
children's  
Hospitals Network

care, advocacy, research, education



MEMORY  
The Sydney children's Hospitals Network

**Consumerism, data, mobility; changing health expectations**

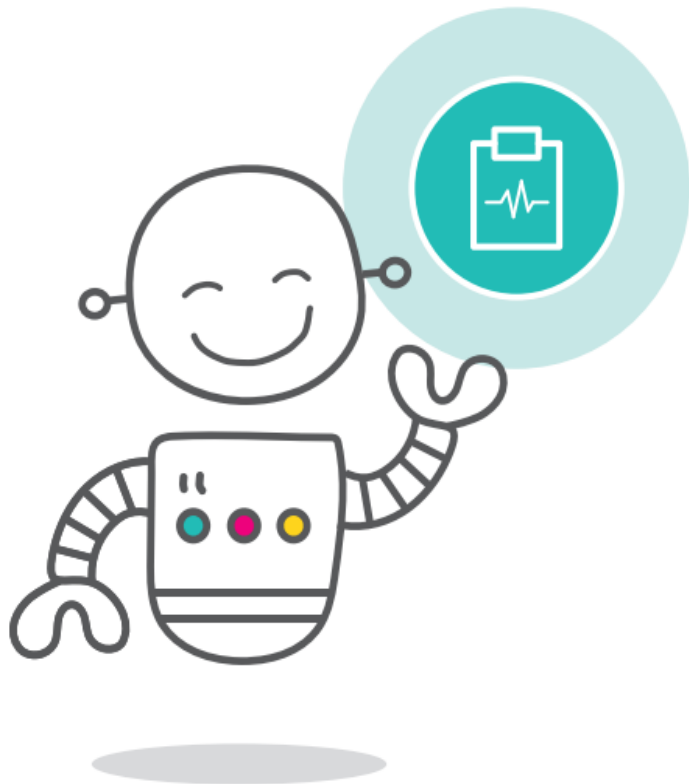


# A health record for life



Sydney Children's Hospitals Network aims to create the safest possible environment for children and the best health care experiences for families.

To meet these aims Sydney Children's Hospitals Network has been working on the digital transformation for more than 20 years.



While we have developed components of the program to improve the model of care within the hospitals, we have also recognised the need to connect with patients when they aren't in the hospital.

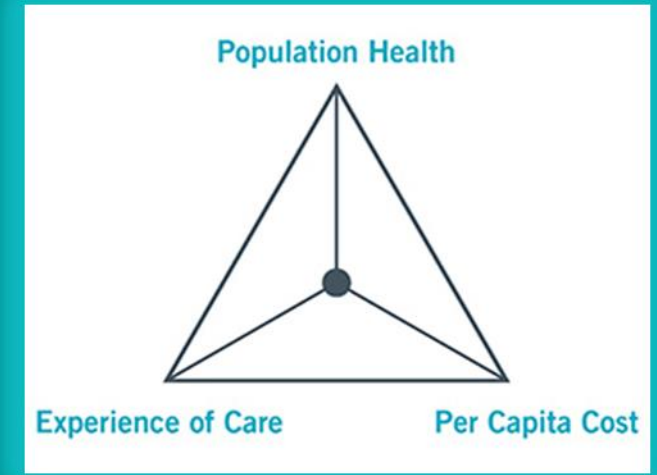
**The vision of helping children live their best lives' underpins our clinical integration strategy.**



## Strategic Directions shift

**SCHN will adopt leading ICT systems and support models to enhance care, support excellent information governance, and provide user experiences that exceed expectations**

- Growing community participation will be supported
- Transformation of the health system will be in partnership with patients and families
- SCHN will responsibly acknowledge ICT system growth





# Data access is improving our options for Quality, safety, audit, reporting, improvement and research

- Clinical outcome reporting
- Survey, audit and surveillance
- Care that changes in response to condition
- Predictive Clinical Analytics
- Real time research
- Real time coding, counting



Preparing for the future...

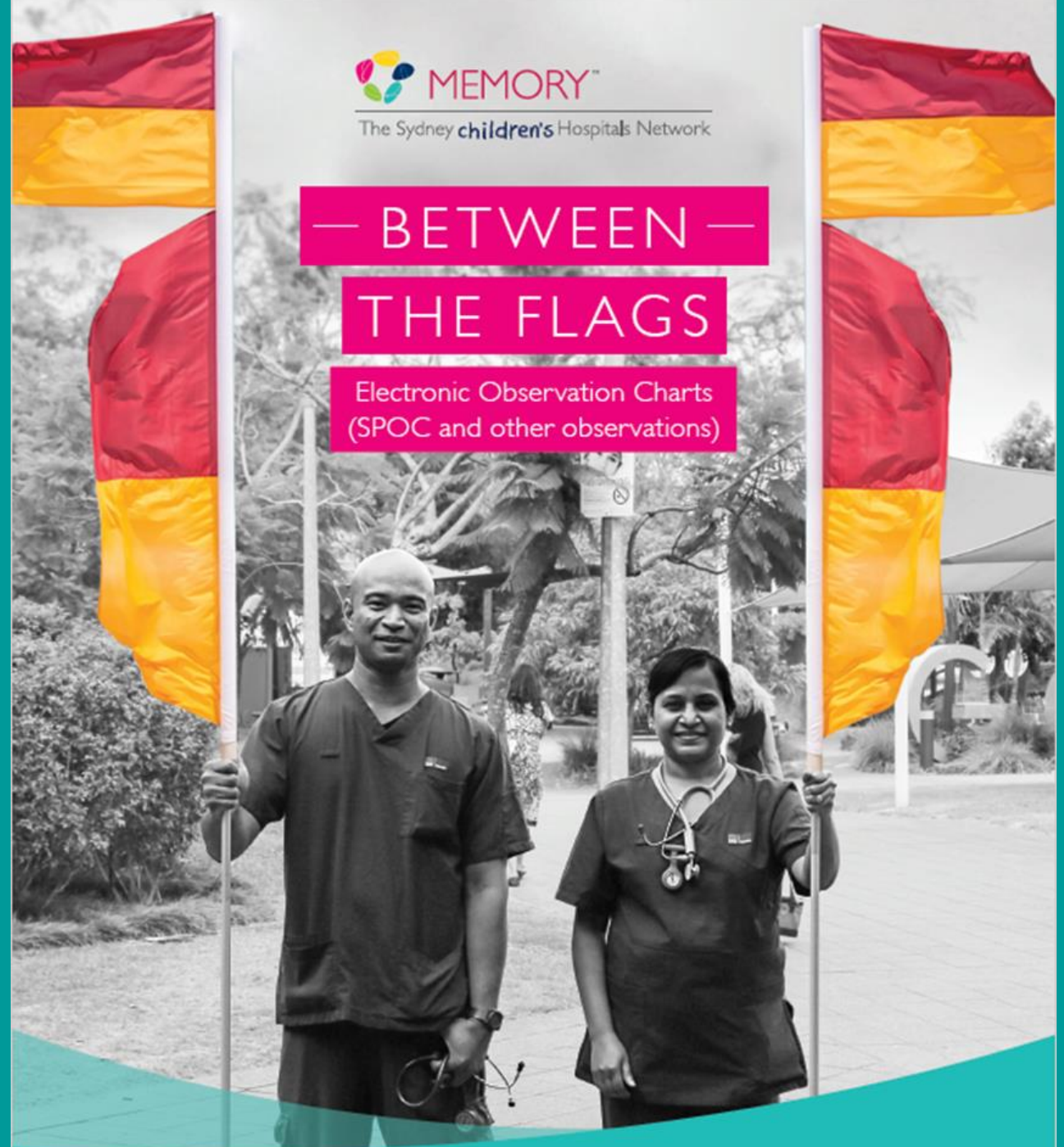




- ✓ Communication
- ✓ Analytics
- ✓ Transformation



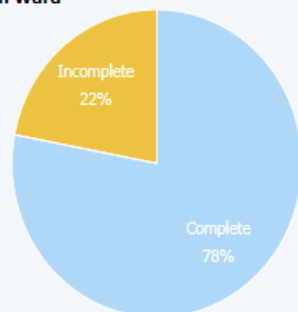
- Converting a paper process to electronic
- One example of creating a safety net with EMR content.
- Prompt to behave according to best practice
- BTF added to the EMR across the network.





## Admission Assessment Complete

Current Status: Camperdown Ward

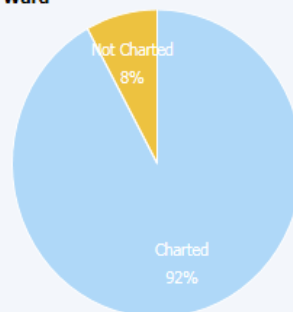


Ward

Hospital

## Allergy Charted

Current Status: Camperdown Ward



Ward

Hospital

## Incomplete Discharge Summaries

Lists discharged patients only. AMO's, Wards, and Medical Services without incomplete discharges are not listed in drop-down filters

Lookback Range: 7 Days

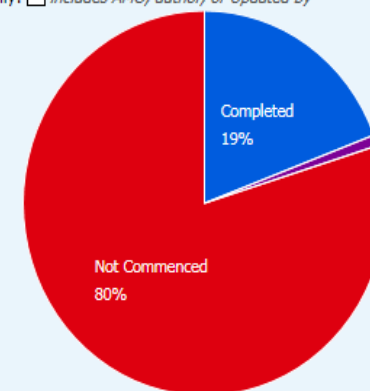
Facility: CHW

Ward: All

Medical Service: All

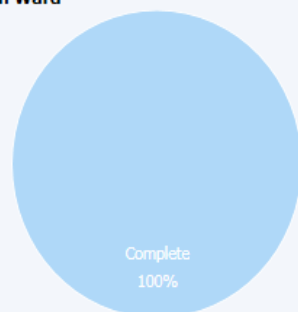
Attending Medical Officer: All

My records only: ☐ includes AMO, author, or Updated by



## Weight Complete

Current Status: Camperdown Ward

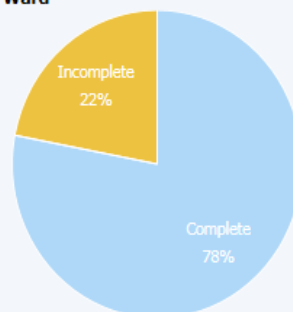


Ward

Hospital

## Height Complete

Current Status: Camperdown Ward

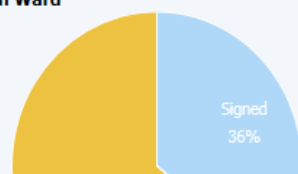


Ward

Hospital

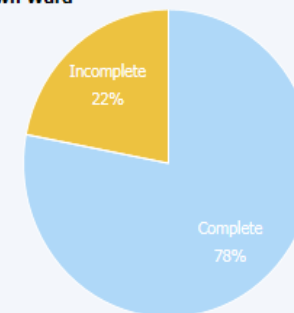
## Unsigned

Current Status: Camperdown Ward



## Nutrition Screening Complete

Current Status: Camperdown Ward



Ward

Hospital





Standard  
Reports



Adhoc  
Reporting



Dashboards



Strategic  
Direction



Risk  
Management



Resources &  
Tools

September 26, 2017

**Inpatient Bed Usage**  
**Activity** dashboard is  
[here](#). Have a look at  
how your ward is going.



Search



## Quick Links

[ABM Portal](#)

[ABF NWAU Actual vs. Target](#)

[ADHOC Report Request Form](#)

[CHW Emergency ETP](#)

[SCHN Wait List](#)

[Contact Us](#)

 There are currently 2078 patients on the SCH Wait List.



# Inpatients as at Feb 2016

Updated: 22/03/16 14:10

DASHBOARD

ACTIVITY

FORECAST

WHAT IF

DETAILS

Activity

Length of Stay

Avg Length of Stay

Cost

## TOTAL ACTIVITY (MTD)

4,238

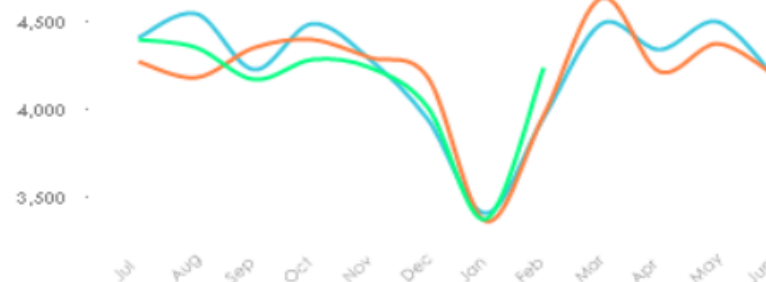


59.1%  
2,503

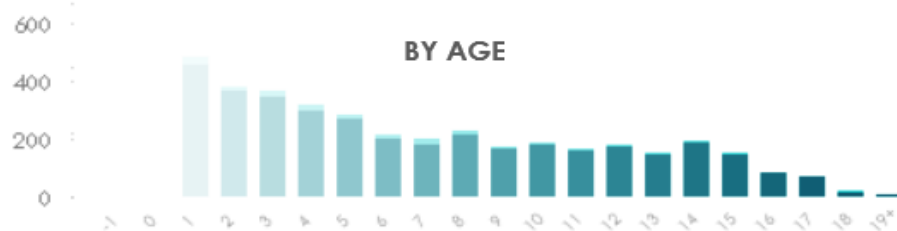


40.9%  
1,735

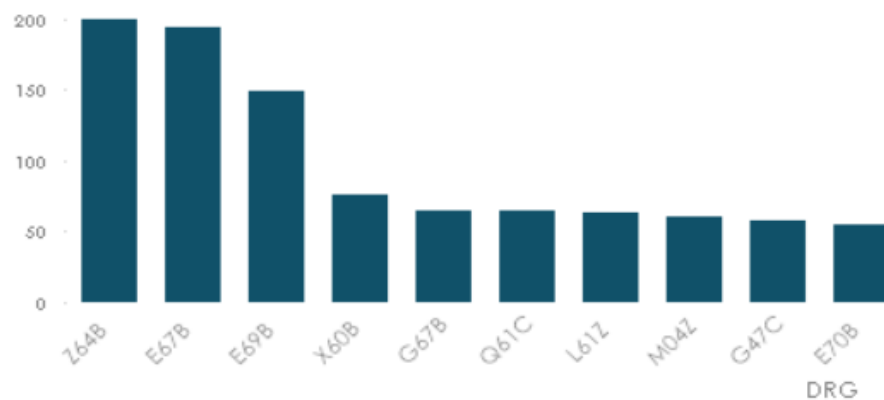
15-16 14-15 13-14



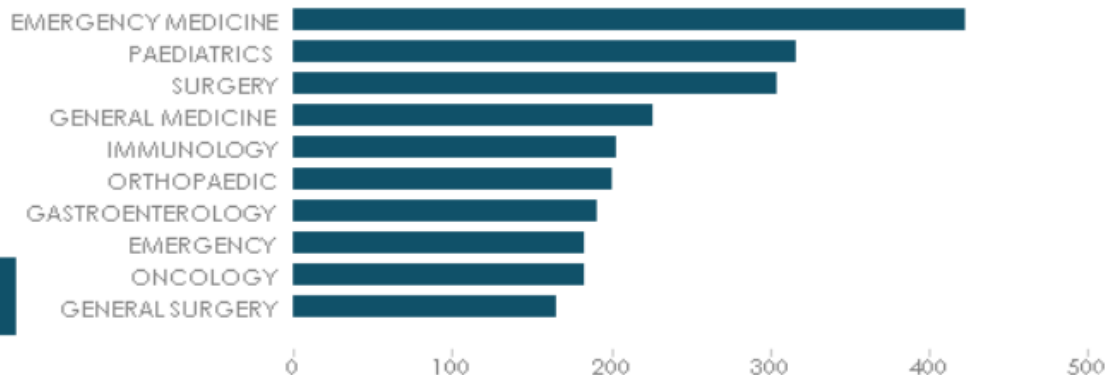
## BY AGE



## TOTAL ACTIVITY BY TOP 10 DRG

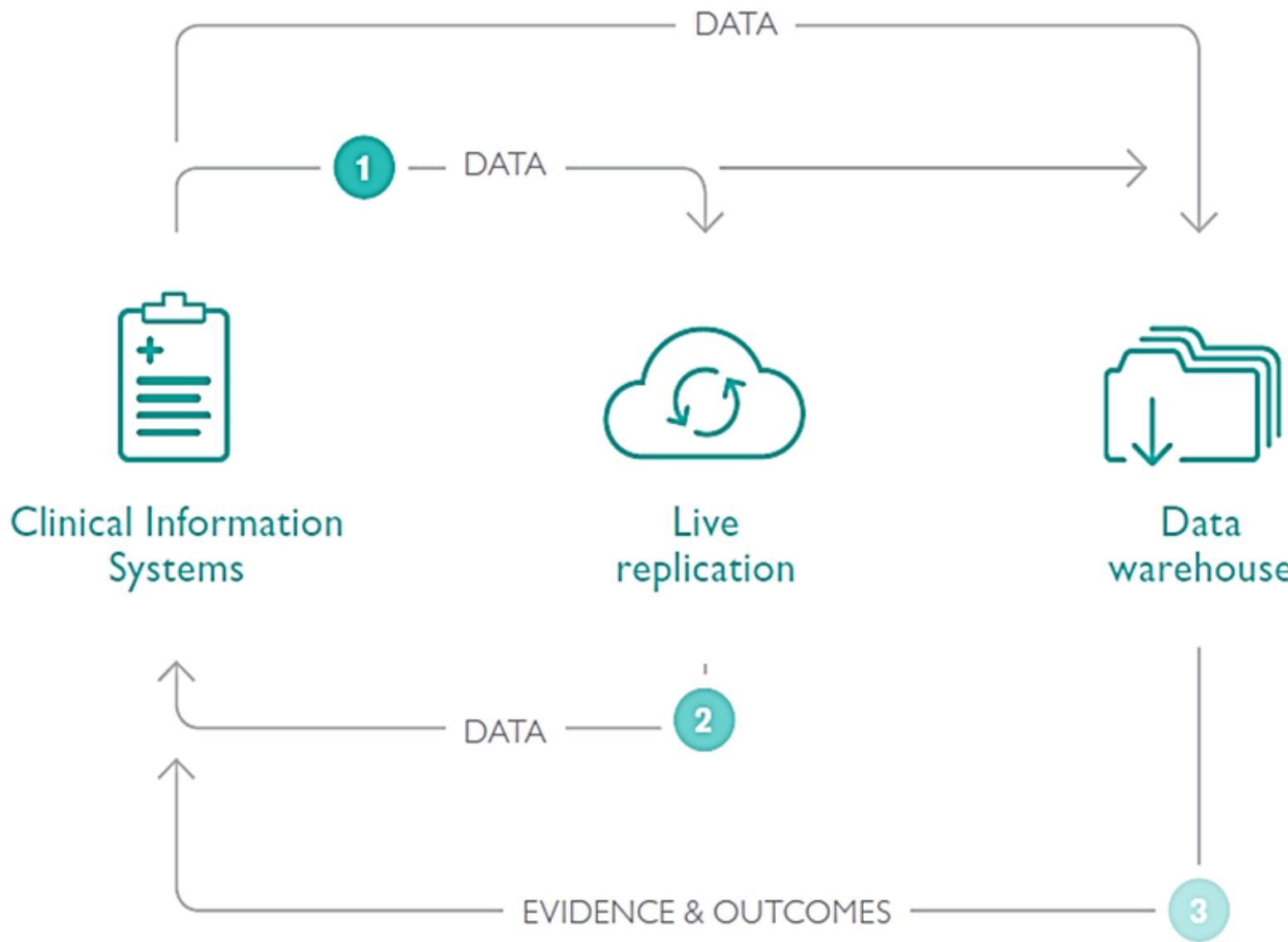


## TOTAL ACTIVITY BY TOP 10 SPECIALTIES



1 2 3





Real time replication of the EMR to test models of care.

Testing the impact of changes on real patients- a safe way to reduce the research to practice gap.

### Current projects

- Risk stratification in Febrile Neutropenia, UTI, Bronchiolitis
- EMR text mining for rare disease
- Contribution to big data in validating therapeutic drug levels







## MEMORY

A life long record of health from  
the first health care event; person  
centred to population health



GP Visits

Specialist reviews

Treatment plans

Diagnostics

Hospital admissions

Screening/immunisation

Home health

Medication



# Co-design with families has directed our approach to patient facing applications



*Lexie (18 months) & Mum, Megan  
Sydney Children's Hospital  
Randwick*



*Alyssa (9 years) & Mum, Bec  
The Children's Hospital at  
Westmead*



*Amelia (3 years) & Mum, Jess  
The Children's Hospital at  
Westmead*



*Michelle (1 year) & Mum, Irene  
Prince of Wales Hospital*



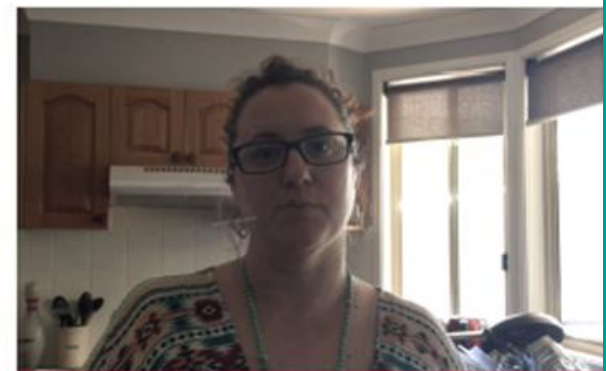
*Amelia (9 months) & Mum,  
Roseann  
The Children's Hospital at  
Westmead*



*Emily, 2 years & Mum, Claire  
Hornsby Hospital*



*Jack (16 years), Ben (14 years),  
Mum, Faye & Dad, David  
The Children's Hospital at  
Westmead*



*Ruby (4 years) & Mum, Julie  
Home group therapy session*



# Co-design themes

Free up My Time  
for What Really  
Matters

Simplify My  
Records & Data  
Management

Support Me &  
Show Me I'm on  
the Right Track

See Me as a Person  
& Recognise What  
Matters Most

Connect The Dots  
& Catch Loose  
Ends

Battle for Time

Information  
Overload

Living in Perpetual  
Uncertainty

Recognise my  
Experience

Lost in Translation

Say it Once

Appointment  
Frustration

Isolated & Under  
Pressure

Look Beyond My  
Condition

Out of the Loop

In the Detail

Emergency  
Contingency





The Sydney  
children's  
Hospitals Network  
care, advocacy, research, education

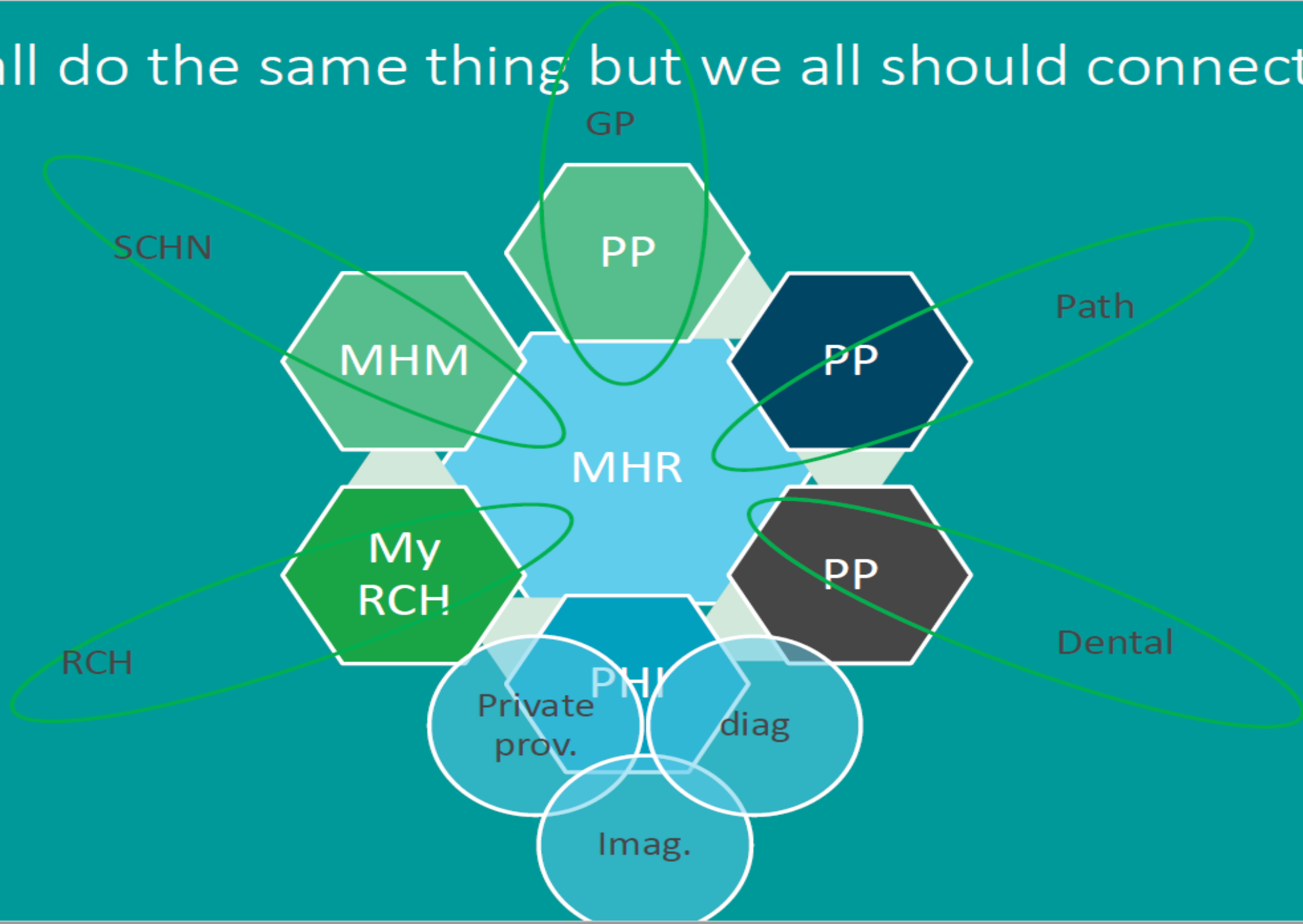


Why do we need apps for  
patients?

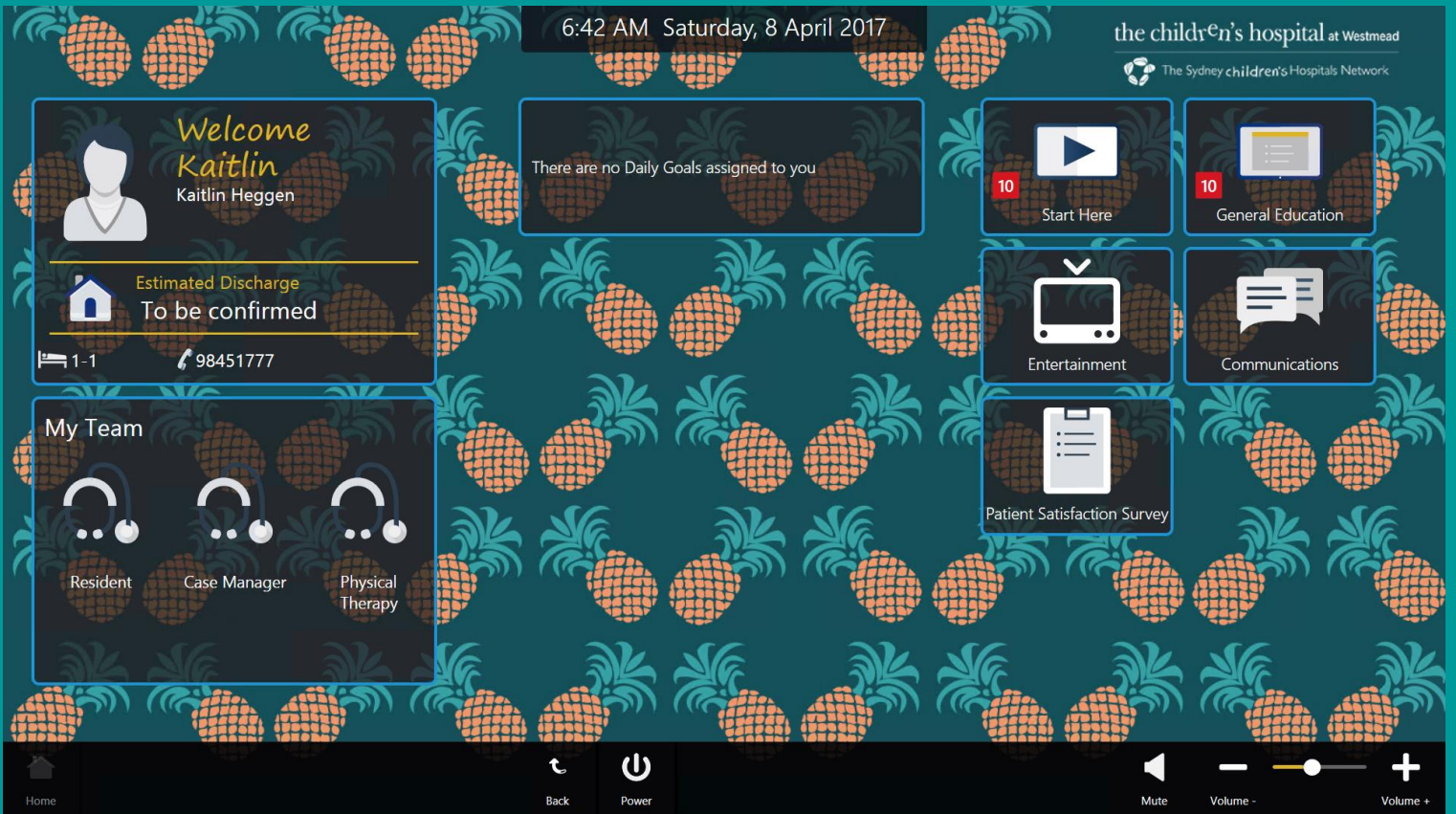
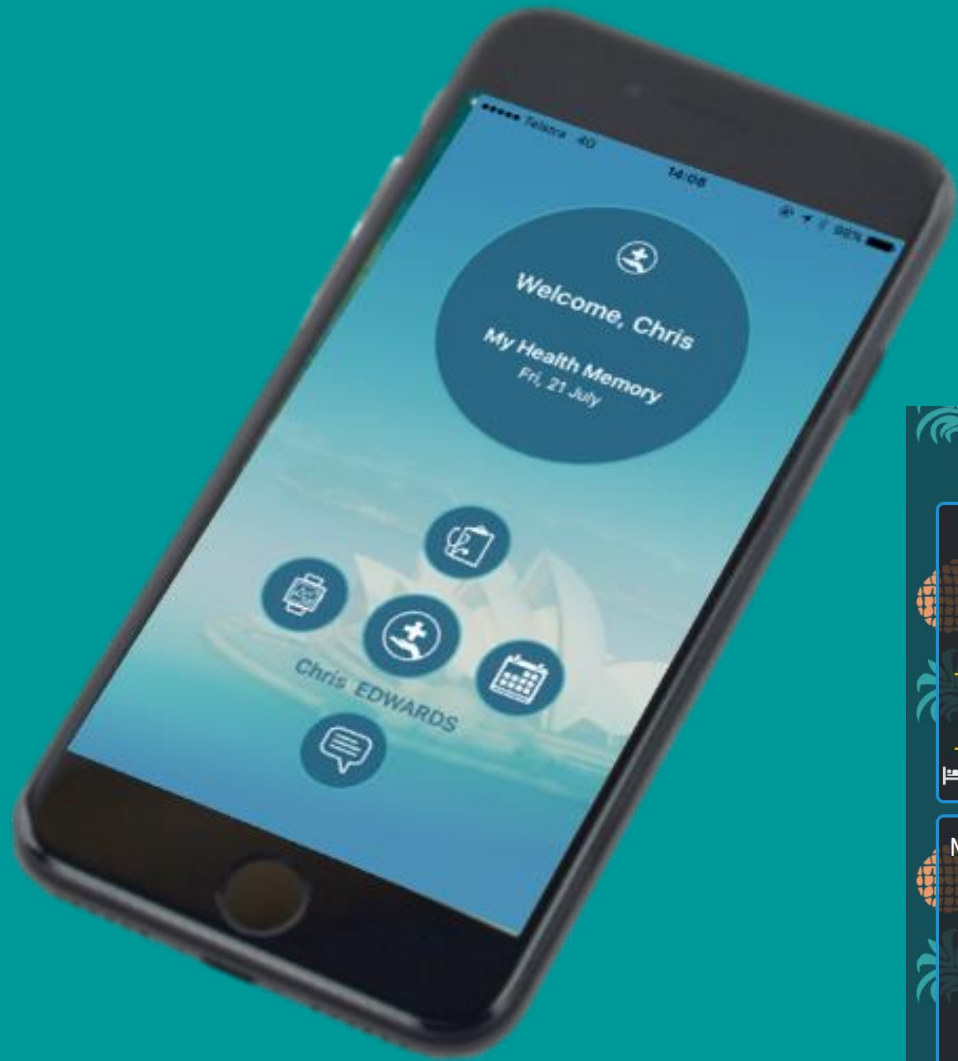
The creation of My Health  
Memory



We don't all do the same thing but we all should connect









# Outcomes from inpatients

a **58% increase** in the number of surveys completed since implementation

**18% increase** in patient awareness surrounding their rights and responsibilities in the hospital

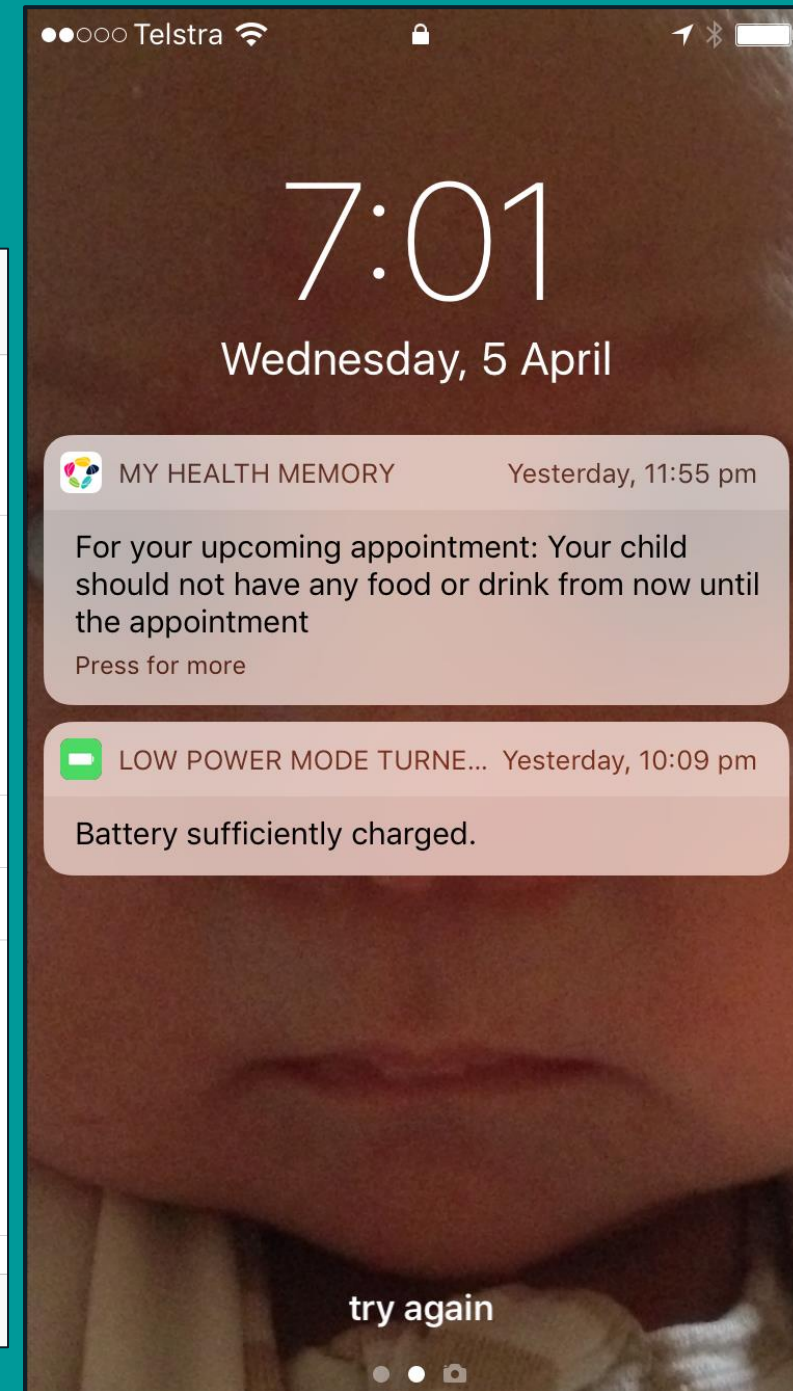
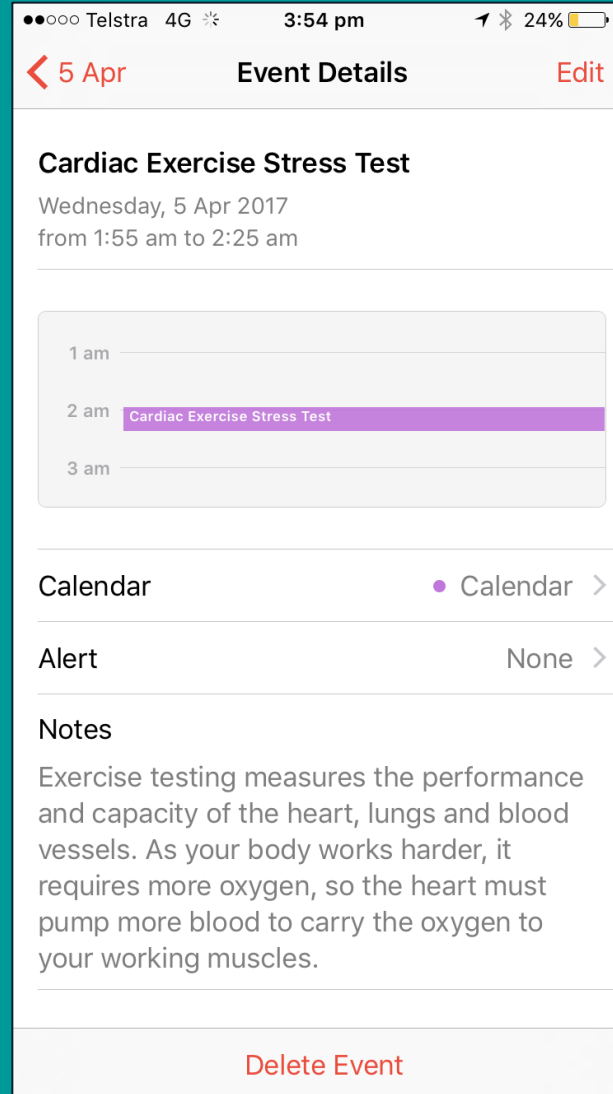
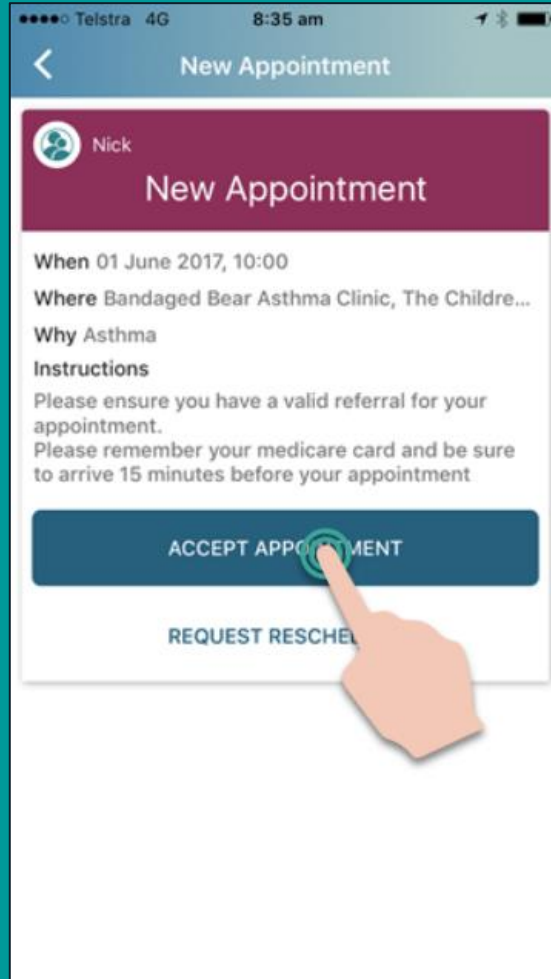
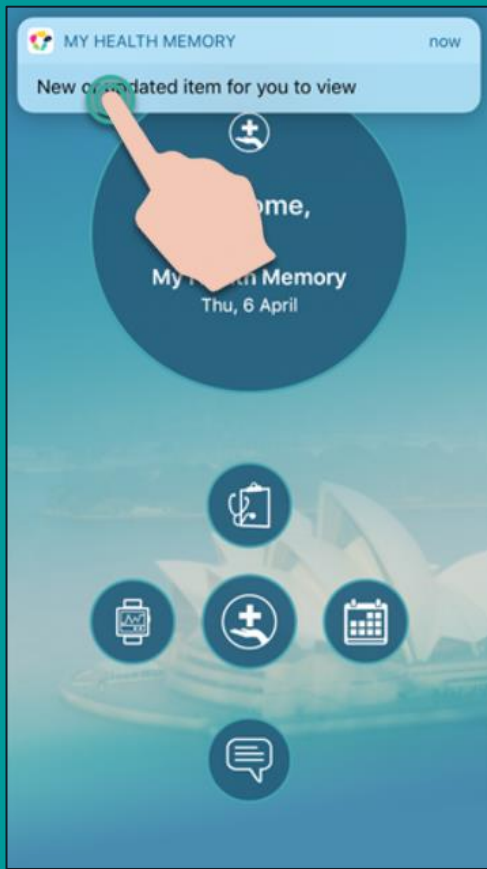
Patients are more likely (**91.6%**) to know how to provide feedback to the hospital when using the MHM inpatient solution.

From October to November, **295 goals** have been entered for the reporting period with a 45% completion rate.

1619 pieces of education have been viewed at the bedside, an average rating of 3.75 out of 5 has been provided for the content.











CAVE-TWO, Nick - 1318270 Opened by Fitzsimons, Tony

Task Edit View Patient Chart Links Notifications Navigation Help

Home Patient List Scheduling Message Centre Multi-Patient Task List Tracking Board CareCompass Dynamic Worklist Ambulatory Organiser Medical Handover Analytics DocSig: 0 SavDoc: 0

explorer.exe dcpools Quickstarts for PowerChart Up to Date Meds4Kids Dosing Guide Lanier Digital Dictation System CHW Paediatric Injectable Medicines Handbook CHW Policies and Procedures CIAP CHW Laboratory Collection Manual EIR Direct Access phabatchreport POManager PPManger ctadminapp

AdHoc Suspend Exit PM Conversation Explorer Menu Scheduling Appointment Book Calculator Charge Entry User Maintenance Tool Collections Inquiry Tear Off Attach Communicate Medical Record Request Depart Endorse Results [0]

CAVE-TWO, ...

Royal Alexandra Hospital for Children MRN:1318270 Age:6 years DOB:01/02/2011 Gender:Male No Non-Clinical Alerts Recorded \*\* No Dosing Weight Recorded \*\* AdHoc Subscribe:Not Subscribed - Location:Turner OP Nurse Adm:04/04/2017 13:40 Dis:<No - Discharge date>

\*\* Allergies Not Recorded \*\*

Menu < > Paediatric View

100%

Patient Summary Common Orders Discharge Future Orders OneView Communication

Allergies (0) + Observations - Documents (2) +

Alerts (0) + Outstanding Pathology Orders (0) + Outstanding Orders (0)

Problems and Diagnoses Pathology Results New Order Entry +

Overdue Tasks (0)

Clinical Trials (0)

Continuous Infusions (0)

## Memory App Communication

Is this communication reportable under Activity Based Funding? You can chart your statistics for ABF here:

[Outpatient Statistics](#)

**Tony Fitzsimons**

Hi Nick, just wanting to check how things are going? Any troubles with taking y our medications?

24/04/2017 10:04 AM

on behalf of **Nick CAVE-TWO**

Going great, thanks Tony. Can I get a new script Tuesday?

24/04/2017 10:08 AM

Type message

Send

## Memory App Communication

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24/04/2017 10:08 AM

Type message

Send

CERT TONYF1 24 April 2017 10:09



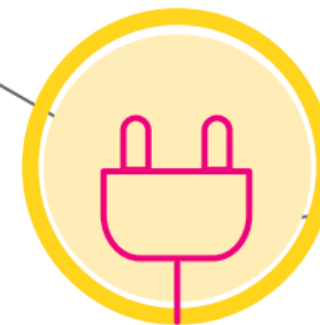
## Changing the model of care

Historical models of care were based around hospital or health facilities and the providers within them. With more care moving to short stay, day care, outpatient and shared care, there are often long breaks between events where families are self-managing or managing care with other providers. In between those conversations, there are many moments when changes to condition, symptoms, treatment or events may be considered.



The My Health MEMORY mobile app opens up two-way communication between the family and care team, in real time, enabling iterative and changing approaches to treatment.

These changes come into the record so the entire team can be up to date, and stay in the mobile app so families have a record of changes.



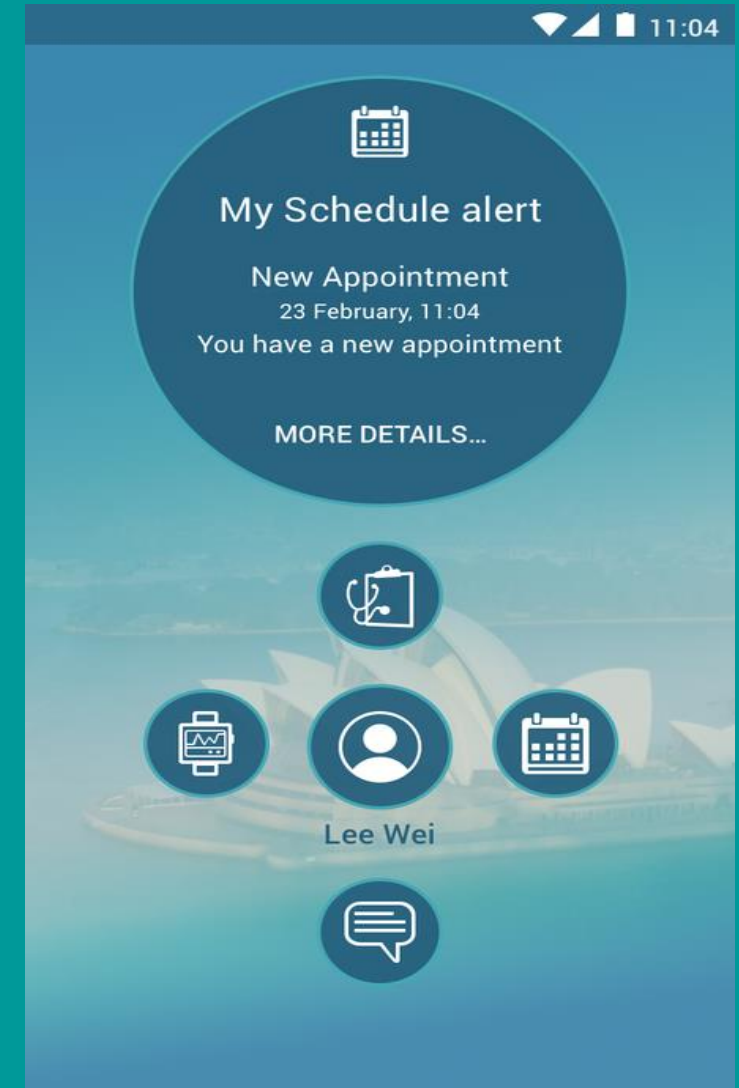
The app connects patients to the hospital once they leave the building. Information flows from within the hospital to the outside and back. These communications will come back into the digital record and fill in the historical gaps.

This is the first patient and family content direct to the electronic hospital record, and they can decide who they share their information with.



# Outcomes Health Memory Trial Results

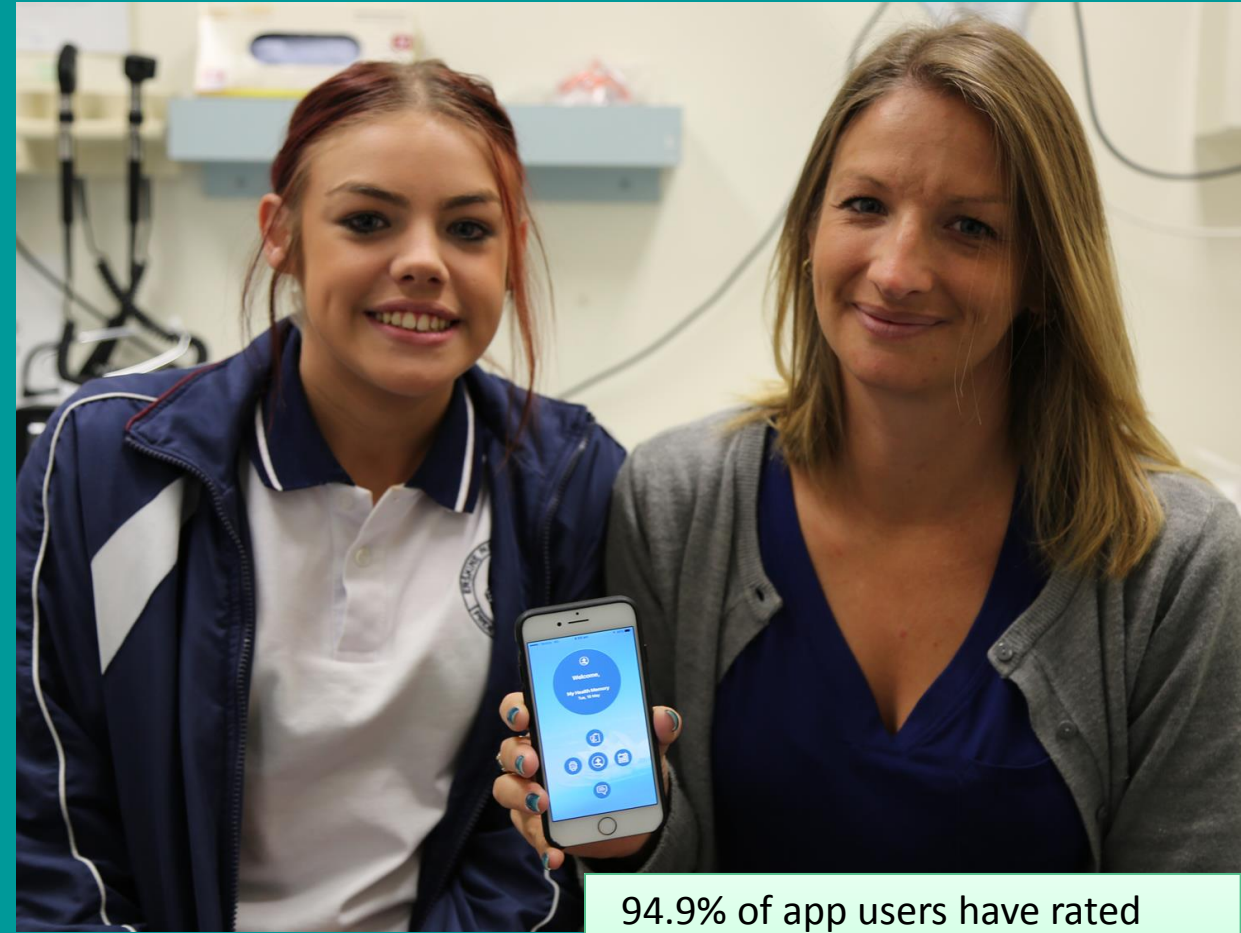
- Successful trial from June 2017 to December. Key highlights from trial group A (CF) include:
  - 67.4% of presentations have activated their App
  - CNC's have had a 20.4% decrease in the number of pagers
  - 74% decrease in clinic "No Shows"
  - Improved appointment workflows
  - Increase in ABF capture





# Coming Soon

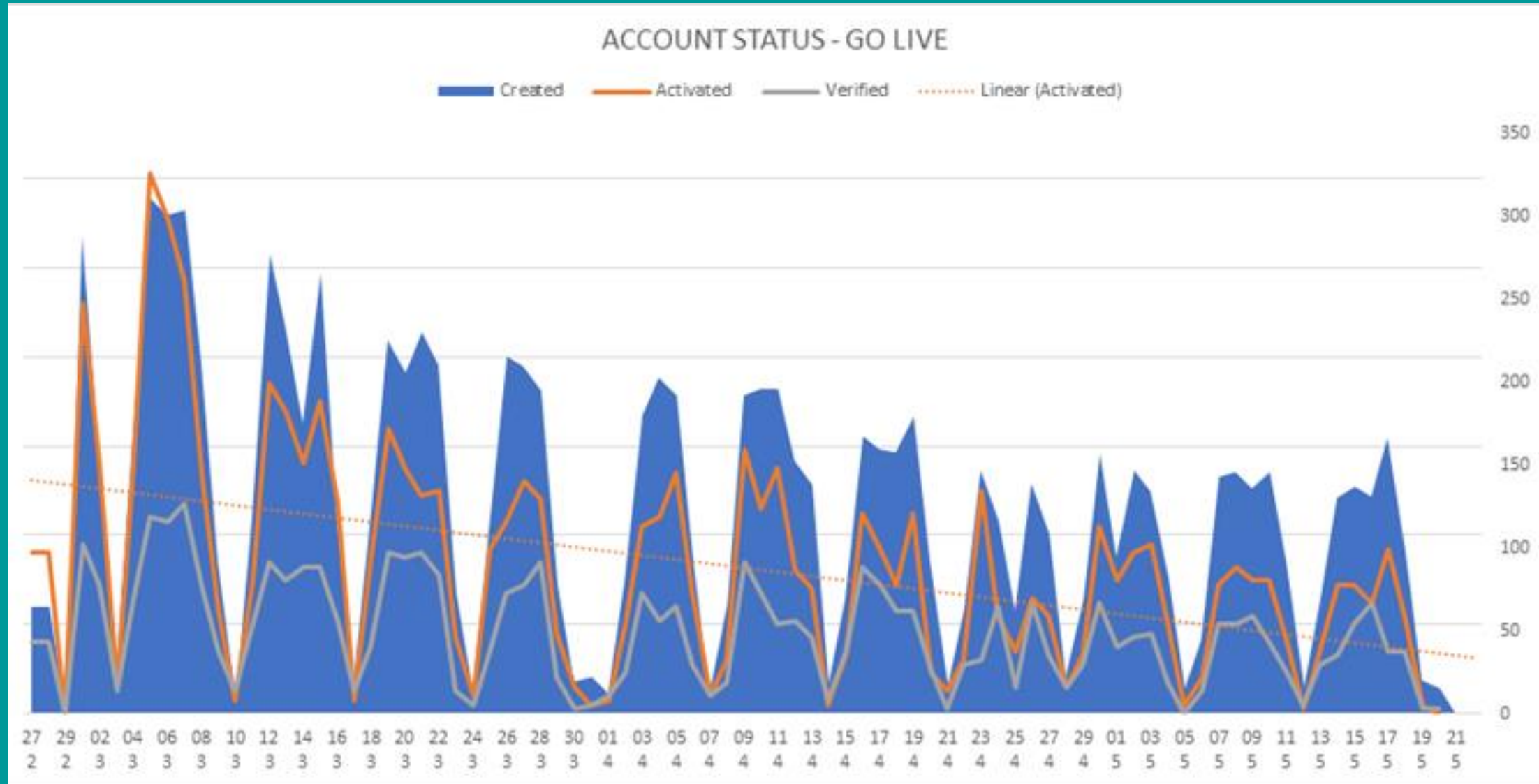
- Meal ordering
- Administrative rounding tool
- Assigning education from eMR
- PROMs
- Pre admission surveys
- letters
- Notes
- Patient added documents
- Shared care access



94.9% of app users have rated the app as being useful in the care of their child.



# Adoption My Health Memory








## SCHN eHealth Aims

- Safer Better Care
- Transparency
- Health literacy
- Self management
- Life long health
- Transformed health systems



A black and white photograph of a young child with short hair, smiling broadly. The child is wearing a white t-shirt with a Batman graphic. They are holding a large, light-colored rectangular sign in front of their chest with both hands. The background is a wall covered in a mosaic of small, square tiles. Many of the tiles are white and have small, dark text printed on them, which appears to be names. The child's face is partially obscured by the sign.

Why will  
health need to  
Change?



# Digital disruption has already happened.



The world's largest  
taxi company owns  
no taxis  
(Uber)



The largest  
accommodation  
provider owns no  
real estate  
(Airbnb)



Large phone  
companies own no  
teleco infra.  
(Skype, WeChat)



Popular media  
owners create no  
content  
(Facebook)



The fastest  
growing banks have  
no actual money  
(SocietyOne)



The largest movie  
house owns no  
cinemas  
(Netflix)



Largest software  
vendors don't write  
the apps  
(Apple/Google)





<https://scoobl.com/assets/uploads/2016/05/digitaldoctor.jpg>









[http://3.bp.blogspot.com/\\_N22Rx16qIo/Typ0DIrbkBI/AAAAAAAAAK6U/R59e7PMunM4/s1600/51214-Primary-school-student-with-ipad2-51214.jpg](http://3.bp.blogspot.com/_N22Rx16qIo/Typ0DIrbkBI/AAAAAAAAAK6U/R59e7PMunM4/s1600/51214-Primary-school-student-with-ipad2-51214.jpg)





<http://resources3.news.com.au/images/2012/11/20/1226416/889091-laptops.jpg>





## Iteration - Doing the same things better

- BTF
- DC summaries on your phone
- Valuing virtual presence as much as physical

## Innovation - doing new things

- EMR data to risk stratify patient in real time to shorten admission
- Adding family content direct to the record
- Families decide where they receive care

## Disruption - doing new things that make the old things obsolete – ?

- *Health without hospitals?*
- *New health workforce supported by AI, Robotics, mobility, communications*
- *Opening entire records to patients for their input and shared care*
- *Redesigning our revenue models to pay for patient experience/outcome*





“I will expect a  
different approach  
to my health”





# Skyping for Survivorship Support

Dr Ursula Sansom-Daly



## Skyping for survivorship support:

Using implementation science to drive and disseminate innovations in online interventions for young people and their families after cancer

Never Stand Still

Medicine

School of Women's & Children's Health

**Ursula M. Sansom-Daly**, Claire E. Wakefield, Kate Hetherington, Brittany C. McGill,  
Richard J Cohn.

[ursula@unsw.edu.au](mailto:ursula@unsw.edu.au)

 [@usansomdaly](https://twitter.com/usansomdaly)





## BSU Research Team

**Prof Claire Wakefield, Prof Richard Cohn,**  
Sarah Ellis, Sanaa Mathur, Kate Marshall, Brittany McGill,  
Eden Robertson, Helen Wilson...



## Recapture Life

**Prof Richard Bryant** (University of New South Wales), **Prof Phyllis Butow** (University of Sydney), **A/Prof Pandora Patterson** (CanTeen Australia), **Dr Antoinette Anazodo** (Sydney Youth Cancer Service), **Prof Susan Sawyer** (Centre for Adolescent Health, VIC), **Ms Kate Thompson & Lucy Holland** (OnTrac@PeterMac, VIC), **Dr Michael Osborn** (Youth Cancer Service SA/NT), **Ms Meg Plaster** (Youth Cancer Service WA), **Ms Belinda Matigian & Ms Lyndal Gray** (AYA Cancer Service, Princess Alexandra Hospital, QLD), **Dr Belinda Barton** (Children's Hospital Westmead, NSW)



## Cascade

**Prof. Afaf Girgis** (UNSW), **Prof. Madeleine King** (USYD), **A/Prof. Rosalie Viney** (UTS), **A/Prof Pandora Patterson** (CanTeen Australia), **Dr Antoinette Anazodo** (Sydney Youth Cancer Service/KCC), **Dr Belinda Barton** (CHERI, CHW), **Dr Luciano Dalla-Pozza** (CHW), **Dr Maria McCarthy**, **Dr Peter Downie** (RCH Melbourne), **Ms Cherie Lowe** (LCCH QLD), **Dr Michael Osborn** (RAH SA), **Mr Gordon Miles** (PMH WA), **Prof. Martha Grootenhuys** (Emma Children's Hospital, The Netherlands)









Intervention  
development/evaluation

Moving to  
implementation

Trial design

Experiences so  
far...



Changes  
NEXT EXIT ↗



- **Treatment completion – point of risk**

(Sansom-Daly & Wakefield, 2014; Wakefield, McCloone, Butow, Lenthén, & Cohn, 2011)

- **29%** have PTSS indicative of PTSD (Kwak et al., 2012, 2013)
- **24.3%** long-term adolescent survivors → clinical anxiety, depression, or PTSD (Seitz et al., 2010)



- **Treatment completion – point of risk**

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- **29%** have PTSS indicative of PTSD (Kwak et al., 2012, 2013)
- **24.3%** long-term adolescent survivors → clinical anxiety, depression, or PTSD (Seitz et al., 2010)

- **Geographical barriers to accessing help**

- Average family residence **239km** from Sydney Children's Hospital (Wakefield, Butow, Fleming, Daniel, & Cohn, 2011)
- Regional/rural areas: **0.83** psychologists per 10,000 people vs. **5.92** in cities (ABS, 2011)



# Intervention development/evaluation



# Background to the implementation...

## Study 1 – Systematic reviews

### The Psychosocial Impact of Completing Childhood Cancer Treatment: A Systematic Review of the Literature

Claire E. Wakefield,<sup>1,2</sup> PhD, Jordana McLoone,<sup>1,3</sup> PhD, Belinda Goodenough,<sup>1,4</sup> PhD, Kate Lenthén,<sup>1</sup> BSW, David R. Cairns,<sup>5</sup> PhD, and Richard J. Cohn,<sup>1,2</sup> MBBS

<sup>1</sup>Centre for Children's Cancer and Blood Disorders, Sydney Children's Hospital, <sup>2</sup>School of Women's and Children's Health, University of New South Wales, <sup>3</sup>Prince of Wales Clinical School, University of New South Wales, <sup>4</sup>School of Psychology, University of New South Wales and <sup>5</sup>Department of Psychology, Macquarie University

Health Psychology  
2012, Vol. 31, No. 3, 380–393

© 2011 American Psychological Association  
0278-6133/11/\$12.00 DOI: 10.1037/a0025977

### A Systematic Review of Psychological Interventions for Adolescents and Young Adults Living With Chronic Illness

Ursula M. Sansom-Daly  
University of New South Wales and Sydney Children's Hospital

Claire E. Wakefield  
Sydney Children's Hospital and University of New South Wales

Michelle Peate  
University of New South Wales

Richard A. Bryant  
University of New South Wales

#### Review Article

### Distress and adjustment among adolescents and young adults with cancer: an empirical and conceptual review

Ursula M. Sansom-Daly<sup>1,2,3</sup>, Claire E. Wakefield<sup>1,3</sup>

<sup>1</sup>Kids Cancer Centre, Sydney Children's Hospital, Randwick, Australia; <sup>2</sup>School of Psychology; <sup>3</sup>School of Women's and Children's Health, The University of New South Wales, Sydney, Australia

Corresponding to: Ursula M. Sansom-Daly: Kids Cancer Centre, Level 1 South Wing, Sydney Children's Hospital, High Street, Randwick NSW 2031, Australia. Email: Ursula.Sansom-daly@sesiahs.health.nsw.gov.au.

#### Clinical Oncology in Adolescents and Young Adults

Open Access Full Text Article

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REVIEW

### Assessment of psychosocial outcomes in adolescents and young adults with cancer: a systematic review of available instruments



UNSW  
AUSTRALIA



# Background to the implementation...

## Study 1 – Systematic reviews

## Study 2 – Qualitative studies

JOURNAL OF ADOLESCENT AND YOUNG ADULT ONCOLOGY  
Volume 1, Number 4, 2011/2012  
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DOI: 10.1089/jayao.2011.0030

### Adolescent Cancer and Health-Related Decision-Making: An Australian Multi-Perspective Family Analysis of Appointment Attendance and Involvement in Medical and Lifestyle Choices

Claire E. Wakefield, PhD<sup>1,2</sup> Jordana K. McLoone, PhD<sup>1,2</sup> Catharine A.K. Fleming<sup>1,2</sup>  
Michelle Peate, PhD<sup>3</sup> Emily J. Thomas, MPsych, Clin<sup>3</sup> Ursula Sansom-Daly<sup>1,4</sup>  
Phyllis Butow, PhD<sup>5</sup> and Richard J. Cohn, MBBCh<sup>1,2</sup>

European Journal of Cancer Care

Original article

### Support after the completion of cancer treatment: perspectives of Australian adolescents and their families

C.E. WAKEFIELD, B PSYCH (HONS II), PHD, PROGRAM LEADER, Behavioural Sciences Unit, Centre for Children's Cancer  
and Blood Disorders, Sydney Children's Hospital (SCH), Randwick, NSW, and School of Women's and Children's

JOURNAL OF ADOLESCENT AND YOUNG ADULT ONCOLOGY  
Volume 1, Number 2, 2011  
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DOI: 10.1089/jayao.2011.0006

Original Articles

### Returning to School After Adolescent Cancer: A Qualitative Examination of Australian Survivors' and Their Families' Perspectives

Jordana K. McLoone, PhD<sup>1,2</sup> Claire E. Wakefield, PhD<sup>1,2</sup> Phyllis Butow, PhD<sup>3</sup>  
Catharine Fleming<sup>1,2</sup> and Richard J. Cohn, MBBCh<sup>1,2</sup>



# Background to the implementation...

Study 1 – Systematic reviews

Study 2 – Qualitative studies

Study 3 – Phase II RCTs



Wakefield et al. *Trials* (2015) 16:153  
DOI 10.1186/s13063-015-0681-6



**STUDY PROTOCOL**

**Open Access**

Online parent-targeted cognitive-behavioural therapy intervention to improve quality of life in families of young cancer survivors: study protocol for a randomised controlled trial

Claire E Wakefield<sup>1,2\*</sup>, Ursula M Sansom-Daly<sup>1,2,3</sup>, Brittany C McGill<sup>1,2</sup>, Maria McCarthy<sup>4,5</sup>, Afaf Girgis<sup>6</sup>, Martha Grootenhuys<sup>7</sup>, Belinda Barton<sup>8,9</sup>, Pandora Patterson<sup>10,11</sup>, Michael Osborn<sup>12,13</sup>, Cherie Lowe<sup>14</sup>, Antoinette Anazodo<sup>1,3</sup>, Gordon Miles<sup>15</sup> and Richard J Cohn<sup>1,2</sup>



# Background to the implementation...

Study 1 – Systematic reviews

Study 2 – Qualitative studies



Study 3 – Phase II RCTs



Sansom-Daly et al. *BMC Cancer* 2012, **12**:339  
<http://www.biomedcentral.com/1471-2407/12/339>



**STUDY PROTOCOL**

**Open Access**

Online group-based cognitive-behavioural therapy for adolescents and young adults after cancer treatment: A multicenter randomised controlled trial of Recapture Life-AYA

Ursula M Sansom-Daly<sup>1\*</sup>, Claire E Wakefield<sup>1</sup>, Richard A Bryant<sup>2</sup>, Phyllis Butow<sup>3</sup>, Susan Sawyer<sup>4</sup>, Pandora Patterson<sup>5</sup>, Antoinette Anazodo<sup>6</sup>, Kate Thompson<sup>7</sup> and Richard J Cohn<sup>1</sup>

Wakefield et al. *Trials* (2015) 16:153  
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**STUDY PROTOCOL**

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Online parent-targeted cognitive-behavioural therapy intervention to improve quality of life in families of young cancer survivors: study protocol for a randomised controlled trial

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# Format



- AYAs aged 15-25/parents of children <18 months, **1-12 months** after treatment completion
- Small groups (3-5)
- Psychologist-led
- Secondary prevention: clinical distress levels not required
- 6 x 90 minute (RL)/ 4 x 120min (Cascade) weekly sessions + booster
- Psychoeducational workbook



# Manualised CBT program

	Module	Psychological skills focus
1	“What just happened to me??” (being a young person after cancer)	<b><u>PSYCHO-EDUCATION &amp; NORMALISATION</u></b> . Discussion of range of common responses to cancer for individual and family. Building rapport and a safe, trusting group environment.
2	Getting back into the swing of things after cancer	<b><u>HEALTHY BALANCED LIVES &amp; BEHAVIOURAL ACTIVATION</u></b> . Discussion of impact of cancer on all areas of life including exercise, hobbies. Use of ‘ACE’ activity scheduling to tackle ‘inactivity trap’ and help self-esteem/stress.
3	How has cancer changed the way I think?	<b><u>ABC MODEL &amp; THOUGHT CHALLENGING</u></b> . Intro to ABC model and idea of ‘unhelpful thinking styles’. Cognitive challenging.
4	The ‘elephant in the room’: Thinking about the cancer coming back	<b><u>ACCEPTANCE-BASED STRATEGIES</u></b> . Evaluating the usefulness of certain thoughts; thought suppression experiment; using worry postponement & other behavioral strategies to manage ‘questions without answers’.
5	Talking all things cancer: simple communication skills for difficult situations	<b><u>SOCIAL SUPPORT</u></b> . Seeking out social support; managing unhelpful/difficult thoughts around friends/relationships; assertive communication skills.
6	Goal-setting and planning for the future (even when things feel up in the air)	<b><u>GOAL SETTING</u></b> . Applying reappraisal and problem solving skills to future. Anticipating future difficult situations.





RECAPTURE  
LIFE

RESILIENCE & COPING SKILLS  
FOR YOUNG PEOPLE  
TO LIVE WELL  
FOLLOWING CANCER

## MODULE 1

### "WHAT JUST HAPPENED TO ME??" (BEING A YOUNG PERSON AFTER CANCER)

Although many friends and family may expect you to be on top of the world when you finish cancer treatment, we know from a lot of research and talking to a lot of young people that coming off cancer treatment is a little bit more complicated than that.

It is normal to experience a number of different emotions – perhaps all at once! These can range from overwhelming **relief** and **happiness** ("it's finally over!"), to feeling like it's a bit of a **downer** or an **anti-climax** ("Ok... but what NOW??"). Many young people also feel **angry** ("hang on a minute... why did I have to go through that in the first place??"), **scared** ("Now it's longer between check-ups... what if it comes back and no-one notices??"), **guilty** ("Not sure why I lived and the guy next to me didn't..."), **lonely** or **isolated** ("No one really gets what it was like for me... How am I supposed to explain it to them?") ...and so the list goes on!

The point is, that any of these feelings can be normal reactions to what is a very unusual and rare event (after all, you are probably the first young person you know to get diagnosed with cancer – that's a tough call!).

Some of the skills we will talk about in Recapture Life will help you to cope with some of these feelings to help you get back to living life the way you want to.

You have that realism at the end... because everyone's telling you that it's all over, but you still feel terrible, and you look terrible, and you realise, "This is bigger than I thought it was." Because at the start of your treatment people say "It's only six months", but then at the end you realise that you've still got a long way to go.

PERSONALLY, I'M NOT A BIG FAN OF THE WORD "SURVIVOR."

I DON'T REALLY GET MUCH INFORMATION ABOUT IT. I JUST GOT TOLD THAT I WAS FINISHING, AND I COULD GET BACK TO MY OLD LIFE.

I'M HOME NOW, I SHOULD BE SO HAPPY, SO HOW COME I'M WAKING UP IN THE MORNING BAWLING MY EYES OUT?

8 | Recapture Life



### THE ABC OF THOUGHTS

We use the "ABC" model to think about how our thoughts affect everything else. Thinking about our thoughts in the "ABC" way is the first step to figuring out what may be making us upset, angry, annoyed, jealous, guilty (or even happy!).



#### A ACTIVATING EVENT.

Basically, this is the situation you are in. For example, the situation might be the drive back to the hospital for your first check-up since finishing treatment.



#### B BELIEFS.

The 'B' is the thought that pops into your head. For example, during the drive back to the hospital you may notice yourself thinking, "Uh-oh, I hope my bloods are okay..."



#### C CONSEQUENCES.

Then 'C' stands for the consequences – the feelings or emotions – that this thought triggers in you. This might be nervous, scared, worried, or even angry. Usually a lot of physical sensations go along with our strongest emotions, like 'butterflies' in your stomach, a racing heartbeat, sweaty palms, restlessness or 'jitteriness'.



#### D DID/DOING/DONE.

What did you do as a result of your beliefs or thoughts? In the example of heading to the hospital check-up, if you are worried thinking about your upcoming check-up, and feeling nervous on the drive in, some ways you might respond to this might be to distract yourself on your mobile phone, stare out the window, snap at your Mum or Dad, or even pick a fight with a younger sibling out of frustration.

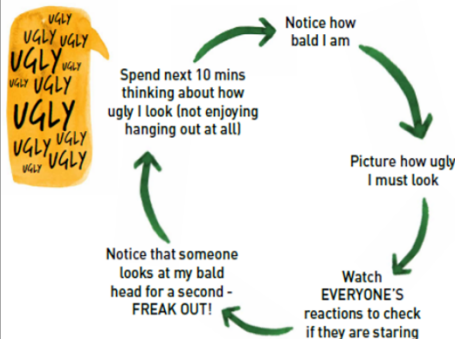
Recapture Life | 9



### HOW TO LET STICKY THOUGHTS GO

#### EXAMPLE 1: SELF-CONSCIOUS THOUGHTS ABOUT YOUR BODY

A lot of young people experience body image issues after finishing cancer treatment. These thoughts can also be hard to get rid of as there is often no way to challenge them using our evidence for/against method (e.g., it is not possible to know what other people might be thinking about you). These thoughts can also be quite "sticky" – that is, they hang around and are hard to get rid of! This is partly because feeling unattractive is very distressing. It can also be because of where our attention is: once people become self-conscious about a particular part of their body, they tend to FOCUS on that body part and on people's reactions. This can lead you to pay attention only to things that FIT with the idea that you are ugly, and even GUESS what other people are thinking (e.g., "Eww, his bald head is so ugly") which can make it all seem worse.



### PRACTICE MAKING YOUR STICKY THOUGHTS SMALLER + QUIETER

- One way you can do this is to imagine the thoughts as a font on a computer screen that you are reducing in size until you can barely see it anymore.
- You can also imagine the thoughts are on the radio, and you are turning the volume down on them, until they are just white noise....
- Another fun way to make the thoughts less upsetting is say the culprit thoughts or words over and over until they turn into sounds that barely mean anything anymore – try it! "Ugly ugly ugly ugly ugly ugly ugly ugly ugly ugly ugly ugly ugly..." See, sounds kind of silly now doesn't it?



These suggestions aren't meant to minimize your worries – but are meant to show you that there are easy strategies you can use to stop these worries getting the better of you.

I often think that **everyone** is looking at me thinking that something seems odd about me, so I'm **hypersensitive** to those little negative things, so if someone is silent for a bit I'll **start worrying** about what they are thinking.



CASCADE

# Cope, Adapt, Survive: Life After Cancer



There are a few important points to note about ACE activities:

- These activities don't have to be anything monumental. Going to a spa for a weekend may not be realistic, but putting aside 30 minutes to have a bubble bath may be enough to make you feel good;
- "But I don't feel like it?" Sometimes positive events need to happen before you feel motivated, or you feel that you have the energy;
- Creating a good balance sometimes involves giving yourself permission to have some down time or cut back on activities, rather than taking on new hobbies or activities;
- As parents, we need to change the way we think about relaxation and leisure activities. Instead of being an optional thing, start to think of these activities as mandatory. Initially, schedule them into your week the same way you would something like a doctor's appointment, or picking the kids up from school. After all they are an investment in your emotional health, which impacts everything else you do in life.



## SKILLS SUMMARY

- Cancer really turns life upside down. For parents, the whole process of treatment can mean that you stop doing the things that used to make you feel good and help you de-stress.
- We can figure out what types of activities make us feel good by using the ACE log on page 16 and recording our mood after different activities.
- The ACE log can also help us to schedule in a mix of events that give us a sense of Achievement, of Connectedness to others, and of Enjoyment.



## HOME PRACTICE

Use the ACE activities log to keep track of what you do each day that gives you a sense of Achievement, Closeness to others, and Enjoyment. Write down the day, date and time, the activity you did, and rate the sense of Achievement, Closeness to others, and Enjoyment on a scale from 0 (none) to 10 (maximum). Then rate your overall mood afterwards (out of 10).



"When we first left, you felt like you were being kicked out."

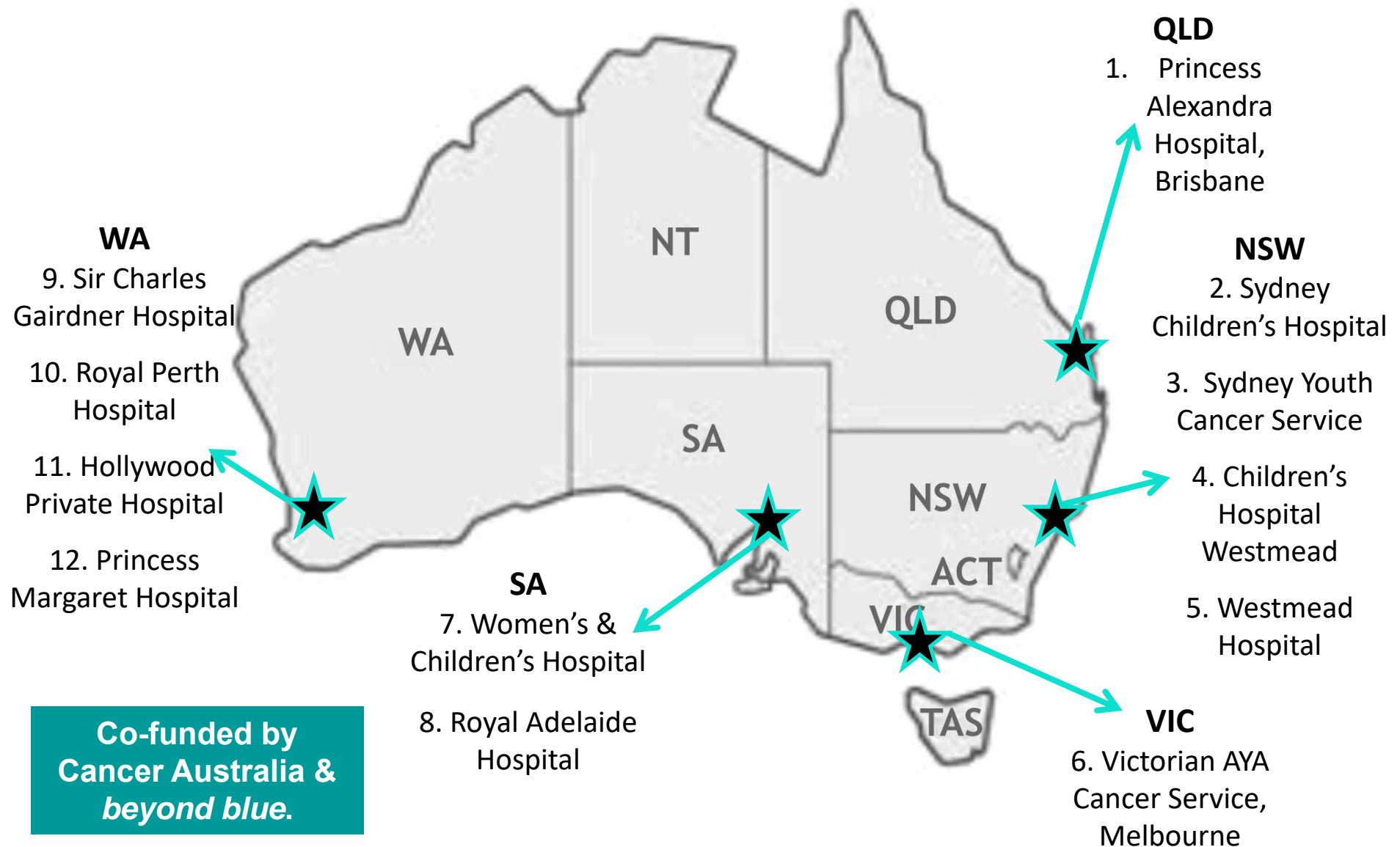
"I'm home. I should be so happy and I'm balling my eyes out. [I need] someone to say it's okay, it's okay to feel like this and it's normal."

"Release from [the hospital] - it was like being let out [of] prison basically."

"There is adjustment time for the family and doing things, getting back on top of things, and it's not immediate that it gets back to normal, which I think is everybody's expectation."



# Phase II trial: Recruitment sites





N = 42



Patient characteristics		
Demographic factors		
Age at diagnosis	Mean (SD)	19.10 (3.21)
	Range	11 – 25
Age	Mean (SD)	20.65 (2.87)
	Range	15 – 26
Gender: N (%)	Male	20 (47.6)
	Female	22 (52.4)
Distance from capital city (km)	Mean (SD)	206.13 (219.35)
	Range	4.7-740
Cancer-related factors		
Cancer type N (%)	Blood	22 (52.4)
	Germ cell tumours	2 (4.8)
	Solid tumours	11 (26.2)
	Sarcomas	6 (14.3)
Previous relapse N (%)	No	34 (81.0)
	Yes	7 (16.7)
	Don't know	1 (2.4)



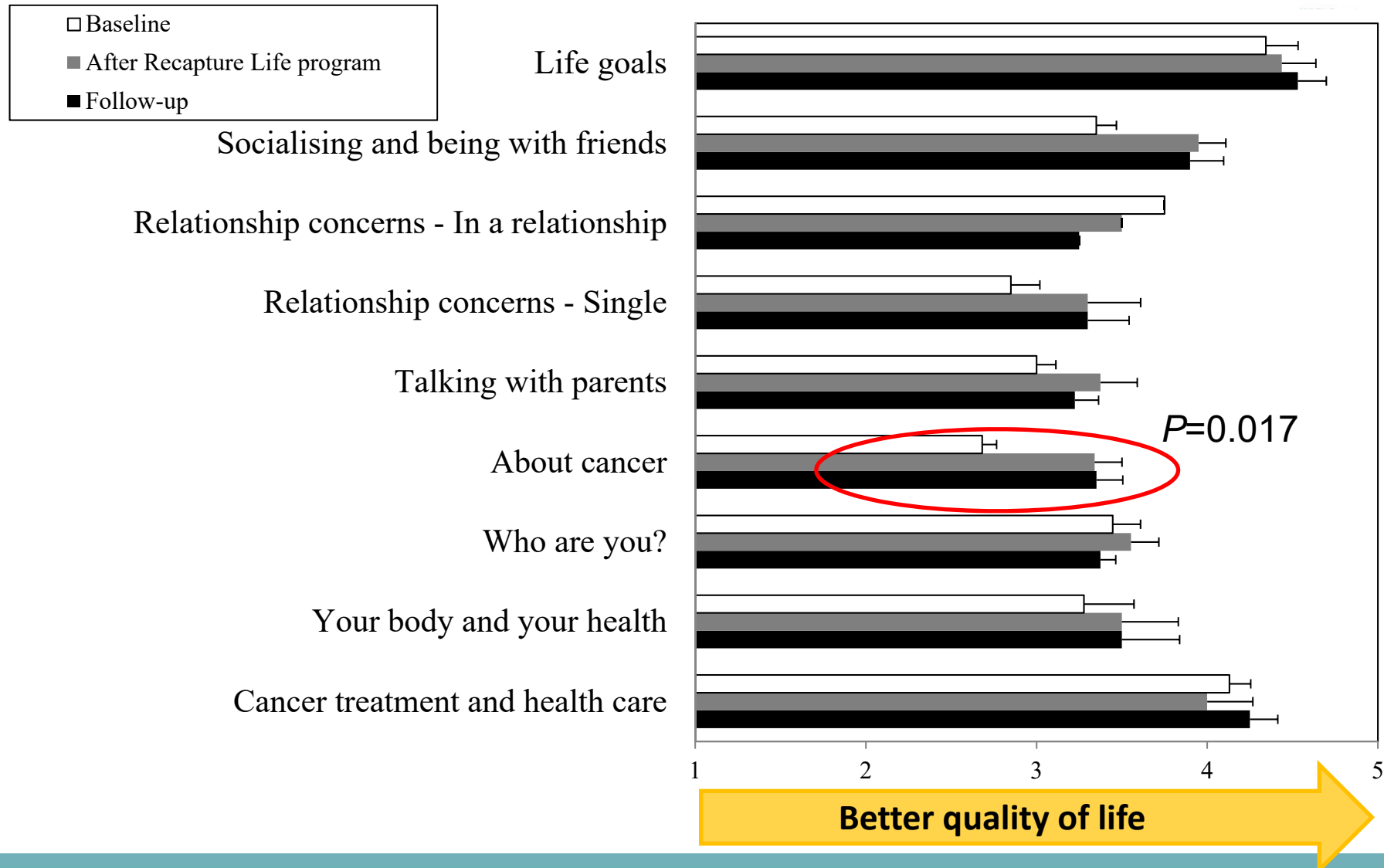
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# Quality of life



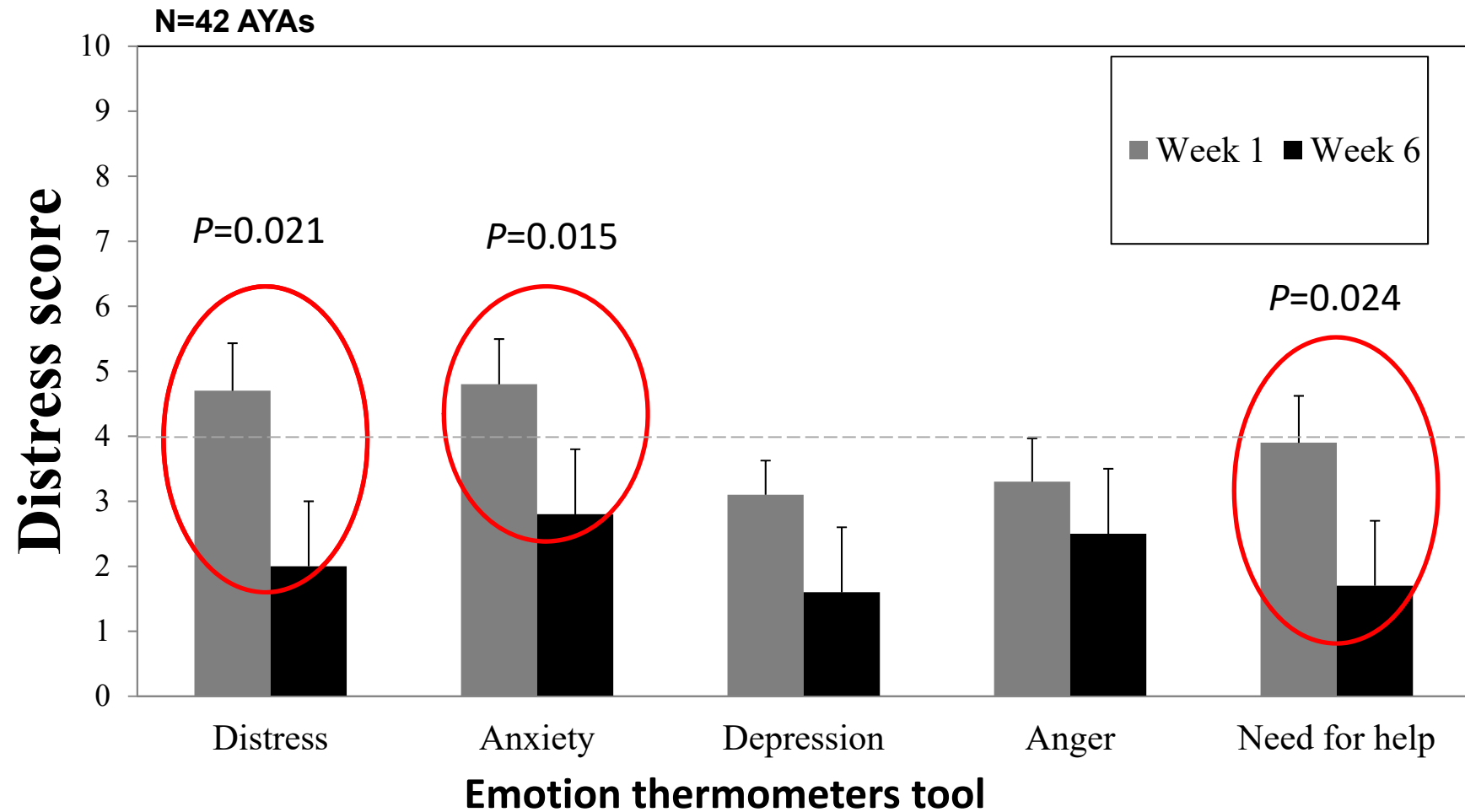
Impact of Cancer Scale (IOCS) (Zebrack et al., 2010)



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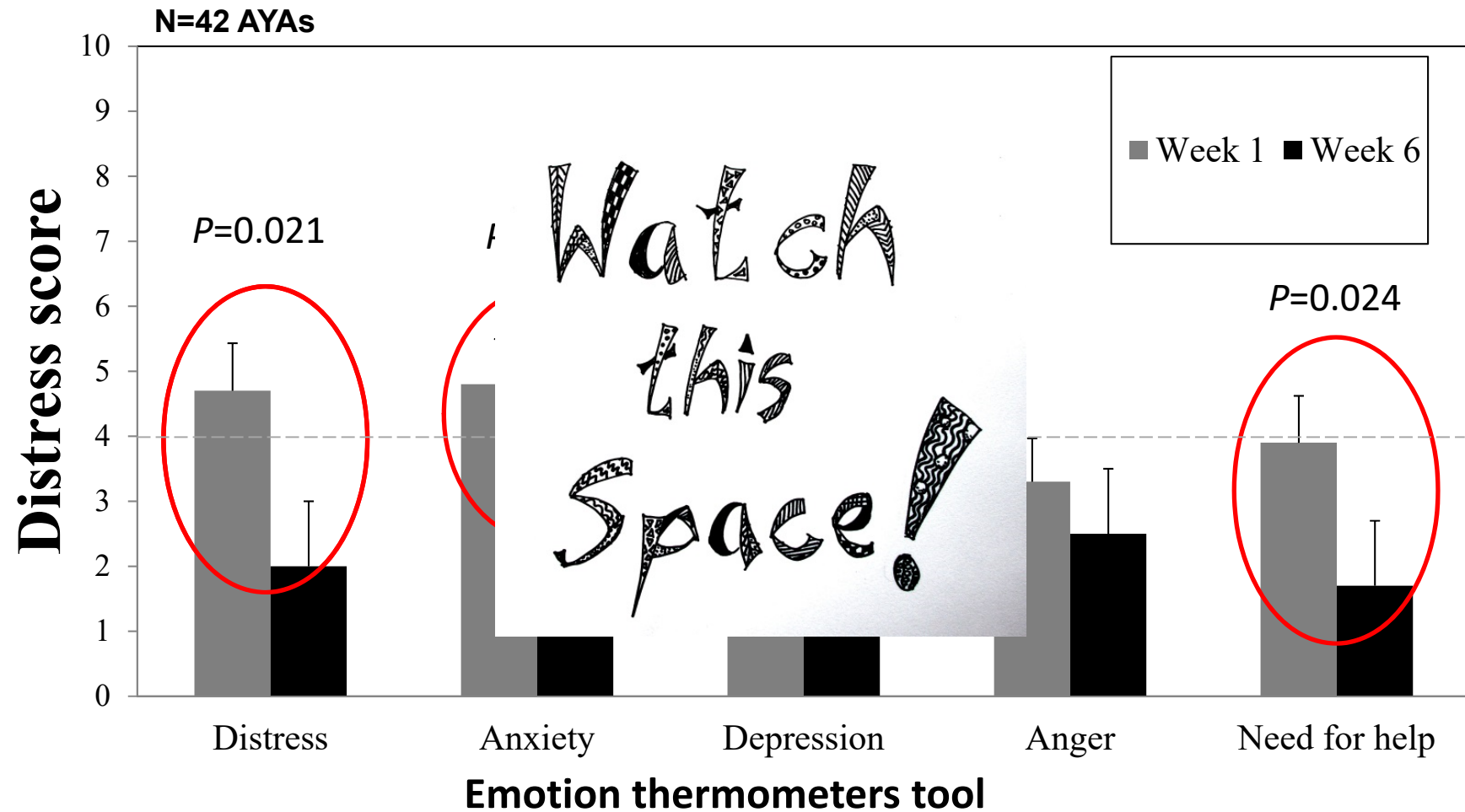
# Distress trajectories: pre-post group



(Roth, Kornblith, & Batel-Cope, 1998)

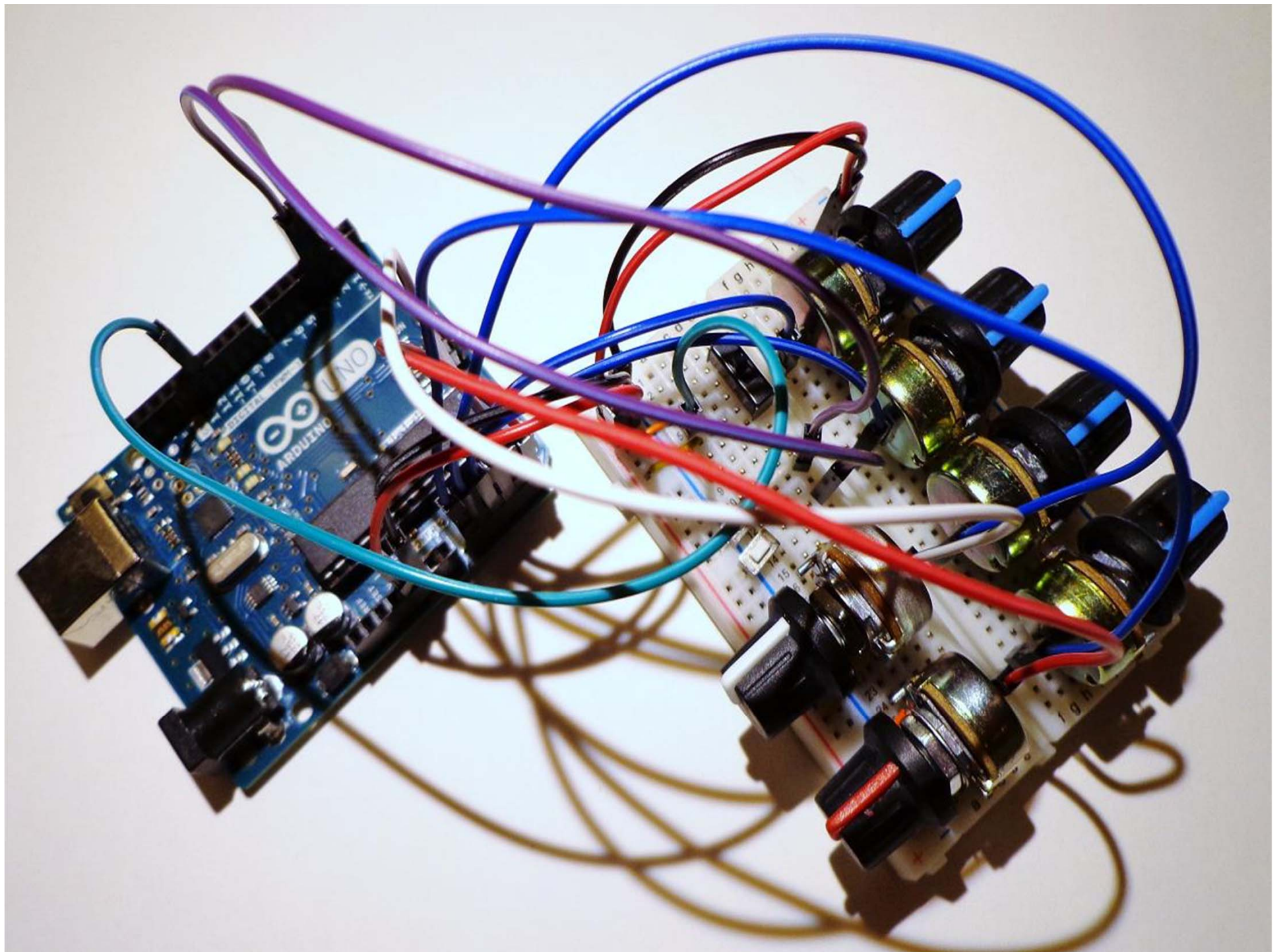


# Distress trajectories: pre-post group

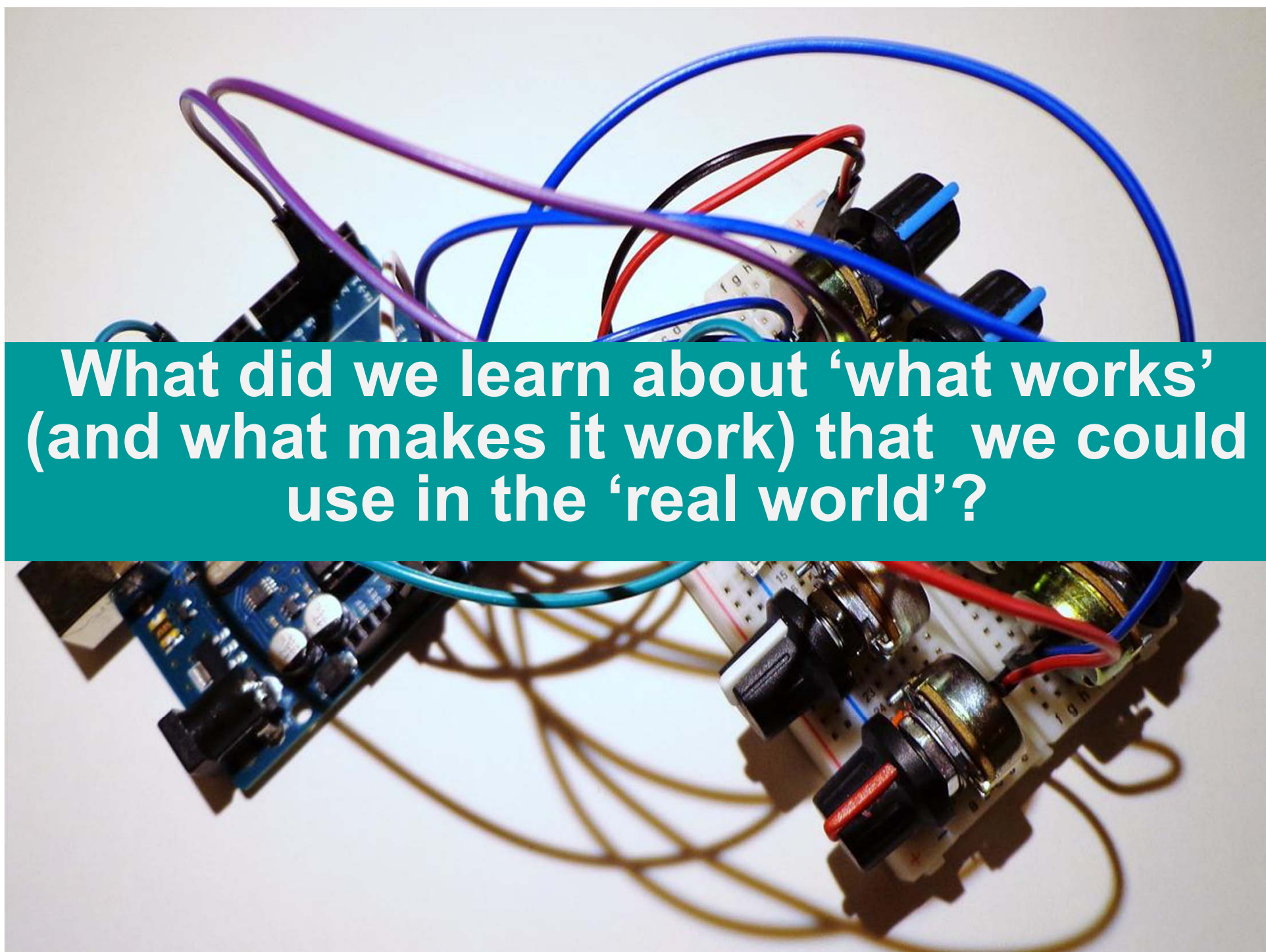


(Roth, Kornblith, & Batel-Cope, 1998)







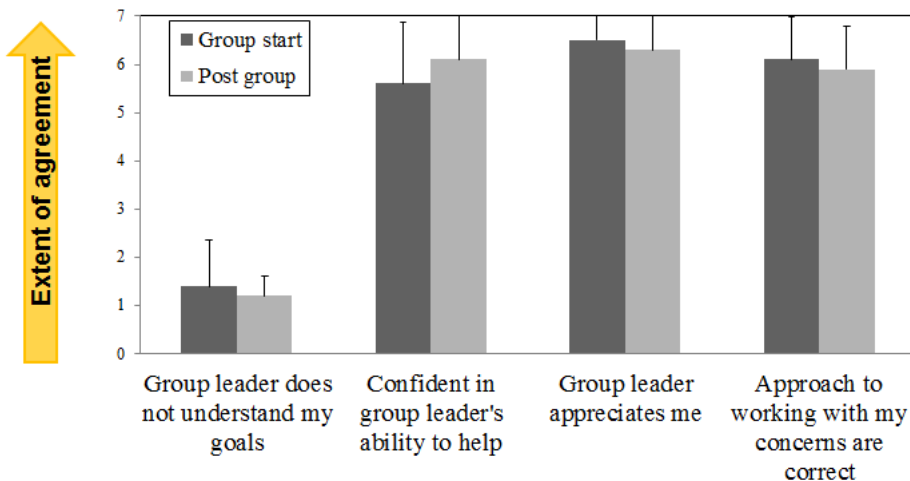


What did we learn about 'what works'  
(and what makes it work) that we could  
use in the 'real world'?



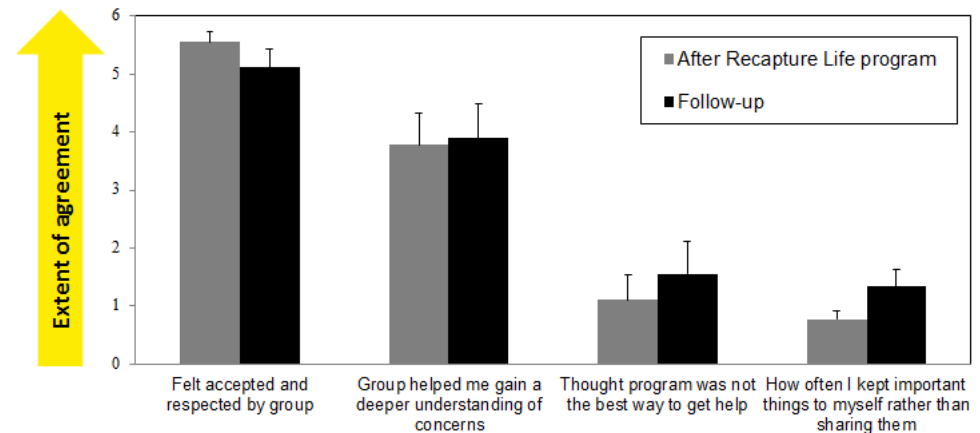
# Clinical processes

## Therapeutic alliance



**Working Alliance Inventory (WAI)** (Horvath & Greenberg, 1989)

## Group cohesion



**CALPAS-G** (Crowe & Grenyer, 2008)

0 = 'Not at all' to 6 = 'Very much so'

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DOI: 10.1089/jayao.2017.0001

**Brief Report**

## Therapeutic Alliance and Group Cohesion in an Online Support Program for Adolescent and Young Adult Cancer Survivors: Lessons from "Recapture Life"

Brittany C. McGill, MPsyCh(Clin)<sup>1,2,\*</sup> Ursula M. Sansom-Daly, PhD<sup>1-3,\*</sup> Claire E. Wakefield, PhD<sup>1,2</sup>  
Sarah J. Ellis, BAPsyCh(Hons)<sup>1,2</sup> Eden G. Robertson, BAPsyCh(Hons)<sup>1,2</sup> and Richard J. Cohn, MBBS<sup>1,2</sup>



TABLE 1. ALLIANCE AND GROUP COHESION  
AND CHANGE OVER TIME

	<i>First module M(SD)</i>	<i>Last module M(SD)</i>	<i>p-value<sup>a</sup></i>
Participant ratings <sup>b</sup>			
Understanding	5.9 (2.2)	6.1 (2.0)	0.714
Confidence	6.1 (1.0)	6.2 (1.4)	0.799
Appreciation	6.5 (0.6)	6.4 (1.3)	0.457
Working correctly	6.2 (0.8)	6.0 (1.4)	0.526



TABLE 1. ALLIANCE AND GROUP COHESION  
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Appreciation	6.5 (0.6)	6.4 (1.3)	0.457
Working correctly	6.2 (0.8)	6.0 (1.4)	0.526
Therapist ratings <sup>c</sup>			
Comfort	7.7 (1.2)	8.1 (1.1)	0.066
Rapport	7.8 (1.0)	8.2 (1.5)	0.133
Openness	7.9 (1.5)	8.4 (1.2)	0.006*
Trust	7.7 (1.3)	8.3 (1.4)	0.006*
Peer to peer	6.8 (2.1)	7.0 (1.9)	0.549
Motivation	7.8 (1.1)	8.4 (1.4)	0.002*
Engagement	7.7 (1.5)	7.7 (1.7)	0.812

<sup>a</sup>Paired-samples *t*-tests.

<sup>b</sup>*N*=39, 12 groups; items from the Working Alliance Inventory rated on a scale from 1 to 7.

<sup>c</sup>Items rated on a scale from 1 to 10.

\*Statistically significant.



# Clinical management

- **Ethical/clinical challenges – unique to cancer issues**

**Australian  
Psychologist**



ORIGINAL ARTICLE

## **Ethical and Clinical Challenges Delivering Group-based Cognitive-Behavioural Therapy to Adolescents and Young Adults with Cancer Using Videoconferencing Technology**

Ursula M Sansom-Daly,<sup>1,2,3</sup> Claire E Wakefield,<sup>1,2</sup> Brittany C McGill,<sup>1,2</sup> and Pandora Patterson<sup>4,5</sup>

<sup>1</sup>Kids Cancer Centre, Sydney Children's Hospital, <sup>2</sup>School of Women's and Children's Health, University of New South Wales, <sup>3</sup>Sydney Youth Cancer Service, Prince of Wales/Sydney Children's Hospital, <sup>4</sup>Research, Evaluation and Social Policy, CanTeen Australia, and <sup>5</sup>Cancer Nursing Research Unit, Sydney Nursing School, The University of Sydney



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# Clinical management

- **Ethical/clinical challenges – unique to cancer issues**

Australian  
Psychologist



ORIGINAL ARTICLE

## Ethical and Clinical Challenges in Managing Cognitive-Behavioural Therapy with Cancer Using Video

Ursula M Sansom-Daly,<sup>1,2,3</sup> Claire E Waugh<sup>4</sup>

<sup>1</sup>Kids Cancer Centre, Sydney Children's Hospital, <sup>2</sup>School of Psychology, University of New South Wales, <sup>3</sup>Prince of Wales/Sydney Children's Hospital, <sup>4</sup>Research School, The University of Sydney

- Clinical/ethical issues documented among 3-14.3% participants
- Almost half detected through routine checks in protocol
  1. managing mental health risks without face-to-face contact;
  2. facilitating discussion about potentially distressing cancer-related experiences in a group setting;
  3. responding appropriately to participants' health changes during the trial (e.g.,  $n=6$  cancer relapses); and
  4. the need to be mindful of a range of 'survivorship' experiences and outlooks experiences and outlooks.



# Clinical management

- **Ethical/clinical challenges – unique to cancer issues**

Australian  
Psychologist



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Pediatr Blood Cancer 0000;00:000–000

## **LETTER TO THE EDITOR**

### **The Reality of Relapse: Impact of Cancer Relapse on Survivorship Interventions and Patient-Reported Outcomes Data**



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# Clinical management

- **Ethical/clinical challenges – unique to cancer issues**

Australian  
Psychologist



- Six cancer relapses occurred across the trial
- Withdrawn from RCT and referred to appropriate support as necessary
- Impact on group? And impact on long term data?



<sup>1</sup>Kids Cancer Centre, Sydney Children's Hospital, <sup>2</sup>School of Women's and Children's Health, University of New South Wales, <sup>3</sup>Sydney Youth Cancer Service, Prince of Wales/Sydney Children's Hospital, <sup>4</sup>Research, Evaluation and Social Policy, CanTeen Australia, and <sup>5</sup>Cancer Nursing Research Unit, Sydney Nursing School, The University of Sydney

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## LETTER TO THE EDITOR

**The Reality of Relapse: Impact of Cancer Relapse on Survivorship Interventions and Patient-Reported Outcomes Data**



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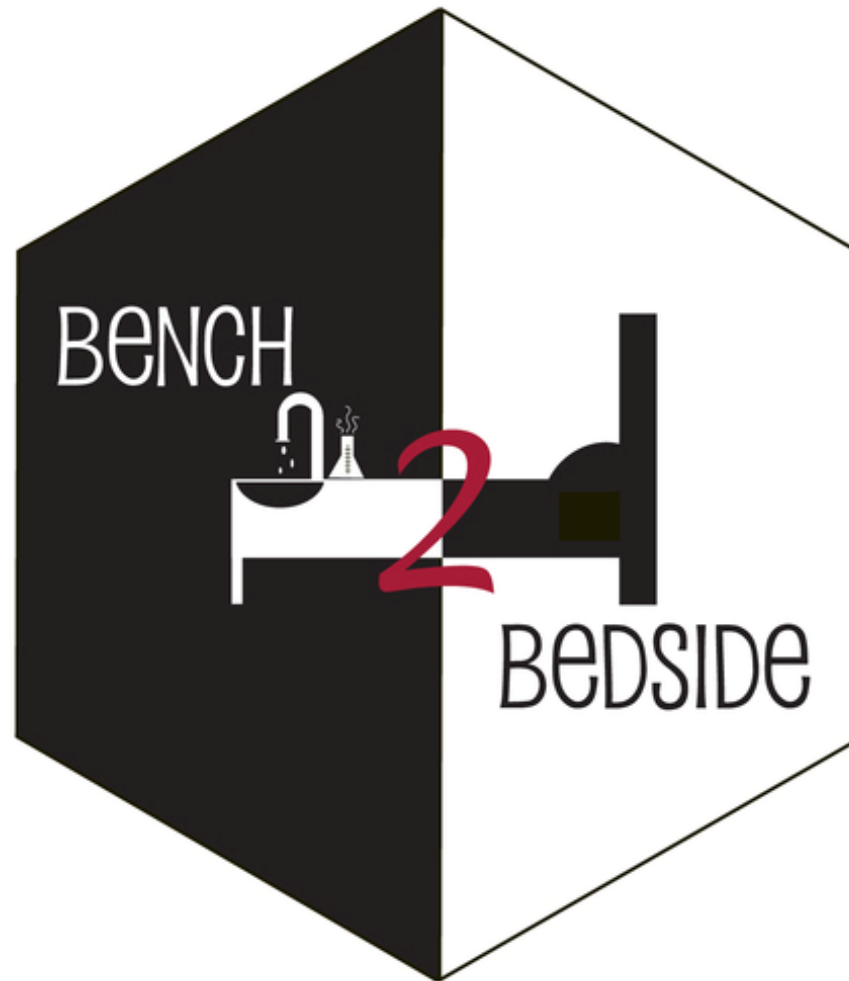
Intervention  
development/evaluation



Moving to  
implementation

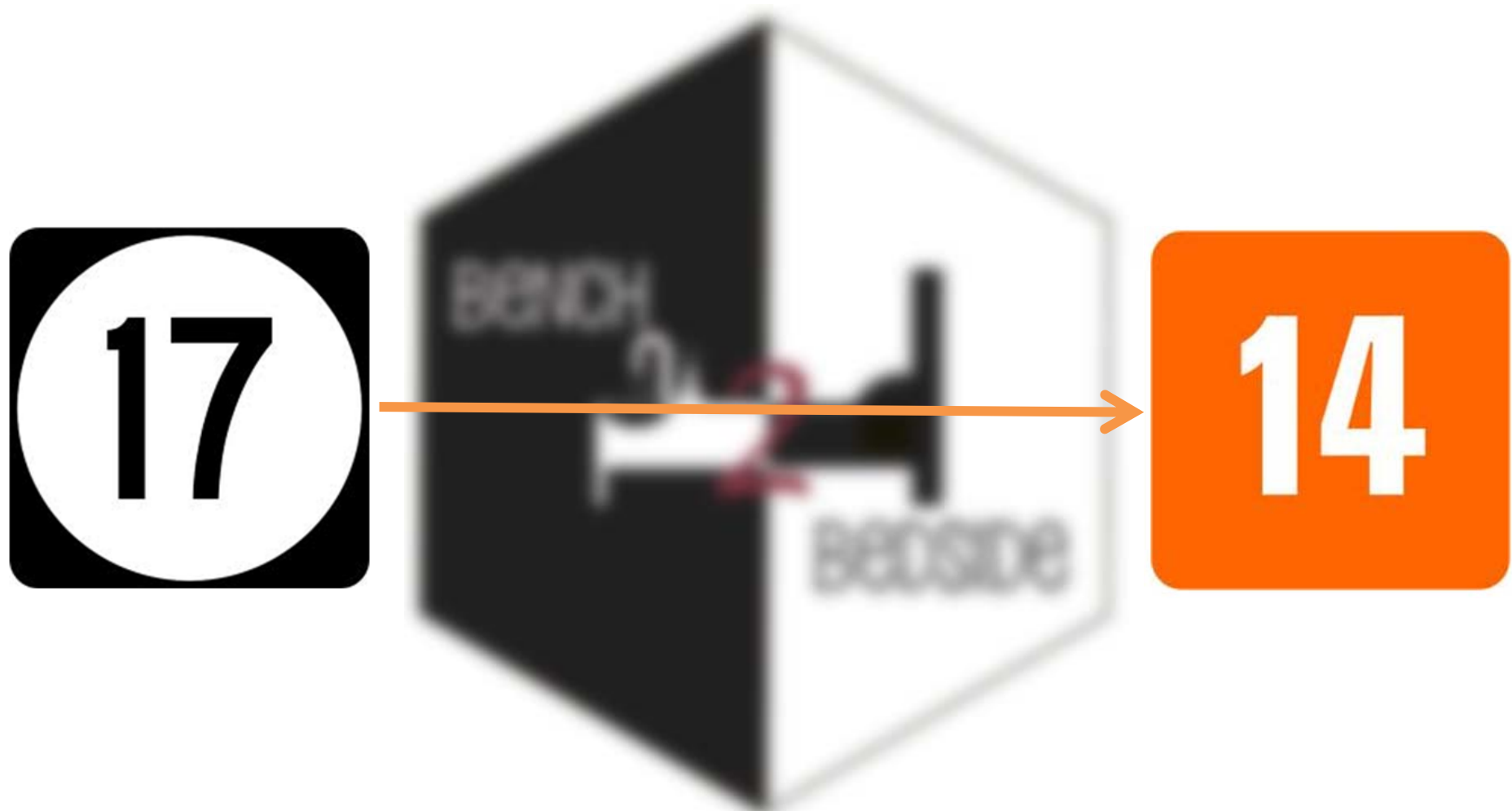


# Translating evidence to practice





# Translating evidence to practice



Balas EA, Boren SA. Managing clinical knowledge for health care improvement. In: Bemmell J, McCray AT, editors. Yearbook of Medical Informatics 2000: Patient-Centered Systems. Stuttgart, Germany: Schattauer Verlagsgesellschaft mbH; 2000:65-70.

11



# (In)feasibility of hospital delivery?

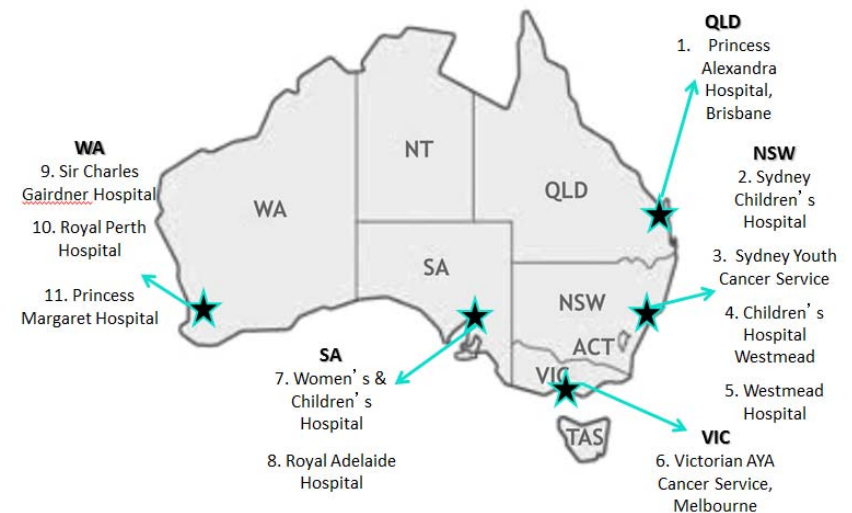
- Challenges involved in multisite hospital recruitment...

## General correspondence

**Something's got to give: time-cost trade-offs in site-specific research approval can negatively impact patient recruitment in multi-institutional studies**

Internal Medicine Journal **47** (2017) 1088–1089

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# (In)feasibility of hospital delivery?

- **Challenges involved in multisite hospital recruitment...**

## General correspondence

- 22 versions of PIS/consent forms (*e.g., different logos*)
- Median: 26 documents/submission (range: 9-28)
- Median weeks from submission to approval=16 (range: 4-39)
- Eight sites recruited < 5 participants, 3 sites recruited none...

Internal Medicine Journal 47 (2017) 1088–1089  
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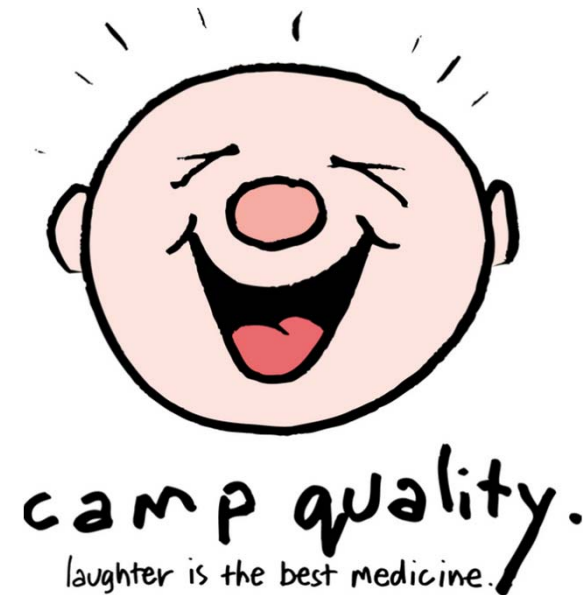




## AYA psychology workforce in Australia

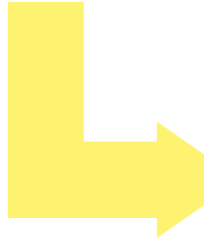


# Growing role of community organisations

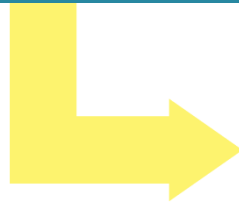




Intervention  
development/evaluation



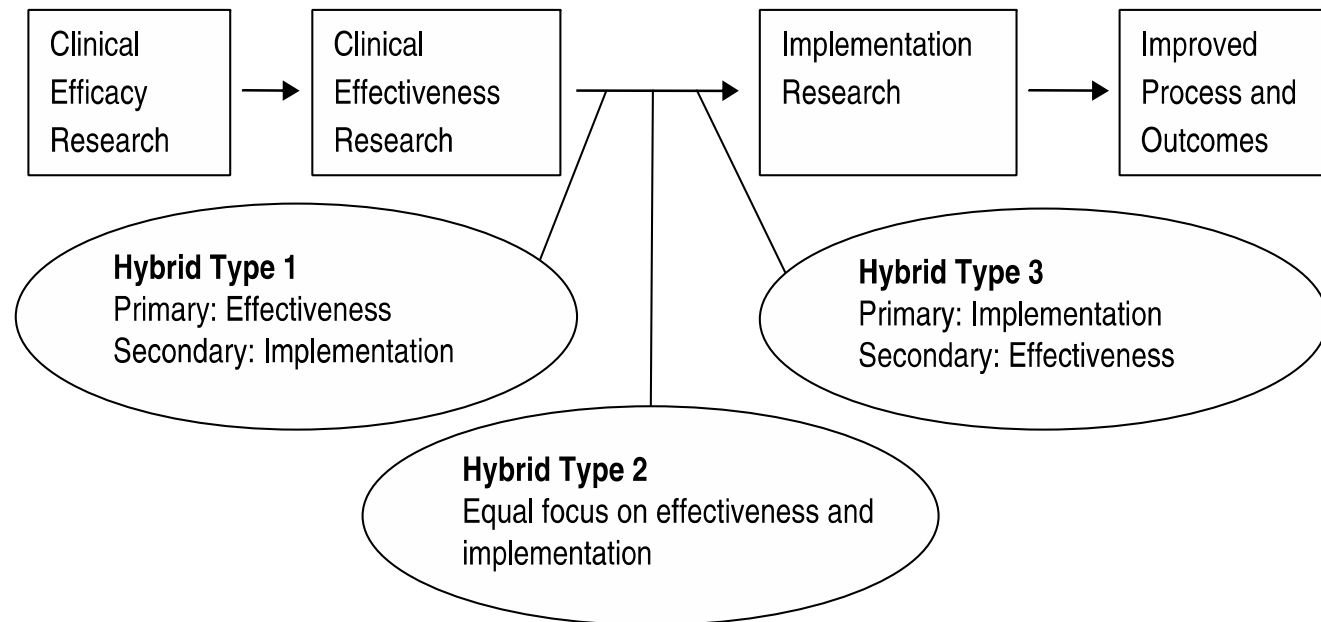
Moving to  
implementation



Trial design



# Phase III trial design: Hybrid implementation-effectiveness

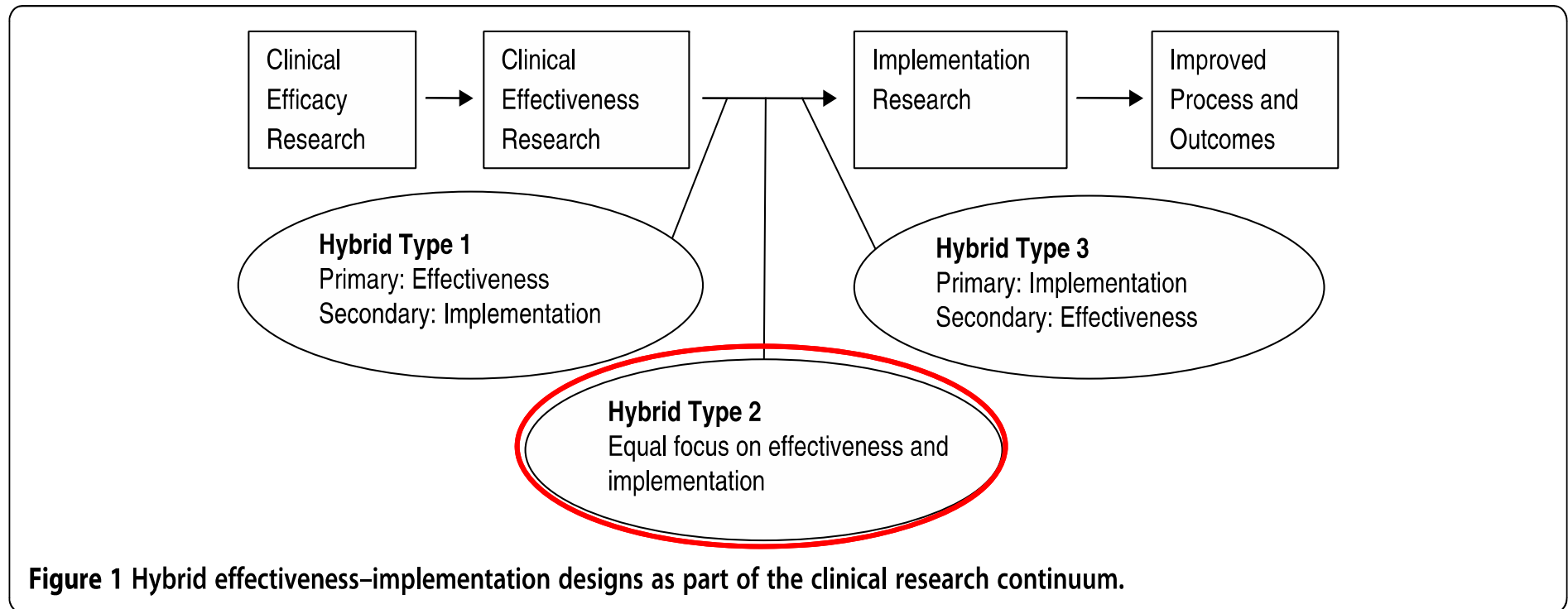


**Figure 1** Hybrid effectiveness–implementation designs as part of the clinical research continuum.

From Cully et al, 2012, *Implementation Science*



# Phase III trial design: Hybrid implementation-effectiveness

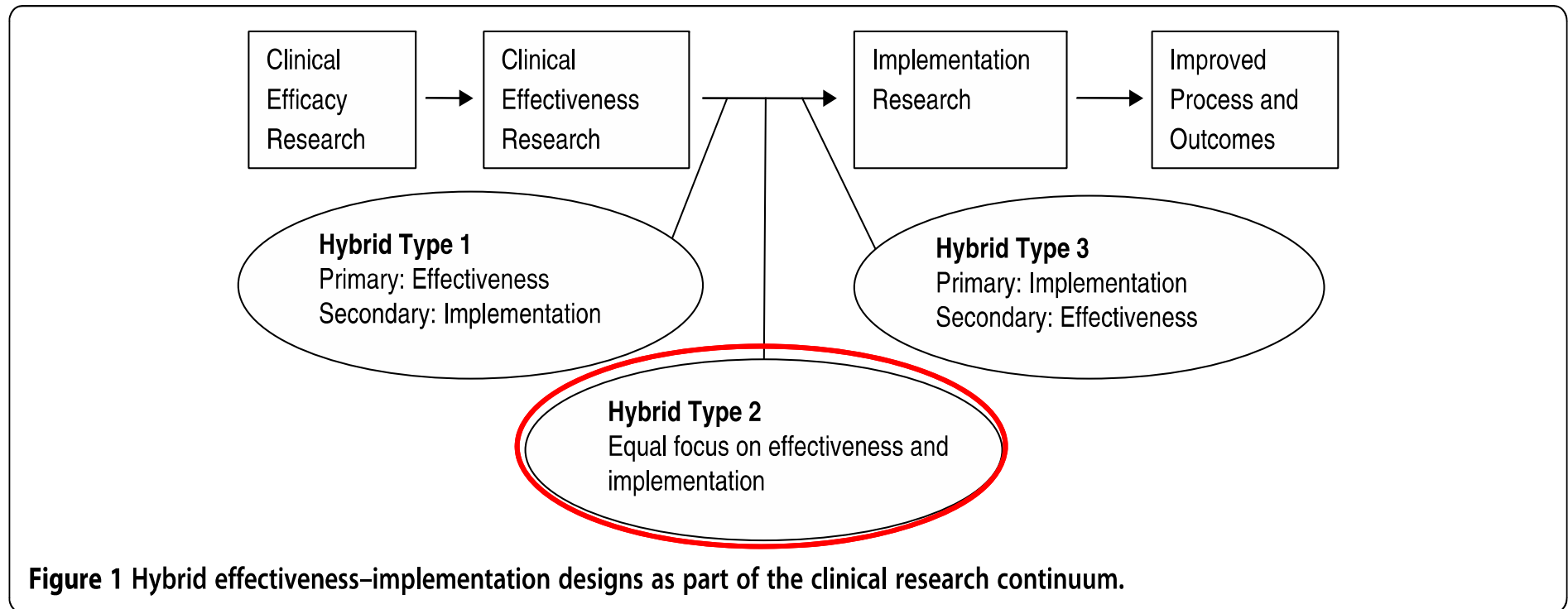


**Figure 1** Hybrid effectiveness–implementation designs as part of the clinical research continuum.

From Cully et al, 2012, *Implementation Science*



# Phase III trial design: Hybrid implementation-effectiveness



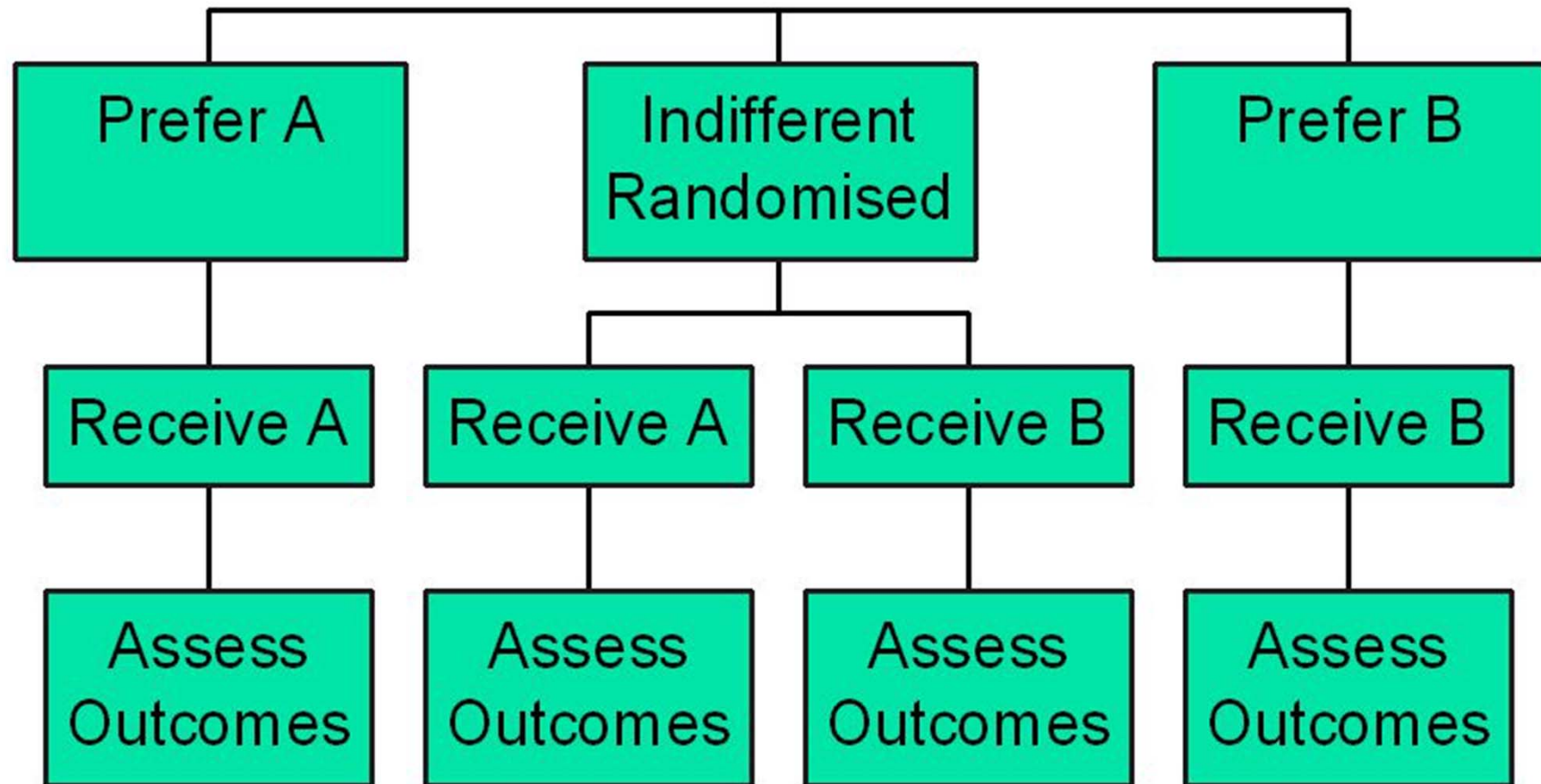
From Cully et al, 2012, *Implementation Science*

- **Target:** N=128 AYAs from community partner organisations (80% power)
- **Measures:** intervention outcomes (EG: mental health sx) + implementation process (EG: reach, fidelity)



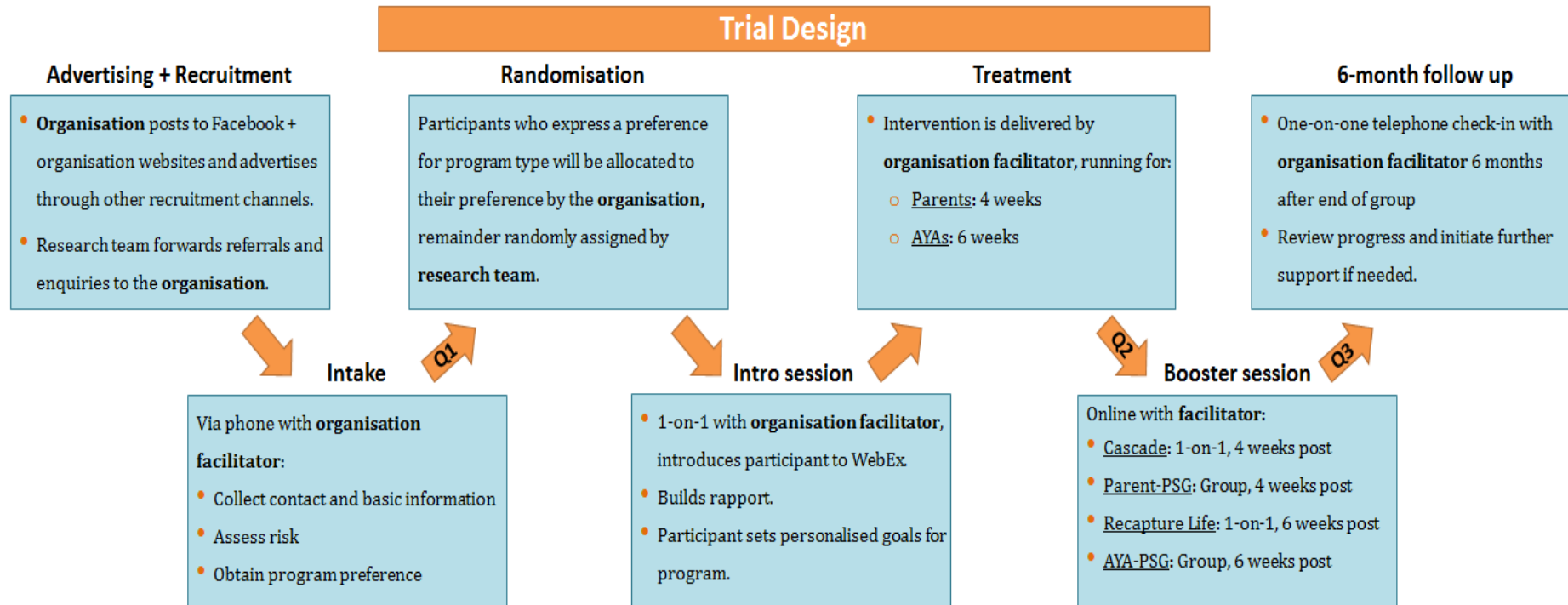
# Phase III trial design: Patient-preference model

---



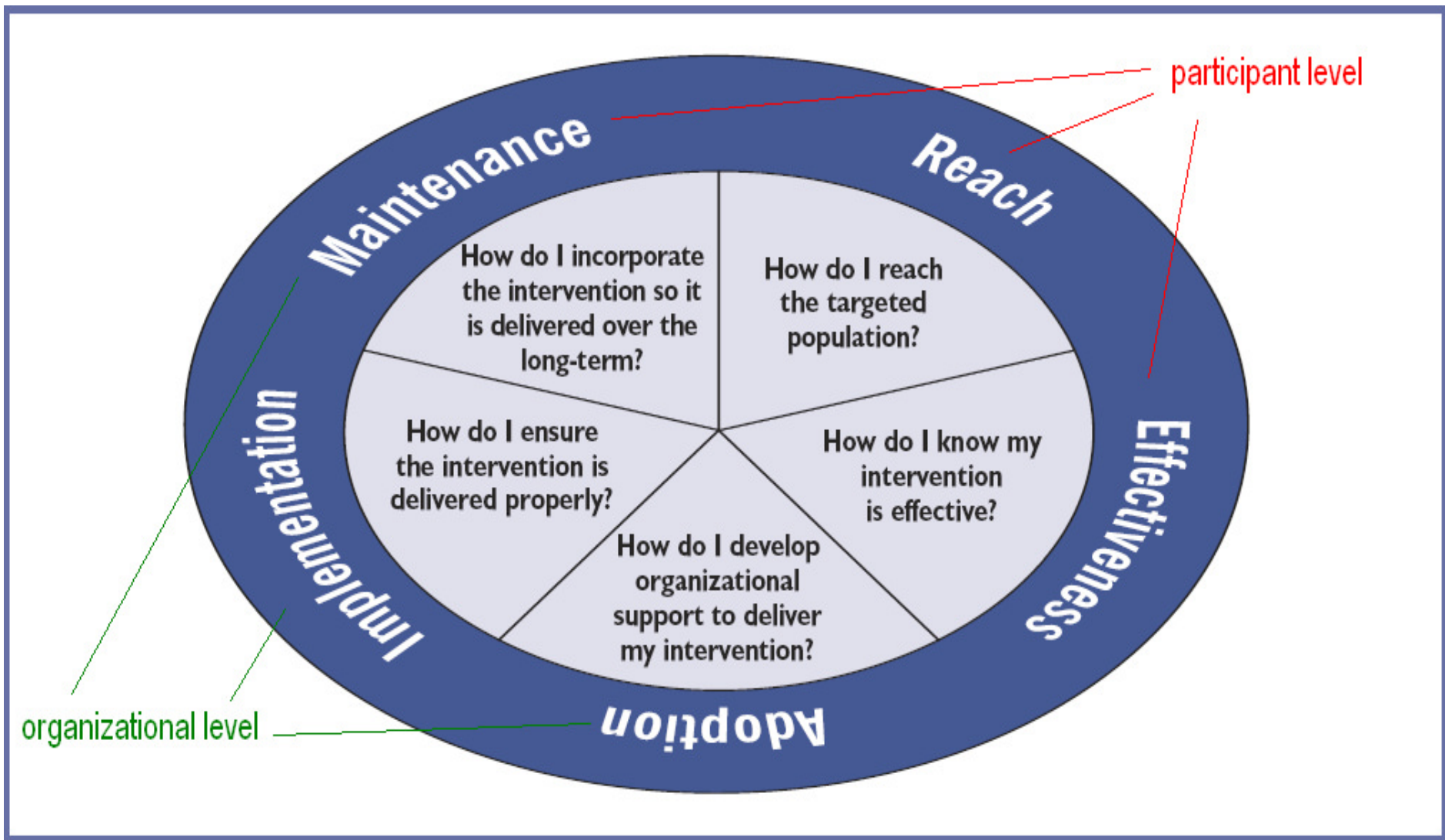


# Trial overview



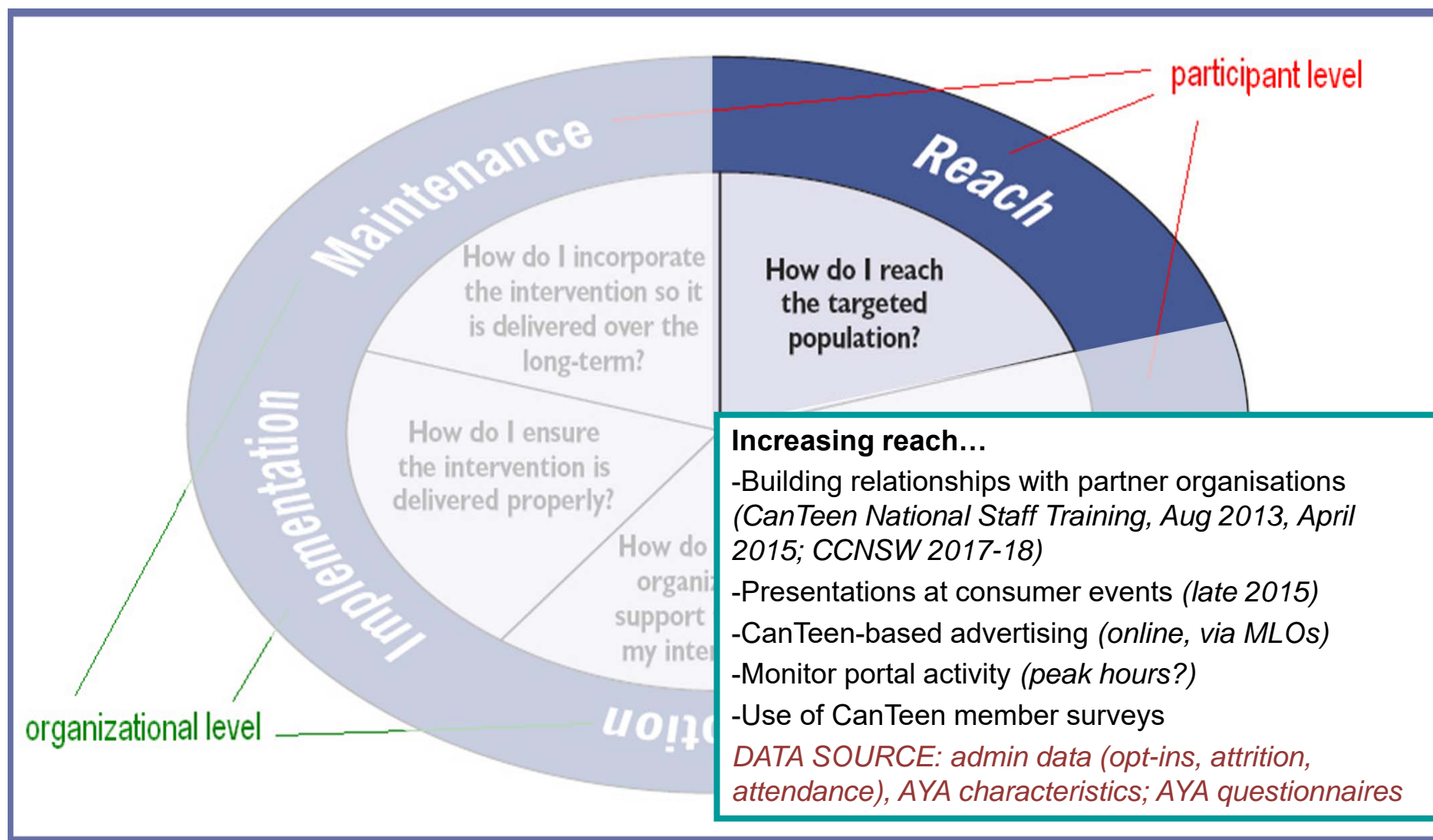


# RE-AIM Framework *(Glasgow, Vogt, & Boles, 199)*



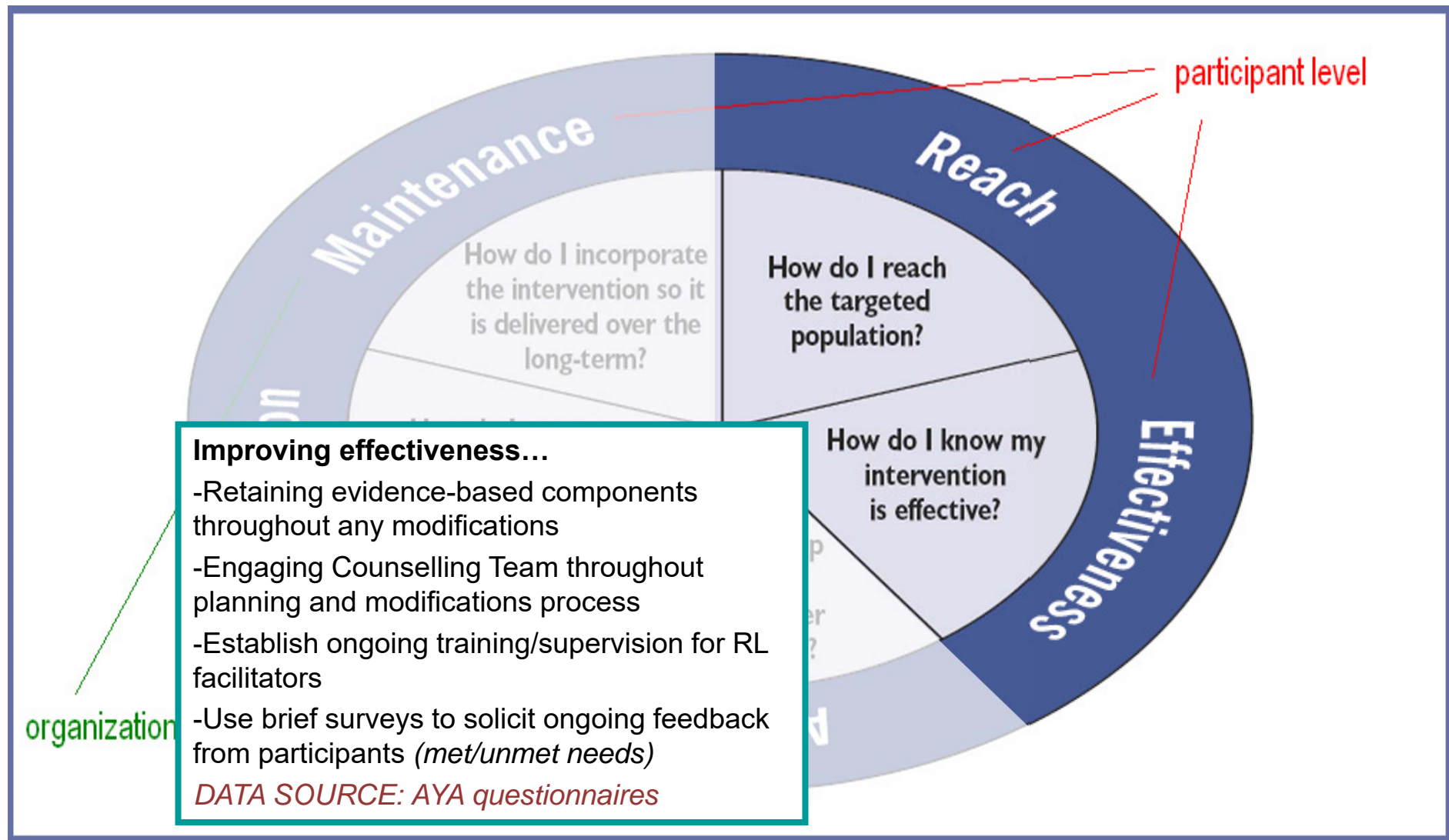


# RE-AIM Framework *(Glasgow, Vogt, & Boles, 199)*





# RE-AIM Framework *(Glasgow, Vogt, & Boles, 199)*



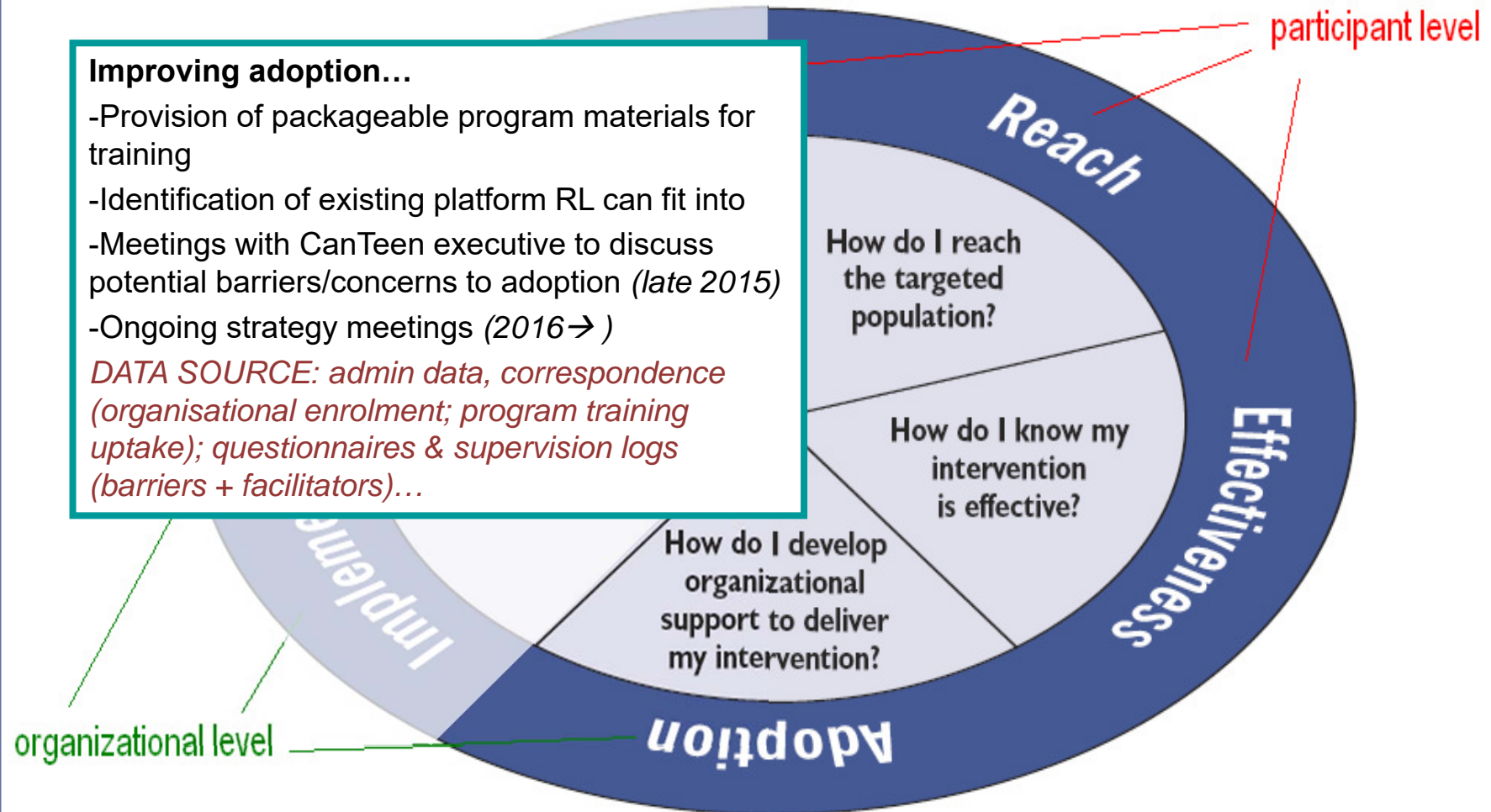


# RE-AIM Framework *(Glasgow, Vogt, & Boles, 199)*

## Improving adoption...

- Provision of packageable program materials for training
- Identification of existing platform RL can fit into
- Meetings with CanTeen executive to discuss potential barriers/concerns to adoption *(late 2015)*
- Ongoing strategy meetings *(2016→)*

*DATA SOURCE: admin data, correspondence (organisational enrolment; program training uptake); questionnaires & supervision logs (barriers + facilitators)...*



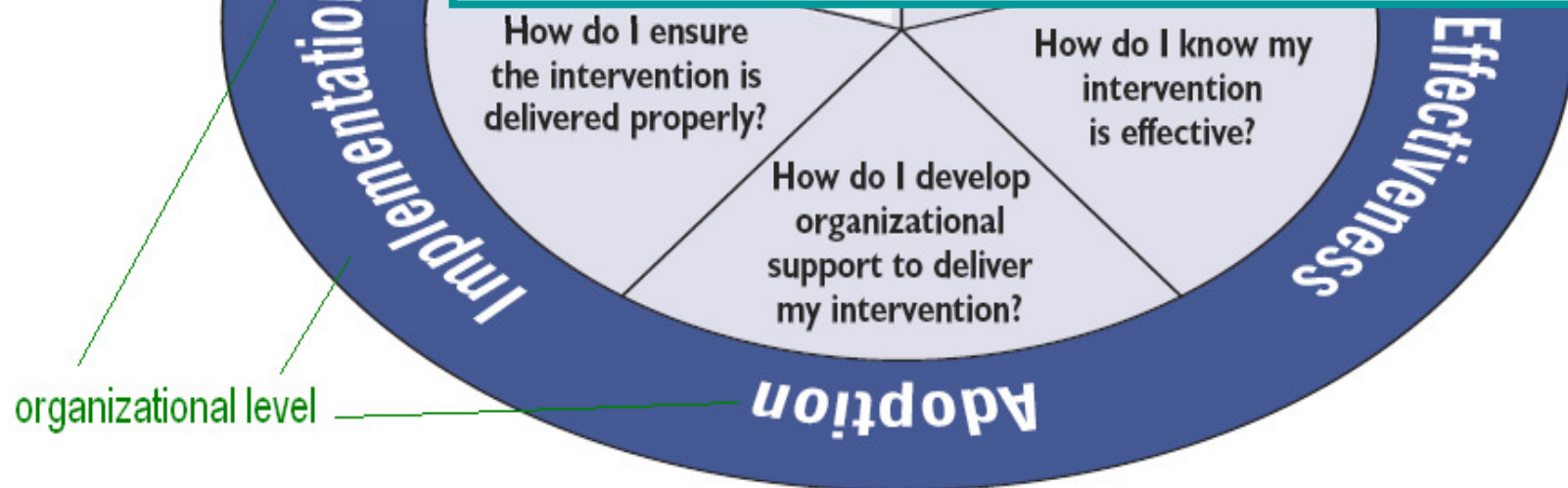


# RE-AIM Framework *(Glasgow, Vogt, & Boles, 199)*

## Improving implementation...

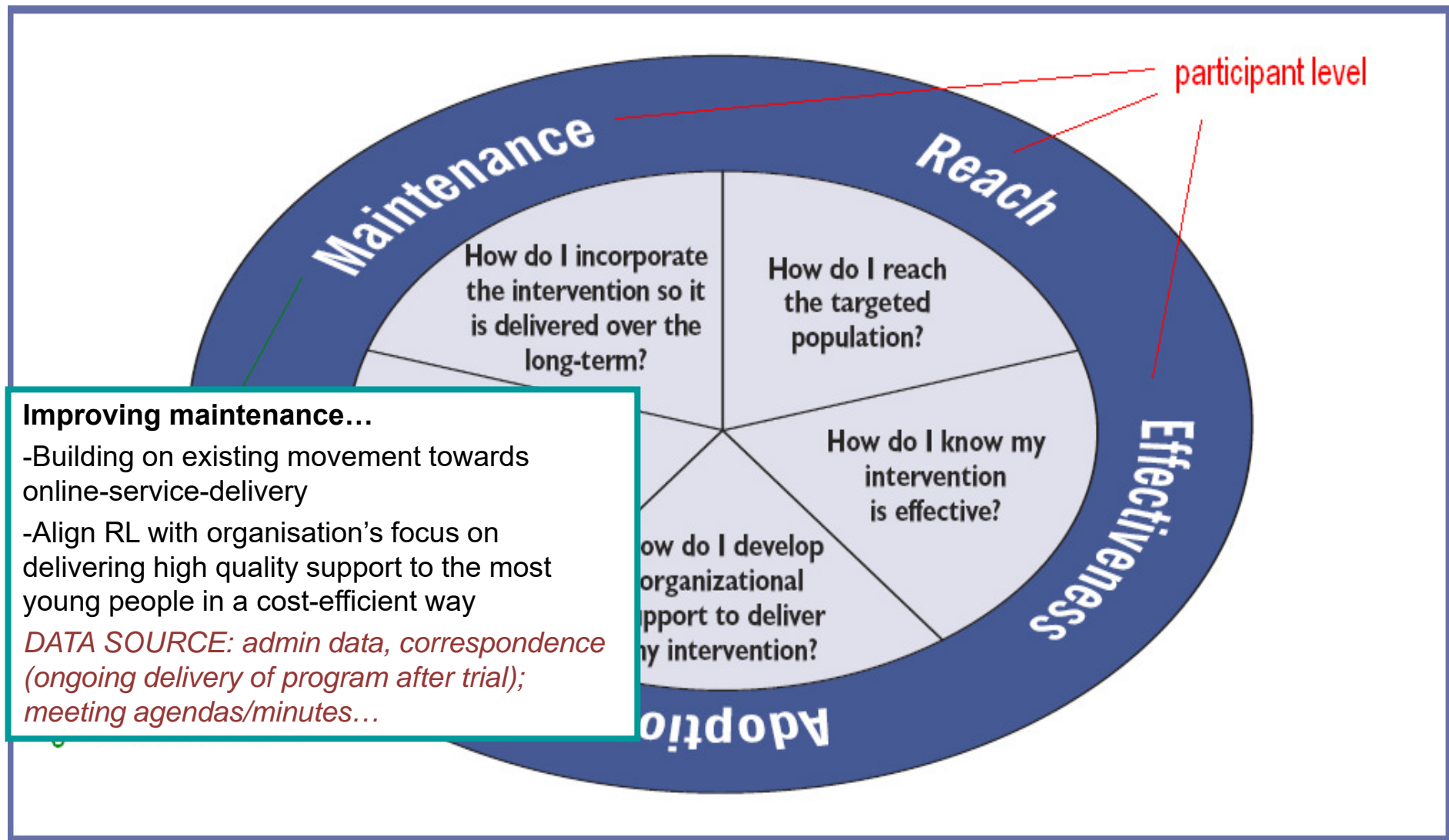
- Involving Counselling Team in tailoring RL to fit with their typical service provision
- Detailed training manuals; training targeted to online groups
- Focus groups with Counselling Team
- Building in flexible delivery → work with Counselling Team to identify 'core' and 'non-core' session elements
- Online log following each session (fidelity)

*DATA SOURCE: admin data, correspondence (staff confidence); community staff questionnaires & supervision logs (barriers + facilitators; manual adherence); staff + AYA questionnaires (technical issues)...*



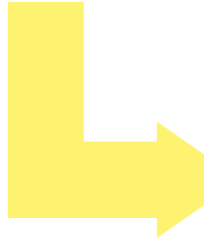


# RE-AIM Framework *(Glasgow, Vogt, & Boles, 199)*

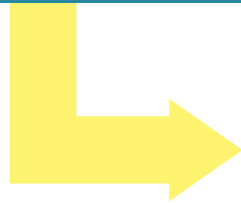




Intervention  
development/evaluation



Moving to  
implementation



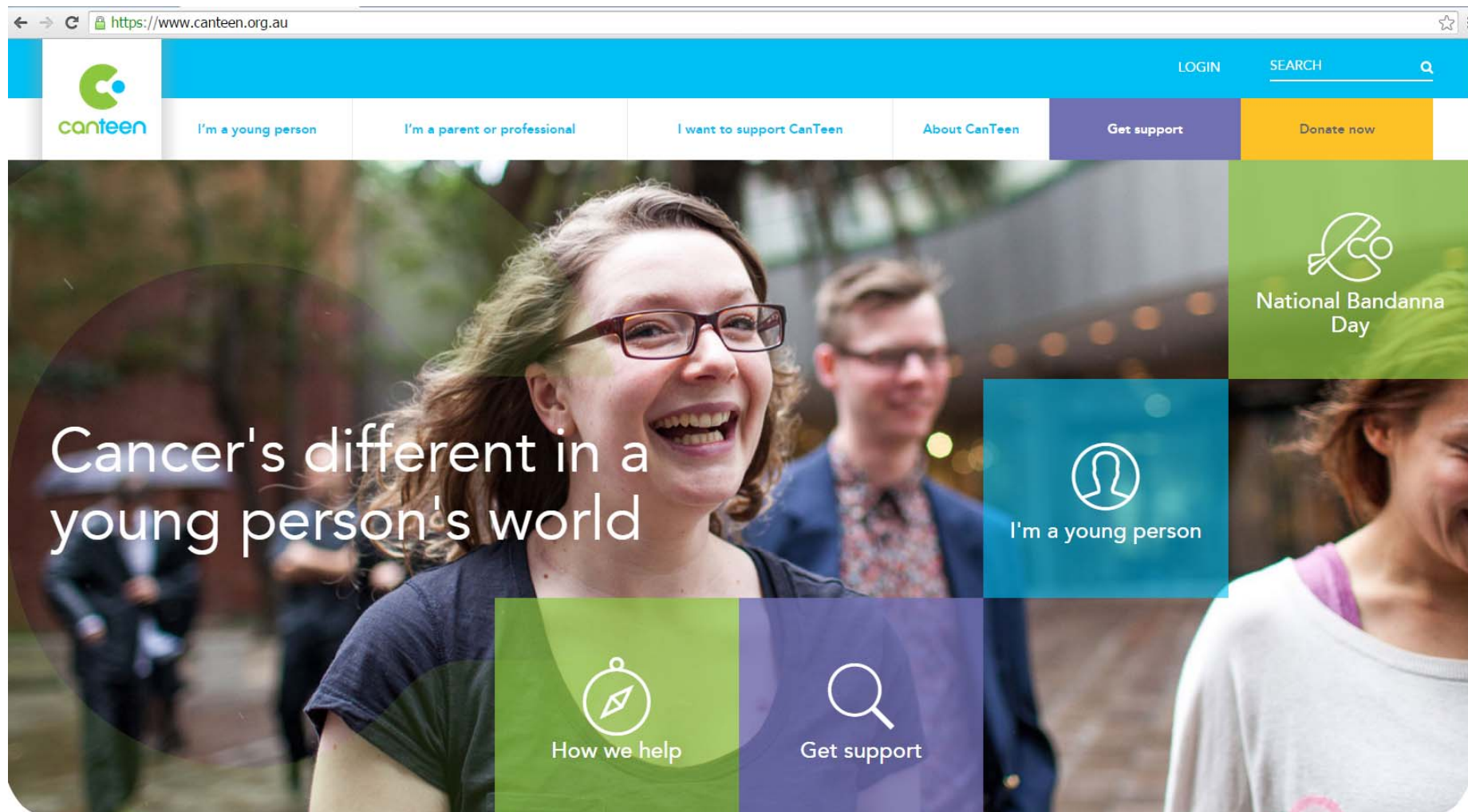
Trial design



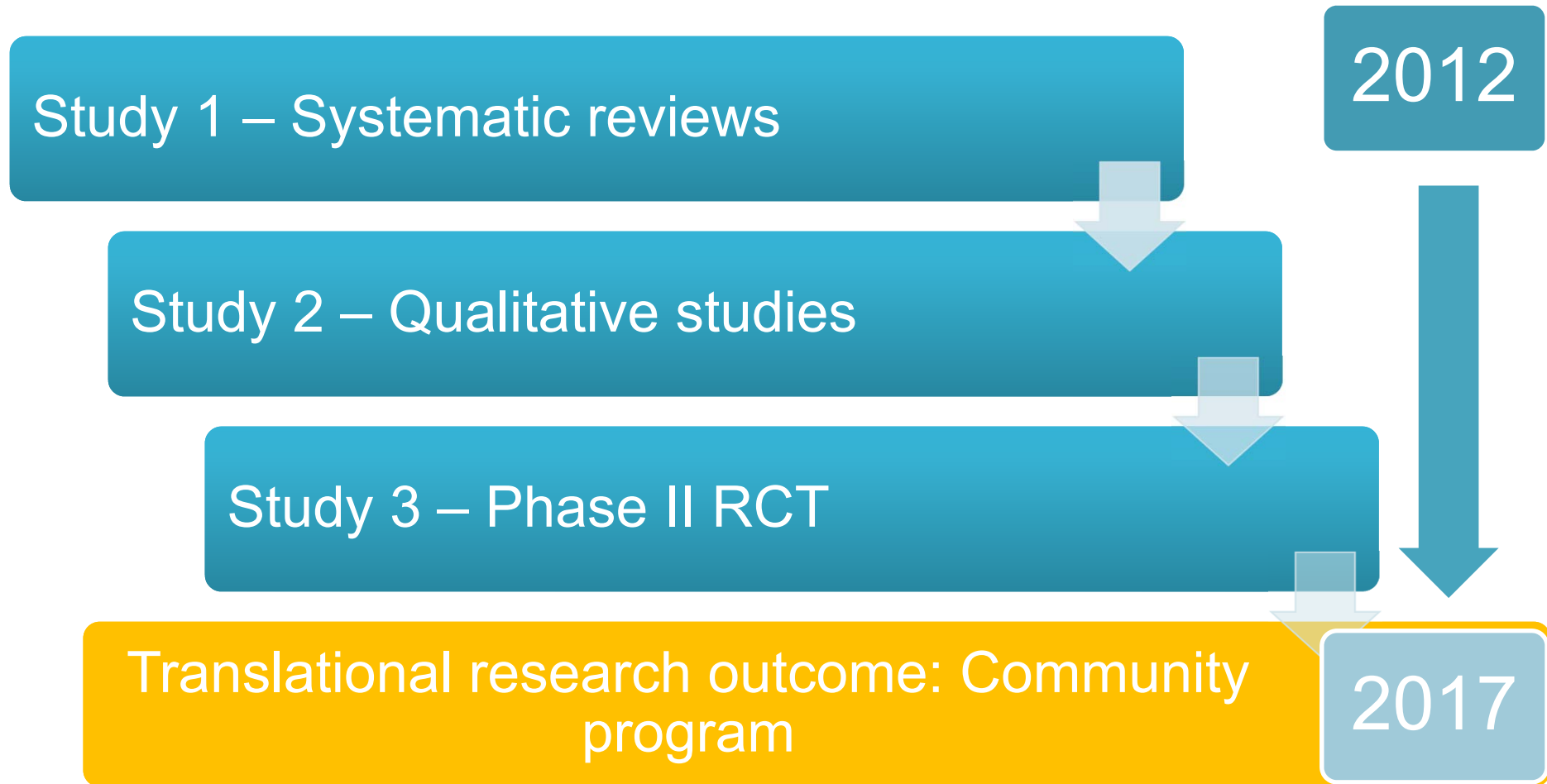
Experiences so  
far...



# Example collaboration: CanTeen Australia







***...2018: first online group run via CanTeen!***



# Challenges

- **Flexibility** needed to run groups – out of hours times



# Challenges

- **Flexibility** needed to run groups – out of hours times
- Unknown **rate of opt-in** to group option online
  - Implications for logistics of group coordination



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# Challenges

- **Flexibility** needed to run groups – out of hours times
- Unknown **rate of opt-in** to group option online
  - Implications for logistics of group coordination
- Staff **turnover** + fractional staff
- Ongoing issue – lack of guidance around **clinical management** of online groups (*Sansom-Daly, Wakefield, McGill, Wilson, & Patterson, 2015, under review*)
  - Work with CanTeen to marry up existing organisational governance with Recapture



# Facilitators

- **Leveraging existing experience** in counselling teams
  - ...in online interventions
  - ...with AYAs
  - ...in managing clinical issues



# Facilitators

- Leveraging existing experience in counselling teams
  - ...in online interventions
  - ...with AYAs
  - ...in managing clinical issues
- **Match** between program focus + organisational goals



# Facilitators

- Leveraging existing experience in counselling teams
  - ...in online interventions
  - ...with AYAs
  - ...in managing clinical issues
- Match between program focus + organisational goals
- **Division of research/clinical** → less burden?





**Australian Government**

**Cancer Australia**



beyondblue

Kids with Cancer Foundation  
Australia



With thanks



Youth Cancer Services are funded by the Australian Government

**ANZCHOG**

**Australian and New Zealand  
Children's Haematology/Oncology Group**



**UNSW**  
AUSTRALIA



**UNSW**  
AUSTRALIA





# Panel Discussion

Dr Veronica McCabe  
Dr Ursula Sansom-Daly  
Dr Natalie Taylor  
Jill Mills

Facilitator: Professor Claire Wakefield

#IMPSCI  
COMMUNITY  
OF PRACTICE

KIDS  
CANCER  
CENTRE  
SYDNEY CHILDREN'S HOSPITAL

K  
Kids Cancer





# Panel Q&A

Dr Veronica McCabe  
Dr Ursula Sansom-Daly  
Dr Natalie Taylor  
Jill Mills





# Morning Tea






# Rapid Fire Presentation

Michael Marthick

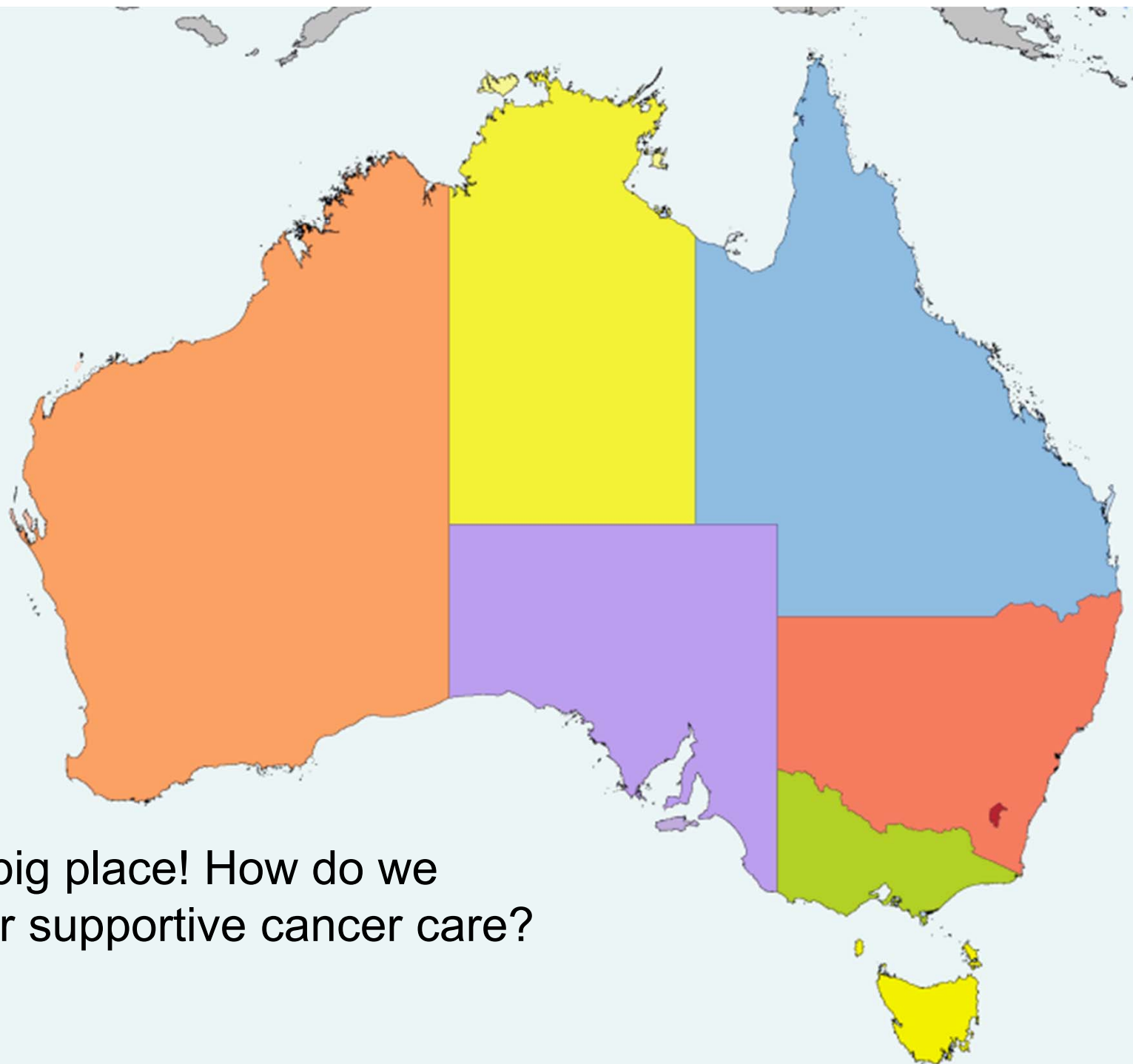


A photograph showing a person's hands typing on a laptop keyboard. The laptop screen displays a web-portal for 'Oncology Livingroom Wellbeing hub'. The portal features a large green circle with the text 'Welcome to the Living room Wellbeing hub' and a 'Find out more' button. Below this, there are several articles and images related to physical activity and symptom tracking. To the left of the laptop, there is a blue and white balance board and an orange ball. The background is a light-colored wall with some orange and yellow paint splatters.

# Feasibility and acceptability of an interactive web-portal for oncology patient physical activity and symptom tracking

Michael Marthick, Haryana Dhillon, Bonny Cheema, Jennifer Alison, Tim Shaw

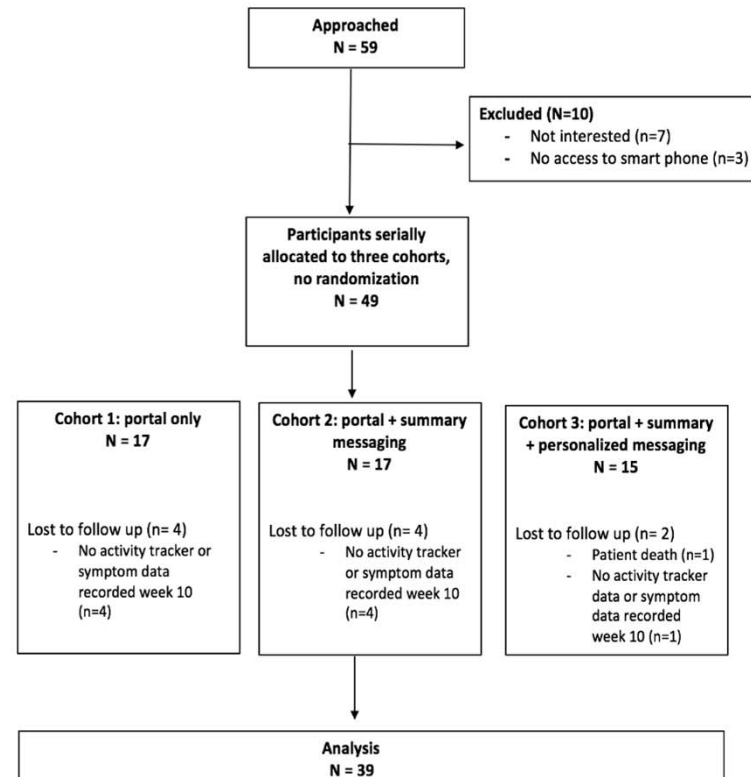
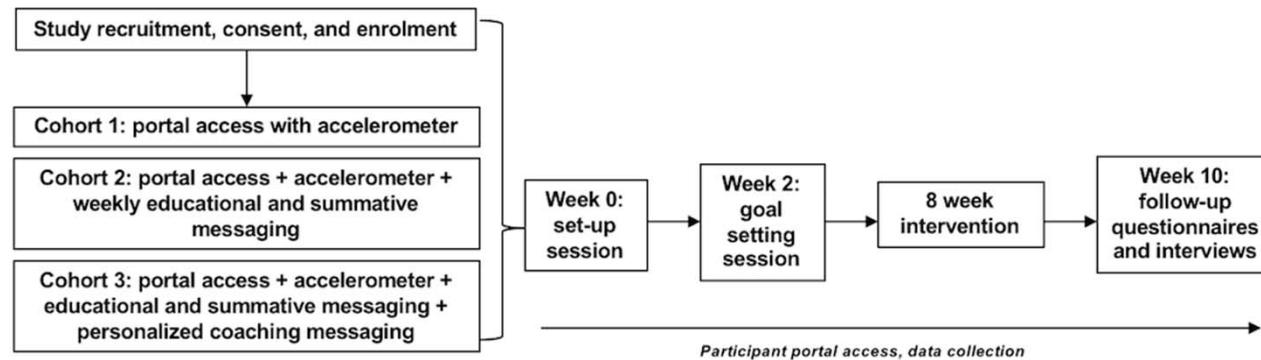




It's a big place! How do we deliver supportive cancer care?

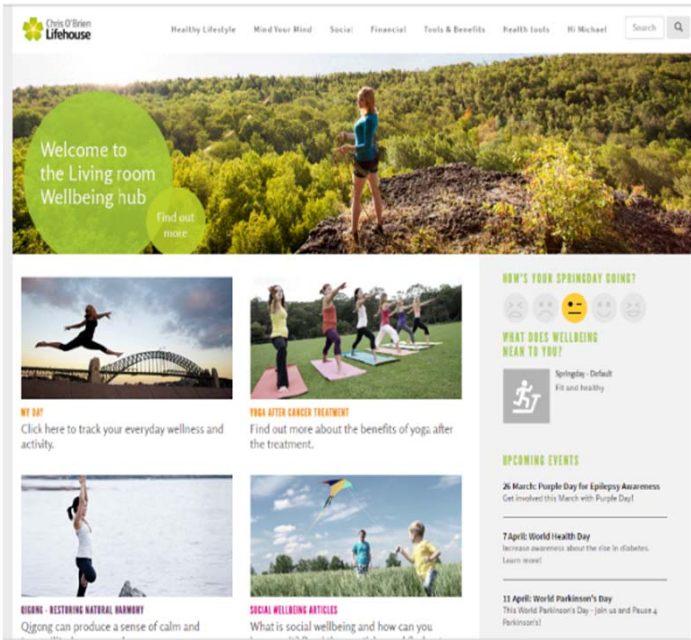


# Our Approach – 3 Arm Phase I Study





# Education/ Monitoring/ Messaging



Chris O'Brien Lifehouse Healthy Lifestyle Mind Your Mind Social Financial Tools & Benefits Health tools

Hi Vee

This is your coach Michael,

I'm impressed with your sleep scores. Excellent

Your average steps is around 5000 per day over the last week or two. Do you think 6000 is a good target for us to work towards?

Thank you and have a great day!

Michael

Chris O'Brien Lifehouse Healthy Lifestyle Mind Your Mind Social Financial Tools & B

**My Day**

< FRIDAY 1 APRIL > **TODAYS TOTAL 27 POINTS**

How many steps did I walk today?

Steps: 6400

Learn how to combat sedentary behaviour

**My Devices**

Misfit 0 steps

Manage My Devices

**Fatigue**

Fatigue: 3

**Pain**

Pain: 4

**Nutrition 27 POINTS**

Breakfast: Yes! I made a healthy choice

Snack: I made an OK choice

Lunch: I made an OK choice

Snack: Oops! I missed this meal

Dinner: I made an OK choice





# Results



Table 3. Primary outcome: feasibility of study interventions

	Cohort 1 (n = 17)	Cohort 2 (n = 17)	Cohort 3 (n = 15)
<b>1. Log-ins</b> (WP data logs >2)	7 (41%)	11 (65%)	15 (100%)
<b>2. Questionnaires</b> (completed at follow-up)	12 (71%)	11 (65%)	12/14 <sup>a</sup> (86%)
<b>3. Both 1 and 2</b>	6 (35%)	11 (65%)	12/14 <sup>a</sup> (86%)

<sup>a</sup> one patient death in study period

**Engagement:** Cohort 1 had a mean of 11 symptom logs, cohort 2 a mean of 17 logs and cohort 3 logged the most symptoms over the study period, with a mean of 50 logs

*“it made me just push myself and even on days when I didn't want to walk I thought no my steps were down and I should get out there and go for a walk.” (participant 3, cohort 3)*

**However:** There was a small increase in physical activity levels for each of the groups, but no difference in goal attainment between groups





# Rapid Fire Presentation

Jennifer Cohen





## **Reboot Kids: A randomised controlled trial of a behavioural medicine intervention to prevent obesity and metabolic complications in young cancer survivors recently off treatment**

Dr Jennifer Cohen<sup>1,2</sup>, Prof Richard Cohn<sup>1,2</sup>, Miss Paayal Gohil<sup>1,2</sup>, Miss Lauren Touyz, <sup>1,2</sup> Prof Claire Wakefield<sup>1,2</sup>

*Funded by Cancer Council NSW Program Grant  
Kids Cancer Alliance*

- 1) Discipline of Paediatrics, School of Women's and Children's Health, UNSW Medicine, University of New South Wales, Sydney, NSW, Australia
- 2) Kids Cancer Centre, Sydney Children's Hospital, Randwick, NSW, Australia

**Behavioural Sciences Unit**

*Proudly supported by Kids with Cancer Foundation*



## Importance of Promoting Healthy Eating Habits in Young Survivors of Childhood Cancer

- Cardiovascular disease is the leading non-cancer cause of mortality
- Worsened by risk factors including increased BMI & obesity <sup>2,3</sup>
- Poor dietary habits including a suboptimal intake of fruit and vegetables after cancer treatment<sup>4</sup>

1) D.A, Mulrooney et al. (2014). *Blood*, 124( 21), pp.853 – 853.

2) Ehrhardt MJ & Mulrooney DA. (2015). *The Lancet Diabetes & Endocrinology*, 3(7):494-496.

3) Zhang, F. et al. (2014). *Pediatrics*, peds-2013.

4) Cohen, J., Wakefield, C. E. et al. (2014). *Supportive Care in Cancer*, 23(2), 463-471.



# Reboot Kids Pilot

- Developed Reboot Kids
- Telephone based intervention to improve the fruit and vegetable intake if young survivors of childhood cancer
- Pilot showed good acceptability BUT resource intensive if this is to be implemented long-term


## Table of Contents

HOW TO USE THIS GUIDEBOOK	2
When do you need the guidebook?	2
How is the guide set out?	2
What do I do before my first telephone call?	2
How do I keep track of my goals?	2
MY GOALS	3
WEEK 1: Why are healthy habits important for children after cancer treatment?	6
WEEK 2: The Home Food Environment	33
WEEK 3: Encouraging Children to Eat Vegetables	55
WEEK 4: Summary and Planning for the Future	67
BOOSTER SESSION: Continuing progress after Reboot KIDS	74






# Reboot Kids RCT


[About Us](#)[Login](#)

## Modules


Complete 4 modules, and 1 booster module, at your own pace!  
These core modules will lead you and your child to a healthier future.




**Clinically approved**  
Crafted by clinicians.




**Effective**  
Road to recovery.



**Easy to use**  
Intuitive, sleek interface.




**Made with care**  
Made with thought.



## My Goals

1. Keep track of your goals
2. Set new goals
3. Review previous goals
4. Get into healthy habits

We know it's hard to change, but we'll help you along the way.





# Reboot Kids RCT

## Modules

Getting Ready



Importance of  
healthy eating  
after cancer  
treatment

Module 1



Module 2



Module 3





# Reboot Kids RCT

The screenshot displays the 'Reboot Kids' web application interface. The top navigation bar includes the 'REBOOT' logo, a login status 'Logged in as admin', and links for 'Profile', 'Modules', 'Resources', 'Recipes', 'Admin', 'About Us', and 'Logout'. On the left, a sidebar menu is divided into 'Core Info' and 'Extra Info'. Under 'Core Info', five items are listed: '1) Introduction', '2) Food Pyramid', '3) Importance of healthy eating', '4) Your goals' (which is highlighted in blue), and '5) Barriers'. Under 'Extra Info', two items are listed: '1) Statistics' and '2) Difficulties of healthy eating'. The main content area is titled 'Getting Ready' and 'Importance of healthy eating'. It contains text about setting goals and a section titled 'Set 3 goals you would like to aim for!'. Three goal input fields are visible, each with a placeholder text: 'Maintain healthy vegetable serving consumption', 'Avoid purchasing unhealthy foods', and 'Encourage Nethan to eat more healthily'. Below these fields, a paragraph states: 'At the end of this module, we will look at strategies and skills you could use, and steps towards achieving some of these goals.' This is followed by a question: 'Is there one goal in particular that you would like to prioritise?'. Three radio button options are provided: 'Maintain healthy vegetable serving consumption', 'Avoid purchasing unhealthy foods' (which is selected), and 'Encourage Nethan to eat more healthily'. A green 'Saved!' button is located at the bottom of this section. A white pop-up dialog box is overlaid on the right side of the screen, titled 'You've set your goals!'. It contains the text: 'You've successfully set your goals for Reboot Kids, your Profile will now contain the goals you have just set.' Below this text are two links: 'Click here to go to your profile.' and 'Otherwise, press Continue to go to the next section.' A green 'Continue' button is at the bottom right of the pop-up.

REBOOT Logged in as admin Profile Modules Resources Recipes Admin About Us Logout

**Core Info**

- 1) Introduction ✓
- 2) Food Pyramid ✓
- 3) Importance of healthy eating ✓
- 4) Your goals ✓
- 5) Barriers ✓

**Extra Info**

- 1) Statistics
- 2) Difficulties of healthy eating

**Getting Ready**

## Importance of healthy eating

Thinking about what you have just learnt about the importance of healthy eating...

Do you have any specific goals in mind or can you think of some changes you'd like to make to what Nethan eats?

During the next following modules we will be looking at strategies and skills you could use, and steps towards achieving some of these goals.

**Set 3 goals you would like to aim for!**

Maintain healthy vegetable serving consumption

Avoid purchasing unhealthy foods

Encourage Nethan to eat more healthily

At the end of this module, we will look at strategies and skills you could use, and steps towards achieving some of these goals.

**Is there one goal in particular that you would like to prioritise?**

☐ Maintain healthy vegetable serving consumption

☒ Avoid purchasing unhealthy foods

☐ Encourage Nethan to eat more healthily

✓ Saved!

**You've set your goals!**

You've successfully set your goals for Reboot Kids, your Profile will now contain the goals you have just set.

[Click here](#) to go to your profile.

Otherwise, press **Continue** to go to the next section.

Continue



# Reboot Kids RCT

Reboot

Logged in as admin.

ProfileModulesResourcesRecipesAdminAbout UsLogout

Core Info

1) Recap ✓  
2) Overview ✓  
3) The P's and C's ✓  
4) Feeding part 1 ✓  
5) Feeding part 2  
6) Meal Preparation  
7) What to avoid  
8) Strategies

Activities

1) Strategies

Module 3

Mealtimes Strategies - Feeding Part 2

Strategy 4: Offer a variety of foods and introduce new foods regularly

- Don't avoid providing foods you suspect they won't like or that are new
- You can pair a new or disliked food with a liked food eg. add broccoli to a plate of mashed potato and meatballs
- Also, try not to serve the same vegetable two days in a row. This encourages children to **accept variety**
- When you offer or provide your child a disliked or new vegetable you can also provide him/her with a **learning experience** to develop interest in healthy foods

Eg. Did you know corn is a member of the grass family?  
Broccoli is actually a baby flower that hasn't opened yet.

Strategy 5: Make meal times relaxed

- Removing focus from food can work, eg. talk about other things, like what everyone did during the day
- Plan to serve a fruit or vegetable at every meal and snack so even if they reject the vegetables at dinner you know they have had some during the day



Strategy 6: Get kids involved

- Some parents let their children help in the kitchen. Pre-school age children can wash vegies, mash potato, cut snow peas and beans with a plastic knife and put things away

Is there anything your child could do to get involved in food preparation?  
☒ Yes  
☐ No

What would that be?

Save and continue




DS  
CER  
TRE  
ology • transplant  
EN'S HOSPITAL  
1988

UNSW  
SYDNEY



# Reboot Kids RCT


Logged in as admin.

[Profile](#)
[Modules](#)
[Resources](#)
[Recipes](#)
[Admin](#)
[About Us](#)
[Logout](#)

## Resources

### Module 1

**Healthy eating habits**

Putting the five food groups all together

**Vegetable providing diary**

### Module 2

**Home food environments**

Making mealtimes positive

Creating a healthy home environment

Establishing rules

Dealing with change

Sample meal planner

Sample shopping list

Cost saving shopping tips

Ideas for healthy snacks

Seasonal guide to fruit and vegetables

Storing fruit and vegetables

Recipe Links

### Module 3

**Encouraging vegetables**

The P's and C's: a helpful framework

No vegies, please! Managing mealtime behaviour

Preparation strategies

Strategies best avoided

Providing praise

Dealing with misbehaviour

Time out principles

Time out tips

## Module 1

### Vegetable Providing Diary

The more parents offer vegies to children, the more likely they are to eat them over time even if they say no.

For that reason, it is a good reason to record how often you offer vegetables over the next week. Try to record 2 weekdays and 1 day over the weekend.

**EXAMPLE**

For each eating occasion (e.g. breakfast) put a tick in the vegetable column if you offer your child a serve of vegies. Also, put a tick in the next column if she or he tasted the vegetables.

WEEKDAY	VEGETABLES OFFERED (Include the type and amount)	CHILD ACCEPTED (Tick or no tick, report if child had a taste or ate % of the serve)
E.g. Morning snack	✓ ½ cup chopped up carrots at school at 10am	✓
E.g. Lunch	✓ A cheese sandwich filled with ½ cup grated zucchini, carrots and beetroot at 12pm	
E.g. Afternoon snack		
E.g. Dinner	✓ ½ cup of cooked pumpkin with chicken schnitzel at 6pm	½ ✓
E.g. Snack		
TOTAL NUMBER OF TICKS: 3		1½

**MY VEGETABLE PROVIDING FOOD DIARY**

Day One: \_\_\_\_\_ (Insert day of the week)

Include the time	VEGETABLES OFFERED (Include the type and amount)	CHILD ACCEPTED (Tick or no tick, report if child had a taste or ate % of the serve)
Morning snack		
Lunch		
Afternoon snack		
Dinner		
Evening Snack		
TOTAL:		

**Day 2 & Day 3**

Diary for day 2 and day 3.

Day Two: \_\_\_\_\_ (Insert day of the week)


Include the time	VEGETABLES OFFERED (Include the type and amount)	CHILD ACCEPTED (Tick or no tick, report if child had a taste or ate % of the serve)
Morning snack		
Lunch		
Afternoon snack		
Dinner		
Evening Snack		
TOTAL:		

Day Three: \_\_\_\_\_ (Insert day of the week)

Include the time	VEGETABLES OFFERED (Include the type and amount)	CHILD ACCEPTED (Tick or no tick, report if child had a taste or ate % of the serve)
Morning snack		
Lunch		
Afternoon snack		
Dinner		
Evening Snack		
TOTAL:		

**Day 1**

Diary for day 1. Includes an example of how to fill out your vegetable providing diary.

[Download](#) 



# Reboot Kids RCT



Logged in as admin.

Modules

Recipes

Widgets

Survey

About Us

Logout

## Recipes

### Fruit and vegie-based meals and snacks



#### MAGNIFICENT MAKE-AHEAD MINI-FRITTATAS

Contains: Eggs, dairy, vegetables.

These mini-frittatas make fantastic snacks or can be paired with a source of grains (e.g. wholegrain bread) and vegies (e.g. salad) for a delicious and nutritious meal.

Packed with eggs, dairy, and vegetables, each provides a good source of protein, vitamins and minerals for growing bodies, with about half a serve of vegies in each mini-frittata.



#### FANTASTICALLY FLEXIBLE FRUIT SKEWERS

Contains: Fruits!

Fruit skewers are a fun way to get kids in the kitchen and enjoy a variety of fruit. Choose fruits that are soft enough to easily thread skewers through, such as strawberries, grapes, rockmelon. Almost anything goes!



# Reboot Kids RCT: Methodology

## Recruitment

- Multisite – 4 sites across Australia
- 60 parents of CCS aged 2-12 years
- Intervention versus weight-list control

## Sites

- Sydney Children's Hospital
- Children's Hospital Westmead
- Monash Medical
- Lady Cilento



# Acknowledgements

## Authors

Professor Claire Wakefield

Professor Richard Cohn

Ms Lauren Winkler

Ms Paayal Gohil

Ms Jennifer White

Professor Nigel Lovell

Mr. Nethan Tran

Mr. Angus Yuen

## Funding

Kids Cancer Alliance

Cancer Council

University of NSW





# Rapid Fire Presentation

Eden Robertson



@eden\_robertson  
eden.robertson@unsw.edu.au



# Eden Robertson

## *Phd Candidate*

Never Stand Still

Medicine

School of Women's & Children's Health

**Lead:** Eden Robertson, Claire Wakefield, Richard Cohn, Joanna Fardell  
**Co-investigators:** Tracey O'Brien, Glenn Marshall, David Ziegler, Richard Mitchell, Donna Drew, Grace Wong, Phyllis Butow, Joanne Shaw, Andrea Patenaude  
**Research officer:** Pete Techakesari,





# Rationale for study

## Systematic review

Stage 1

*Interviews*

Stage 2

*HCP perspective*

Stage 3

*Clinical pathway  
evaluation*

Stage 4

*Development*

Stage 5

*User-testing*

Stage 6

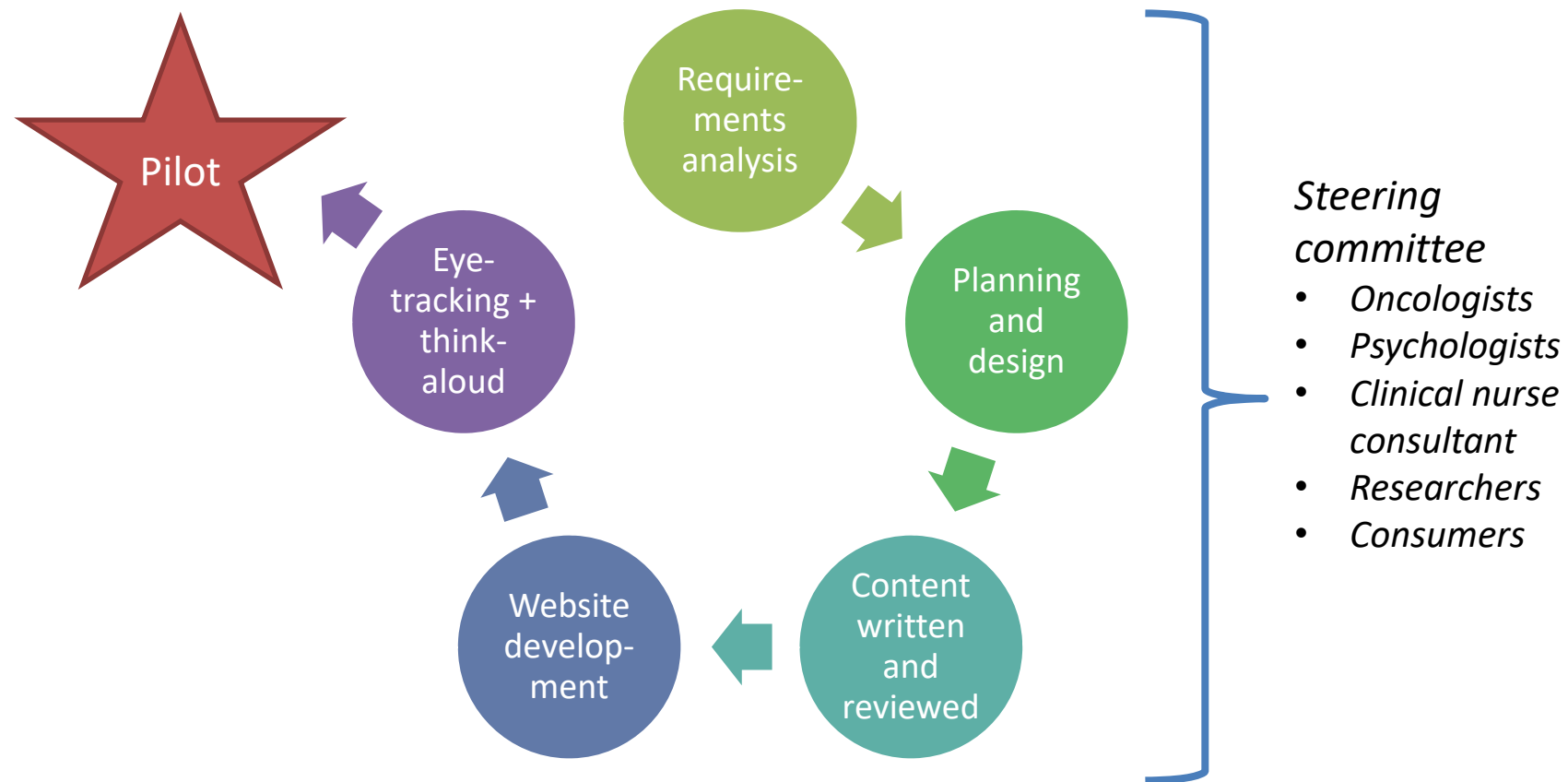
*Pilot*

Woodgate et al., 2010; Hinds et al., 2001



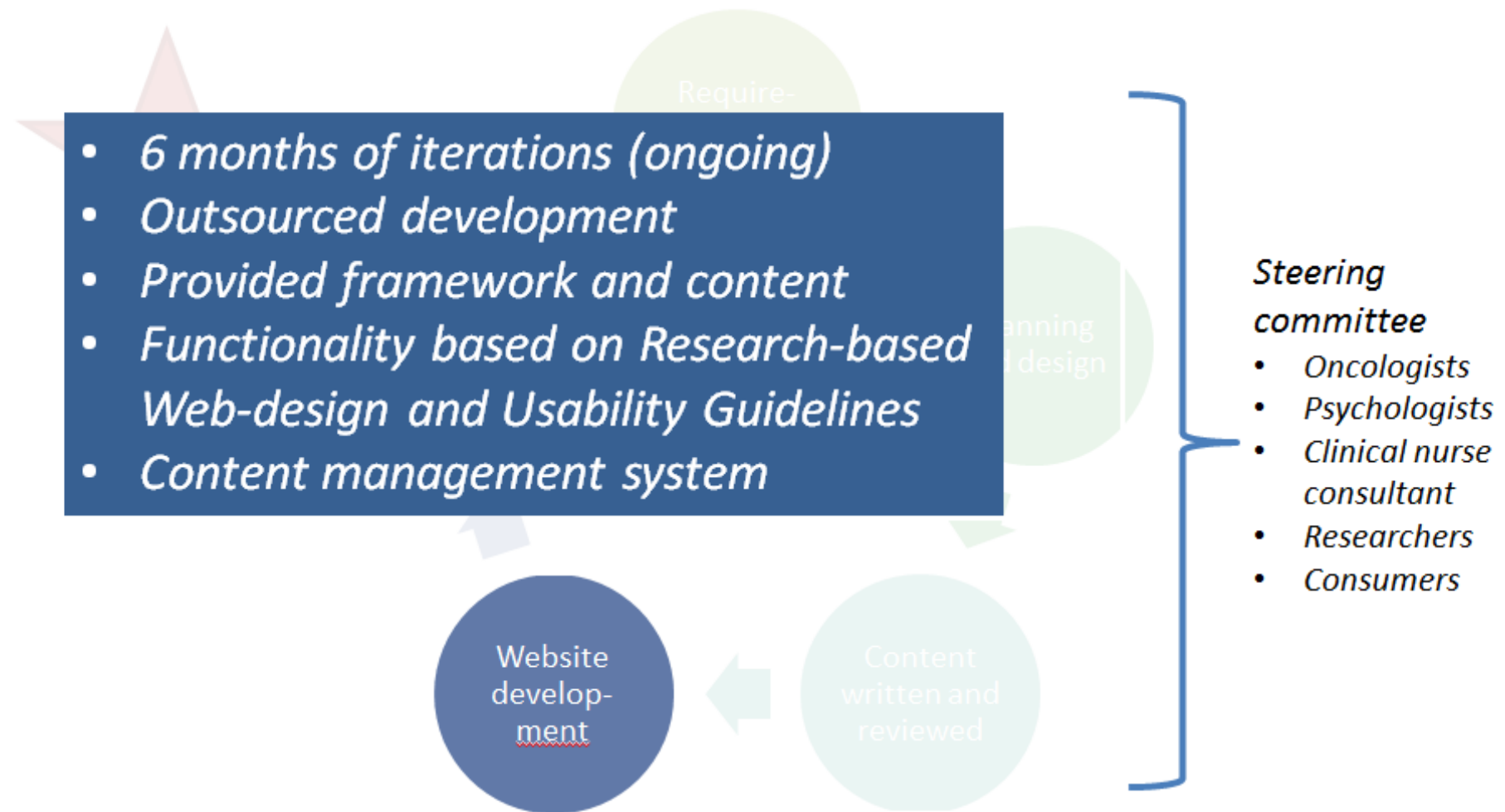
# Development

Developed iteratively using **Agile approach**, and with the **International Patient Decision Aids Standards (IPDAS)**





Developed iteratively using **Agile approach**, and meeting the **International Patient Decision Aids Standards**.





DELTA

<https://deltadecision.com/app/#/instructions>

Apps
RC
Eden Robertson - R
Facebook
Hours & Desk Alloca
Inbox - edenroberts
Journal Dashboard
DELTA - The Decisio
Other bookmarks

INSTRUCTIONS

# REASONS TO ENROL

0=not important
1=somewhat important
2=very important

I want to help my child live, no matter what it takes	0	2	Others recommend enrolling on the trial (e.g. doctors, family members, my child)	0	2
I believe my child will be more closely monitored, and have more care on the trial	0	2	My child's quality of life might be better on the trial	0	2
My child may get access to a new and better treatment	0	2	I feel my values are in line with enrolling on the trial	0	2
Enrolling my child may help future children with cancer	0	2	I want to maintain hope for as long as possible	0	2
I believe the trial will reduce my child's symptoms	0	2			
I have complete confidence in the medical care that is offered and provided to my child	0	2			
I am open-minded to all medical options	0	2			

< PREVIOUS
NEXT >

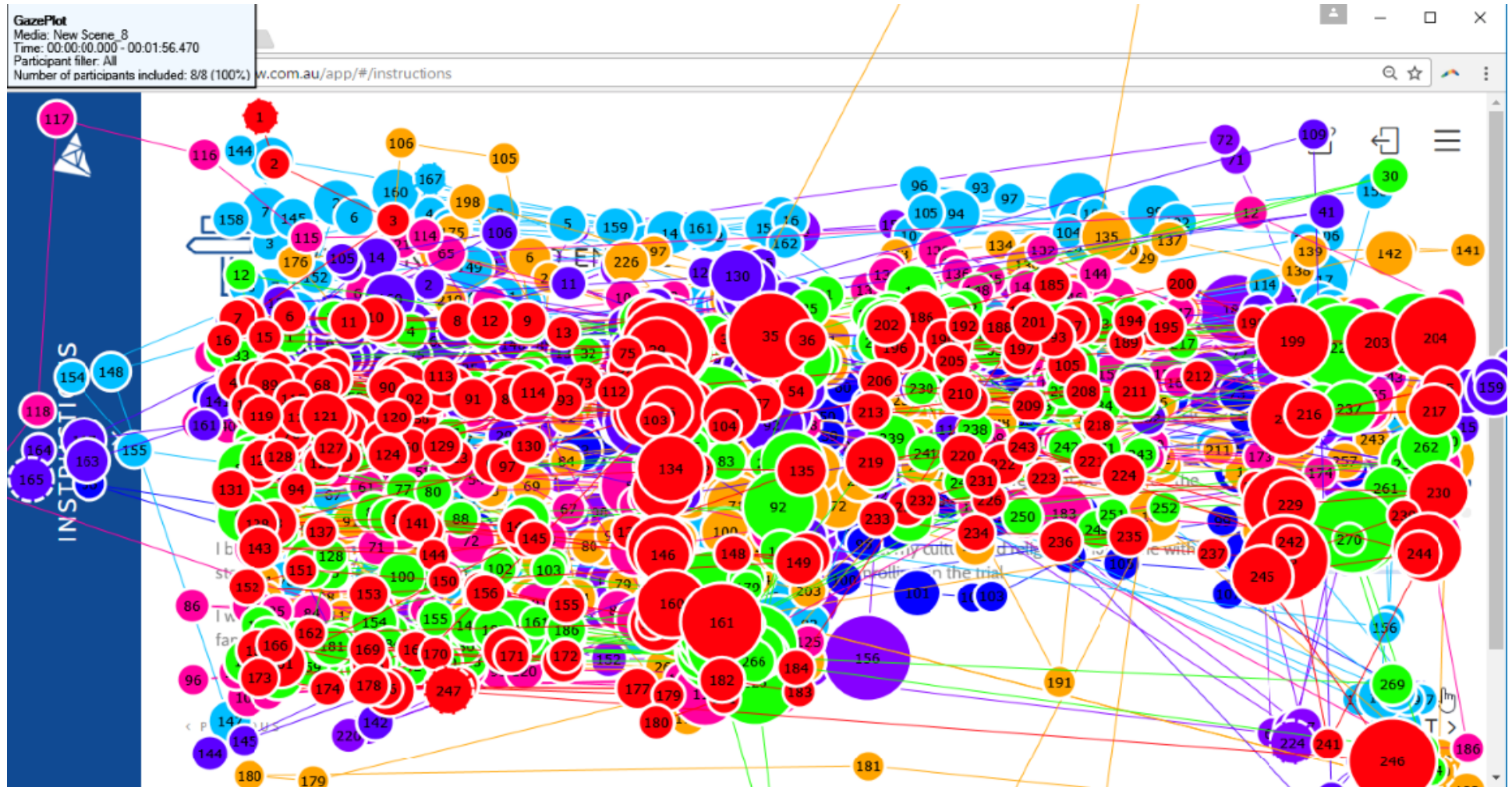


Developed iteratively using **Agile approach**, and meeting the **International Patient Decision Aids Standards**.





# User-testing





# User-testing

## Main findings:

- Minimal re-reading
- Engaged with content
- Some navigational issues

*“After this tool we would really start talking with each other. The exercise is great – it becomes a tool at that point for more people to really engage.”*

*Mother of a 13 year old boy with Osteosarcoma*

Robertson et al (2018). The development of Delta: Using Agile to develop a decision aid for pediatric oncology clinical trial enrolment. *JMIR Research Protocols*, 7(5).



# Delta pilot

Pilot

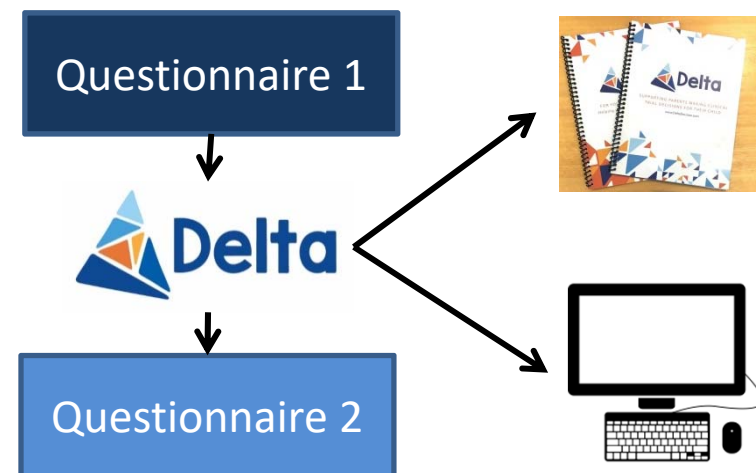
RCT

International

## Early results

- 25 parents + 2 adolescents
- Knowledge in Q2 is significantly better ( $p < 0.05$ )
- Website and booklet both rated as highly acceptable and useful

*"I really liked it! I definitely would have liked to have this when making our decision. I would highly recommend."*  
- Mother of a 9 year old boy





# Delta video

- <https://www.youtube.com/watch?v=8imroeoKuxM&feature=youtu.be>





# Rapid Fire Presentation

Ivana Durcinoska





## PROMPT-Care: A fully integrated eHealth system to support patient-centred cancer care and self-management



### Ivana Durcinoska

Project Manager, Psycho-oncology Research Group  
Centre for Oncology Education and Research Translation  
(CONCERT), Ingham Institute for Applied Medical Research  
UNSW Sydney, Australia

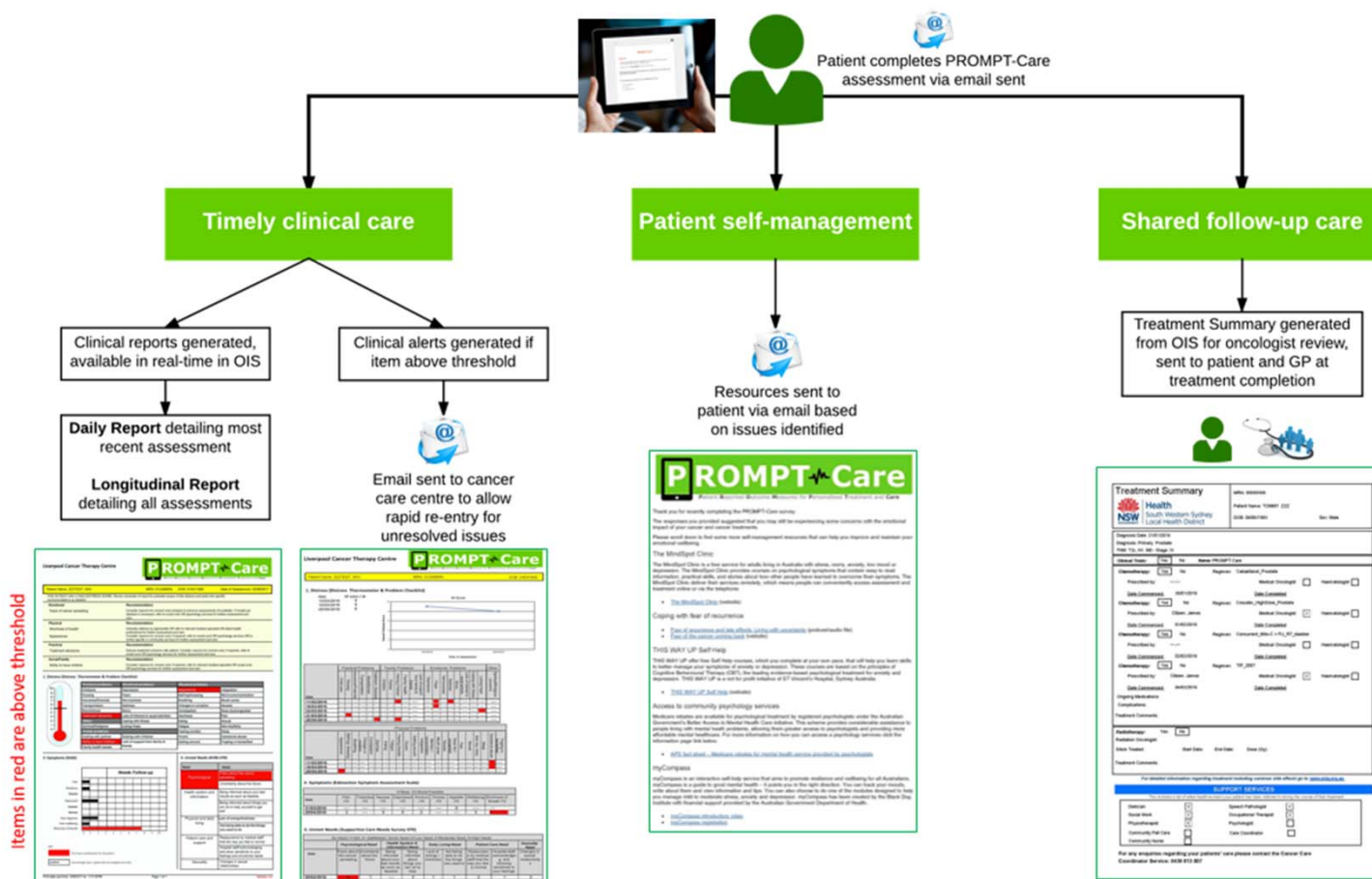
**Afaf Girgis, Geoff Delaney, Anthony Arnold  
& the PROMPT-Care team**



PROMPT-Care is the first Australian integrated eHealth platform using systematically collected PROs to inform cancer survivors' real-time clinical care and self-management (2013+)

15+ years of evidence, now being translated into practice, clear agenda of both research and integrated service improvement

Funding: Cancer Institute NSW, Bupa Health Foundation, Wollondilly Health Alliance





## PROMPT-Care PROs & measures:

**Physical, emotional, practical well-being**

Symptoms: Edmonton Symptom Assessment Scale (ESAS)

Distress: Distress Thermometer & problem checklist

Unmet needs: Supportive Care Needs Survey - Screening Tool (SCNS-ST9)

**Frequency**: Approximately monthly; across the cancer journey, ongoing from start of treatment

**Location**: In clinic or from home



Survey link: <https://z2spe.enketo.swslhd.nsw.gov.au/webform>

**PROMPT-Care**

Please note that the following questions ask you to consider how you are feeling today, in relation to your cancer.

A score of 0 would mean that you are not experiencing that symptom and a score of 10 would mean that symptom is as severe as possible.

**Edmonton Symptom Assessment Scale**

Please select the number that best describes:

.....0.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10.....  
NO PAIN WORST POSSIBLE PAIN

Please select the number that best describes:

.....0.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10.....  
NOT TIRED WORST POSSIBLE TIREDNESS

Please select the number that best describes:

.....0.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10.....  
NOT NAUSEATED WORST POSSIBLE NAUSEA





# Current status

## Phase 1: Pilot completed

- ePRO assessments & PROMPT-Care system highly acceptable & feasible

## Phase 2: Final stages

- PROMPT-Care system has informed care for **440 patients** across 4 cancer centres:
  - SWSLHD: Macarthur & Liverpool
  - ISLHD: Illawarra & Shoalhaven
- **2,650+** assessments completed to date, providing **161,000+** data items
- Evaluation: impact on ED presentations; uptake, usability, acceptability (pts, GPs, cancer team); impact on resource utilisation (GP, specialist, allied health)

### Protocol

Development and Feasibility Testing of PROMPT-Care, an eHealth System for Collection and Use of Patient-Reported Outcome Measures for Personalized Treatment and Care: A Study Protocol

JOURNAL OF MEDICAL INTERNET RESEARCH

Girgis et al

Afaf Girgis<sup>1,2</sup>, BS  
Alexis Andrew M  
Kadani<sup>1,2</sup>, BAppS  
Kenneth Masters<sup>4</sup>  
(Management); Iva  
Technology; Weng  
BSc, PhD; Ashley

### Original Paper

eHealth System for Collecting and Utilizing Patient Reported Outcome Measures for Personalized Treatment and Care (PROMPT-Care) Among Cancer Patients: Mixed Methods Approach to Evaluate Feasibility and Acceptability

Afaf Girgis<sup>1,2</sup>, BSc (Hons), PhD; Ivana Durcinoska<sup>1</sup>, BBiotech, MIPH; Janelle V Levesque<sup>1,2</sup>, BPsych (Hons), PhD; Martha Gerges<sup>1,2</sup>, BA (Psych); Tiffany Sandell<sup>3</sup>, BSc, MPH, MSc (Health Management); Anthony Arnold<sup>1,3</sup>, BAppSc(MRS)RT; Geoff P Delaney<sup>1,2,4</sup>, MBBS, MD, PhD; The PROMPT-Care Program Group<sup>1</sup>



# Future directions

- Transition to “business as usual” in planning stages
- Adapt for non-English speaking patients
  - Test tablet completion with Arabic patients
  - Health literacy – Arabic, Vietnamese patients
- Adapt for patients with low literacy, low health literacy
- Working with Cancer Institute NSW for state-wide roll-out
- Potential for use with other chronic diseases



# Discussion and questions

[I.Durcinoska@unsw.edu.au](mailto:I.Durcinoska@unsw.edu.au)

[Afaf.Girgis@unsw.edu.au](mailto:Afaf.Girgis@unsw.edu.au)





# Using Theory to Design and Implement Digital Interventions in the Healthcare System

Dr Natalie Taylor

#IMPSCI  
COMMUNITY  
OF PRACTICE

KIDS  
CANCER  
CENTRE  
SYDNEY • MELBOURNE • BRISBANE

K  
Kids Can





**Using theory to design and implement  
digital interventions in the healthcare  
system for improving clinical practice:  
reflections from coal face  
implementation research.**

**Natalie Taylor**  
22<sup>nd</sup> May 2018



# Overview

Focus: health system online and digital interventions

How do we distinguish online and digital interventions and why is this important?

How do we design online and digital interventions to support clinical practice change?

How do we implement these kinds of interventions in to existing systems and structures?

How can we evaluate the effects of these interventions whilst taking into account contextual factors?



# Distinctions

A single, specific online or digital intervention to be implemented, e.g.,

- Portable electronic medication management system; a telehealth service

Vs

Online and digital interventions as part of a suite of strategies developed to change a specific area of clinical practice, e.g.,

- Web-based training or online messages, in addition to provision of new equipment, hard copy form changes, etc., to enhance practice in a clinical area

**Similarities:** both require individual and system level change

**Differences:** implementation preparation, approach, monitoring and evaluation





# Examples

Clinical focus	Type/context of intervention	Area of change	Innovation/problem and timepoint
Telehealth	Single, call centre, GP practices, patient homes	<ul style="list-style-type: none"> <li>Changing from audio to video call</li> </ul>	<ul style="list-style-type: none"> <li>Innovation</li> <li>Pre-change</li> </ul>
Electronic medication management system	Single, organisation wide	<ul style="list-style-type: none"> <li>Changing from static to portable computer recording system</li> </ul>	<ul style="list-style-type: none"> <li>Innovation</li> <li>During</li> </ul>
Nasogastric tubes	Suite, organisation wide	<ul style="list-style-type: none"> <li>Changing first line method for checking tube position</li> </ul>	<ul style="list-style-type: none"> <li>Problem</li> <li>National guideline update release</li> </ul>
Hereditary cancer	Suite, department specific	<ul style="list-style-type: none"> <li>Changing referral practices</li> </ul>	<ul style="list-style-type: none"> <li>Problem</li> <li>Start/existing practice</li> </ul>



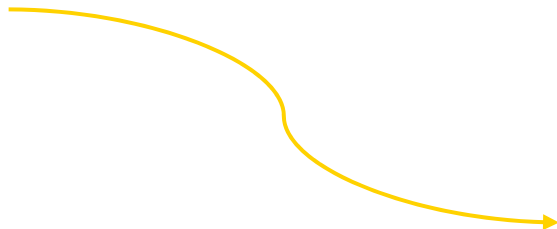
# Preparing to implement a video based telehealth service

## Aim

Identify staff perceptions of the potential barriers, benefits, and safety issues associated with transitioning from a telephone helpline to an audio-visual telehealth service (pregnancy, birth and baby)



Elston Electric Company  
MORE INFO



Clay-Williams et al. *BMC Health Services Research* (2017) 17:558  
DOI 10.1186/s12913-017-2514-7

BMC Health Services Research

## RESEARCH ARTICLE

Open Access



## Service provider perceptions of transitioning from audio to video capability in a telehealth system: a qualitative evaluation

Robyn Clay-Williams<sup>1\*</sup>, Melissa Baysari<sup>1</sup>, Natalie Taylor<sup>1</sup>, Dianne Zaltis<sup>2</sup>, Andrew Georgiou<sup>1</sup>, Maureen Robinson<sup>2</sup>, Jeffrey Braithwaite<sup>1</sup> and Johanna Westbrook<sup>1</sup>



# Context and methods

## Context

- Existing national telephone service transitioning to video service
- Access to callers' non-verbal cues and visual information
- Supporting the establishment of greater rapport and trust
- Open source WebRTC for real time video, audio and data communication

## Methods

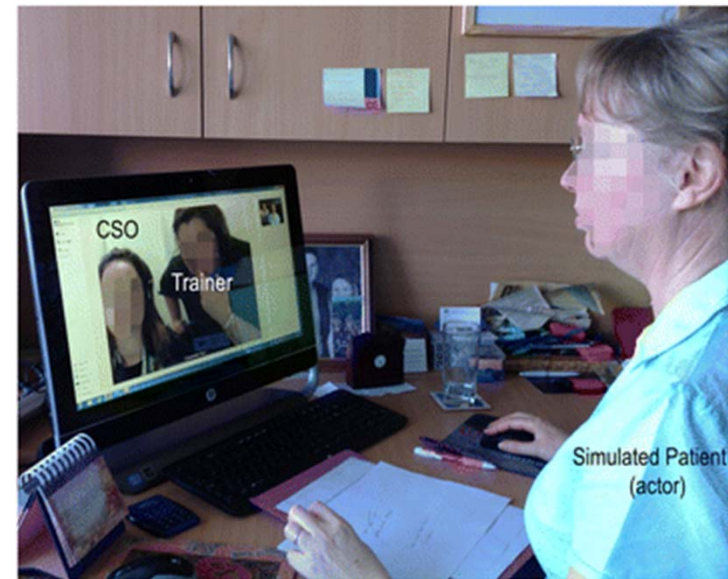
- Mixed-method, qualitative approach
- Human Factors approach (*interaction between humans and other elements of the system*)
- Observed training of service providers who were switching from telephone to video
- Pre- and post-training interviews with 15 service providers and their trainers
- Two full days of simulation training were observed
- Inductive interpretive analysis of transcribed interviews and observation notes
- Constant comparative method used to facilitate interpretation of data





# Simulation observations

- Typical scenarios developed
- User performance was evaluated to test the interface.
- Providers used their normal workstation, which included a desk, telephone, and computer equipped with a clip on camera.
- Providers wore their normal telephone audio/mic headset, which was plugged into the computer headset port.
- Simulated patient was located in a different city to the providers





# Simulation observer guide

Table 1  
Simulation observer guide

Evaluation domain	Time	Description of data collected during observations
Demographics and background		Brief outline of the purpose of simulated call
Technical domain		How well did the system perform? Technical problems (e.g. the system was slow)? Were problems fixed? How? Areas for improvement?
Clinical/professional domain		Clinician/professional behaviours
Organisational domain		Real or potential negative effects of using the video service? (e.g. effect on ability to read and follow guidelines)
Effectiveness domain		Impact of the service on the healthcare system? Benefits the service makes to the work/performance? Benefits to consumer?
Safety and quality domain		How safe is this service? What risks did you pick up on? How can those risks be minimised or avoided?





# Results

## Social

- Enhanced delivery of the health service
- Improved advice for people living in remote areas

## Professional

- Safety concerns
- Professional risk

## Technical

- Poor uptake
- System design issues
- Use of simulation for system testing, and for system training





# Interviews: professional

## Safety concerns:

Being recorded, and posted online:

*“Making sure that people can't record you, and then use the material on websites...you don't want to be stalked or anything like that, and it's hard when your face is out there.”*

Crank/abusive calls - *“once you see something it's very hard to un-see.”* (CSO 2)

## Professional risks:

Appearance:

*“if someone sees the counsellor at the other end they might think things like you look young, are you really experienced enough to kind of help me”* (Counsellor 5)

Providing advice via video:

*“With a video thing the first thing they're going to say is, ‘Show me ...’* (CSO3)





# Observations: technical

## System design issues

- Camera positioning problems
- Difficulty with the logon protocols
- Technical issues associated with transferring calls from one provider to another
- Difficulty with quickly locating decision support tools while on a call
- Absence of effective aural alerts to incoming calls





# Observations: technical

## Training issues

- Pre-session system set-up and testing (microphone/speaker testing, screen customisation)
- Importance of positioning the video camera
- How to achieve 'video presence' (importance of non-verbal communication, 'where to look')





# Impact on real world implementation

## **Psychological fears/concerns can have a large impact on implementation of a new system:**

- Final system did not include video capability with customer support officer (CSOs) due to perceived risks

## **Exploring user perceptions related to new technology can improve system uptake/design:**

- When providers made initial contact with the patient, the video link was not immediately activated.
  - Safely screen potential clients via audio, and decide whether to pursue the call, before transferring them to the counsellors who were on video
- Inclusion of black screens behind service providers, rather than a view of the provider's workspace
  - Minimize extraneous information presented to clients





# Some reflections

In planning for implementation of the PBB service, given that providers were accustomed to using computers as part of the telephone telehealth service, there was an ***implicit assumption*** that they would have sufficient technical competency to operate the video system.

The changes in workflow and decision making required to use the video system, however, made the transition more complicated than expected.

Prior to implementing change to a national service to incorporate digital advances, it is crucial to analyse the likely impact of change using **real life scenarios and discussion with stakeholders**





# From *preparing* for large scale digital health service innovation...



...to addressing *existing* small scale, but frequent occurring problems with *some* digital solutions in busy hospitals



# Alternative approach

Serious problems in practice, unsafe care, poor quality of care

Often requires individual behaviour and system change

In depth analysis of practice

Psychosocial and environmental theory to understand why problems occur

Why use theory?

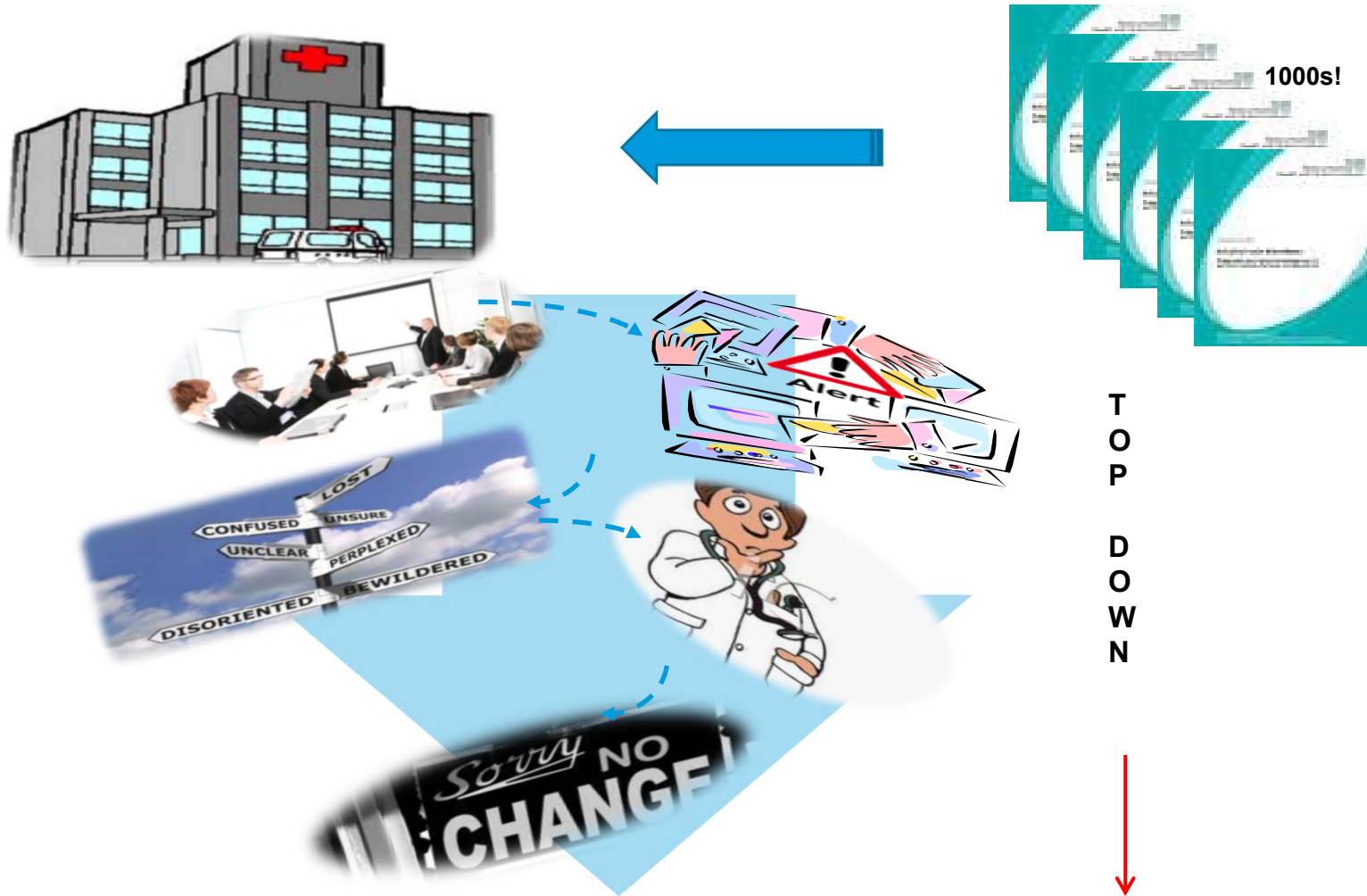
Generating and implementing solutions – including digital and online

How can we evaluate what works?





# Health professional behaviour change





# Why is it difficult for health care professionals?

- Hospital environments are busy, chaotic
- Competing pressures and priorities
- Medical staff autonomous
- Sometimes people are unaware
- Guidelines lack transparency
- Quality improvement initiatives overwhelming
- Top down approach
- Management need to tick boxes
- Habits
- Often rely on **intuition** rather than gaining a clear understanding of key barriers to change

**Changing behaviour is difficult and complex**



**Methods used often lack the necessary components that are effective in producing change**



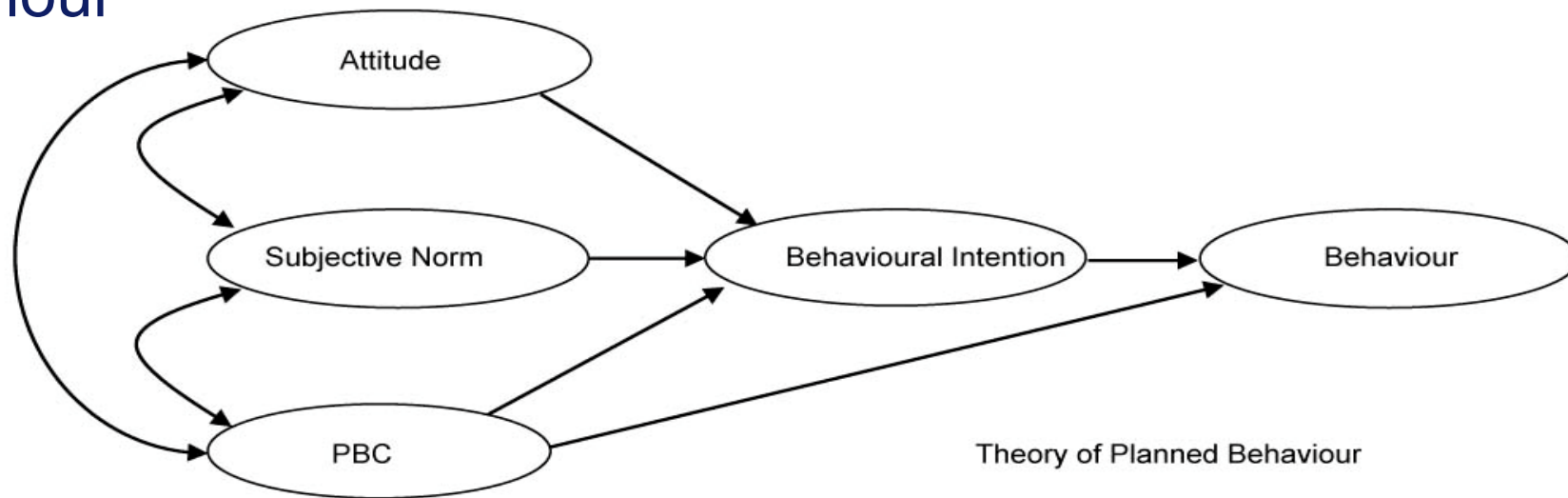
# Is there a magic bullet for changing behaviour?





# How can theory help?

It can identify and address predictable **determinants** of behaviour



Theory of Planned Behaviour

ann. behav. med. (2016) 50:592–612  
DOI 10.1007/s12160-016-9798-4

ORIGINAL ARTICLE

**Meta-Analysis of the Reasoned Action Approach (RAA) to Understanding Health Behaviors**

Rosemary McEachan, BA(Hons), MSc, PhD<sup>1</sup> · Natalie Taylor, BSc(Hons), MSc, PhD<sup>1,2,3</sup> · Reema Harrison, BSc(Hons), PhD<sup>1</sup> · Rebecca Lawton, BA(Hons), PhD<sup>1,2</sup> · Peter Gardner, BSc(Hons), MSc, PhD<sup>2</sup> · Mark Conner, BSc(Hons), PhD<sup>2</sup>

Health Psychology Review  
Vol. 5, No. 2, September 2011, 97–144

## Prospective prediction of health-related behaviours with the Theory of Planned Behaviour: a meta-analysis

Rosemary Robin Charlotte McEachan<sup>a,b\*</sup>, Mark Conner<sup>b</sup>, Natalie Jay and Rebecca Jane Lawton<sup>b</sup>



# How can interventions be informed by theory?

Provides theoretical constructs to measure



**Developing the 'Identification of Medication Adherence Barriers' (IMAB) instrument: A novel application of behaviour change theoretical frameworks**

Easthall C<sup>1</sup>, Wright D<sup>1</sup>, Taylor NP, Bhattacharya D<sup>1</sup>  
<sup>1</sup> School of Pharmacy, University of East Anglia, Norwich UK. <sup>2</sup> Institute of Psychological Sciences, University of Leeds, Woodhouse Lane, Leeds, UK

Target constructs with evidence based behaviour change techniques

AND

Allows for identification of mechanisms, or the 'active ingredients' of effective interventions



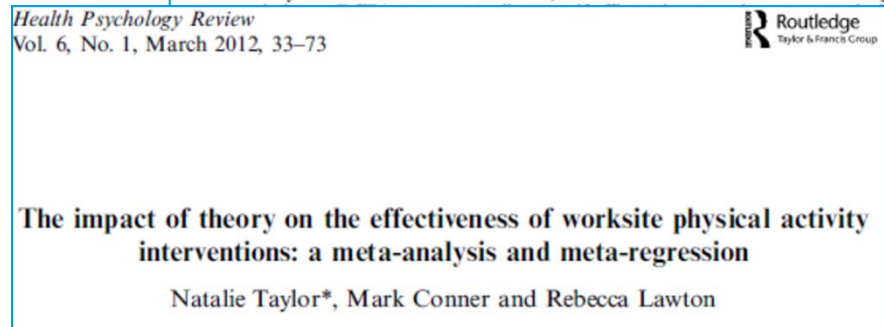
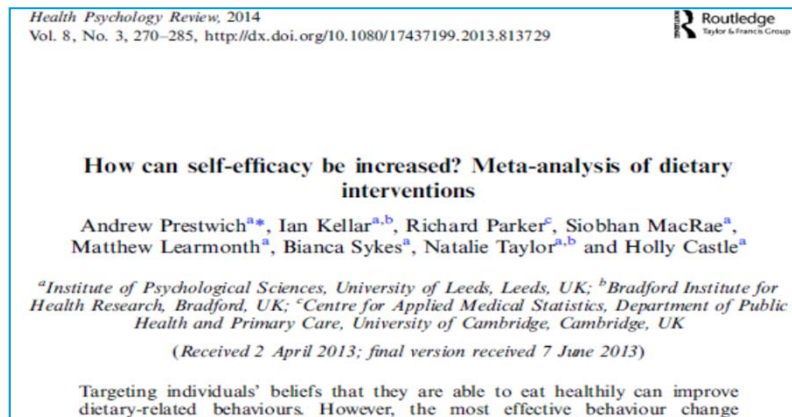
Collaborating with front-line healthcare professionals: the clinical and cost effective of a theory based approach to the implementation of a national guideline

Natalie Taylor<sup>1\*</sup>, Rebecca Lawton<sup>2</sup>, Sally Moore<sup>3</sup>, Joyce Craig<sup>4</sup>, Beverley Slater<sup>3</sup>, Alison Cracknell<sup>5</sup>, John and Mohammed A Mohammed<sup>6</sup>



# Are theory based interventions more effective?

- Date back to the 1980's, E.g., Green (1984); Michie et al. (2007); Painter et al. (2008)
- Meta-analyses of interventions for health behaviour change (Albarracin et al., 2005; Taylor et al., 2012)





# How to use theory based interventions in a complex health system?

## ***Principles of implementation...***

# Harnessing implementation science to improve care quality and patient safety: a systematic review of targeted literature

JEFFREY BRAITHWAITE<sup>1</sup>, DANIELLE MARKS<sup>1</sup> AND NATALIE TAYLOR<sup>1,2</sup>

## RESEARCH ARTICLE

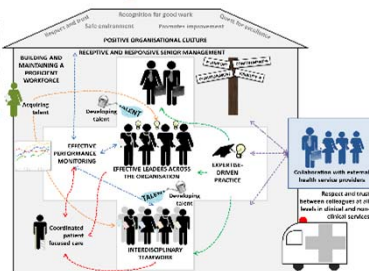
Open Access

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

Natalie Taylor<sup>1\*</sup>, Robyn Clay-Williams<sup>1</sup>, Emily Hogden<sup>1</sup>, Jeffrey Braithwaite<sup>1</sup> and Oliver Groene<sup>2</sup>

## Abstract

**Background:** High performing hospitals attain excellence across multiple measures of performance. 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 exhaustive list may fail to identify richly descriptive or relevant contextual factors. The objective of this study was to conduct a systematic review of qualitative literature to identify methods used to identify high performance associated with high performers, and practical strategies for improvement.



- **Management** approval and ongoing support
- Commitment amongst members of the target group
- Use of **boundary spanners**
- Mapping of guidelines onto **local problems**
- **Process mapping** with supporting audit data
- Adopting the perspective of the target group
- Acknowledging the complexity of implementing evidence (i.e., changing behaviour) in practice
- A monitoring plan
- A flexible approach that is driven by **local context**
- **Co-production** and design to combine theoretical and **contextual expertise**
- **Incorporation into established structures**





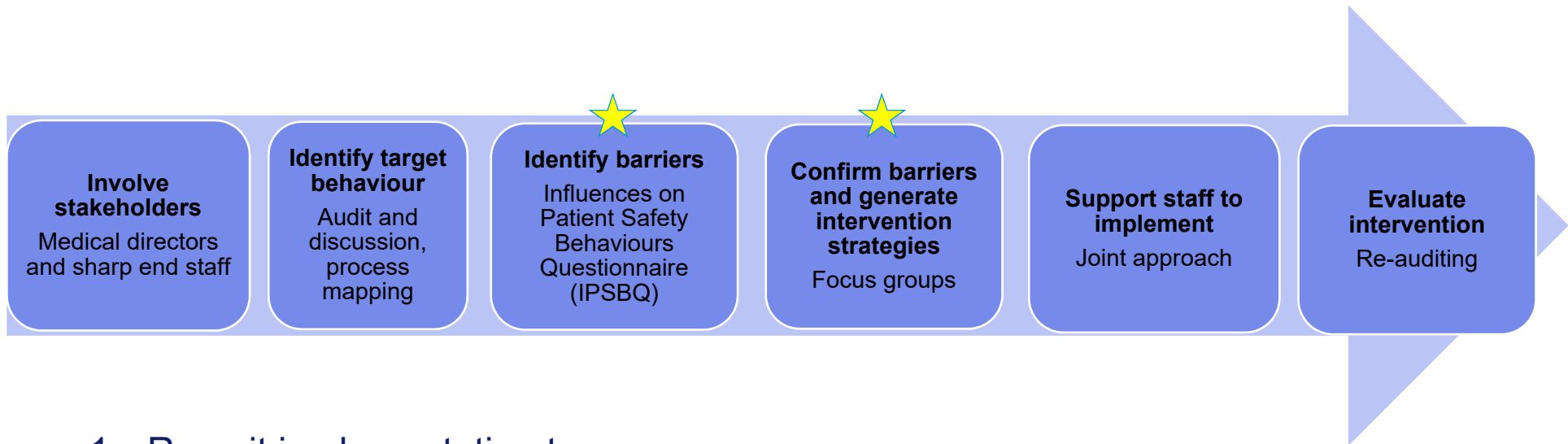
# The Theoretical Domains Framework Implementation (TDFI) approach

(Taylor et al., 2014)





# The TDFI approach



1. Recruit implementation teams
2. Identify processes and the characteristics of target behaviour for change; use data to calculate baseline rates and numbers to track as we implemented interventions
3. Identify key barriers to undertaking the target behaviour
4. Confirm key barriers and address with co-designed interventions using mapped BCTs
5. Support implementation
6. Evaluation



# Examples of application (UK)

## Patient safety

**NHS**  
National Patient Safety Agency

### Rapid Response Report

NPSA/2008/RRR011

From reporting to learning 9 December 2008

#### Reducing risk of overdose with midazolam injection in adults

**Issue**  
Some adult patients are being overdosed with midazolam injection when used for conscious sedation. The presentation of high strength midazolam as 5mg/ml (2ml and 10ml ampoules) or 2mg/ml (5ml ampoule) exceeds the dose required for most patients. There is a risk that the entire contents of high strength ampoules are administered to the patient when only a fraction of this dose is required. Doses often exceed that required for conscious sedation.

**Action deadlines for the Safety Alert Broadcast System (SABS)**

Category: ACTION
For action by: pharmacists
Deadline (action 1.1 underway): 12 January 2008
Deadline (action 1.1 complete): 12 December 2008

Issue date: December 2007  
Alert reference: NICE/NPSA/2007/PSG001

**Technical patient safety solutions for medicines reconciliation on admission of adults to hospital**

**NHS**  
National Patient Safety Agency

**Patient Safety Alert**  
NPSA/2011/PSA002  
10 March 2011

### Reducing the harm caused by misplaced nasogastric feeding tubes in adults, children and infants

This Alert updates and strengthens Patient Safety Alert 05 (Reducing the harm caused by misplaced nasogastric feeding tubes) and is based on national learning since 12 September 2011:

1. A named clinical lead is assigned to have responsibility for implementing all

**NHS**  
National Patient Safety Agency

## Patient safety alert

20

### Promoting safer use of injectable medicines

The National Patient Safety Agency (NPSA) received around 800 reports a month to its National Reporting and Learning System (NRLS) relating to injectable medicines between January 2005 and June 2006. This represents approximately 24 per cent of the total number of medication incidents. The majority of these resulted in no or low harm to patients. However, there were 25 incidents of death and 28 of serious harm reported between January 2005 and June 2006.

Research evidence indicates that the incidence of errors in prescribing, preparing and administering injectable medicines is higher than for other forms of medicine. In one study, at least one error occurred in 49 per cent



Key barrier	Behaviour Change Techniques	Practical application of BCTs into intervention strategies
<b>Influences:</b> staff perceptions include 1) do not encourage testing the pH as the first line test, 2) others do not use pH as first line test, and 3) that superiors do not express encouragement, and 4) staff would like to see pH as the first line test	Persuasive communication	Project presented at four clinical governance meetings
	Social pressure	Radiology system change, global email, and dissemination by clinical leads/ward managers
	Negative reinforcement	
	Social process of encouragement, support	Posters placed and <u>screensavers</u> displayed on all ward monitors, presented senior member of staff advocating the use of pH as first line to address social influences
	Prompts, triggers, cues	
<b>Attitudes:</b> staff perceptions include 1) anxiety and reluctance relating to trusting pH levels as the first line test	Anticipated regret	Posters placed and <u>screensaver</u> displayed on all ward monitors, attempted to elicit anticipated regret regarding likelihood of x-ray misinterpretation vs using pH
	Cognitive restructuring	
	Persuasive communication	
<b>Environmental context and resources:</b> staff perceptions include 1) the necessary resources are not available, 2) communication between staff is unclear, 3) there is not a good system in place	Environmental changes (objects to facilitate the behaviour)	NG Safety Pack
	Prompts, triggers, cues	New documentation was designed and in use in 2018
<b>Knowledge and skills:</b> staff perceptions include 1) knowledge is not available or is insufficient, 2) skills are unclear,	Demonstration of the behaviour;	<u>Online web-based training</u> , including skills and knowledge
	Self-monitoring of behaviour with feedback	test
	Provide opportunity to practice	NG specialist nurse training with simulated scenarios including manikin



# Multiple interventions

Around 16 interventions  
Some online and/or digital

Type	Who involved	Challenges	Cost	Worth it?
Screensaver	<ul style="list-style-type: none"><li>• Graphic designer</li><li>• Hospital IT</li><li>• Finance</li><li>• Governance</li><li>• Healthcare professionals</li></ul>	<ul style="list-style-type: none"><li>• Time and timing</li><li>• Infrastructure</li><li>• Politics</li><li>• Theory based content</li></ul>	Minimal but we had to cover it	<ul style="list-style-type: none"><li>• Yes!</li><li>• Impact</li><li>• Sharing</li><li>• BUT...novel factor??</li></ul>
Web-based training	<ul style="list-style-type: none"><li>• Graphic designer</li><li>• Hospital IT</li><li>• Finance</li><li>• Governance</li><li>• Healthcare professionals</li><li>• Curriculum designers</li></ul>	<ul style="list-style-type: none"><li>• Bigger than Ben H</li><li>• Demonstrations</li><li>• Coordination</li><li>• Time and timing</li></ul>	Minimal but we had to cover it	<ul style="list-style-type: none"><li>• Yes!</li><li>• Impact</li><li>• Sharing</li><li>• Enthusiasm</li></ul>







Medical Education  
Leeds

NHS

[elearning](#)

**ATTENTION:** This E-Learning package is currently still under construction and should be used for testing purposes only!

# GUIDELINES FOR THE INSERTION OF The Nasogastric Tube (NGT) and On-going Care for Adults



**Please note:** This e-learning contains audio narration on some of the slides.  
If you do not have access to audio output, please click on the “notes” button for the narrative script.



## Equipment Trolley Simulation



### ADDITIONAL INFORMATION REQUIRED

sterile water

detergent wipes

bin with yellow and black bag

non-sterile gloves

alcohol hand gel

NGT care plan

pen

### Nasogastric Tube



A soft polyurethane tube used for feeding patients who are either unable to eat or drink sufficiently to maintain nutritional status or their swallow is unsafe for them to do so

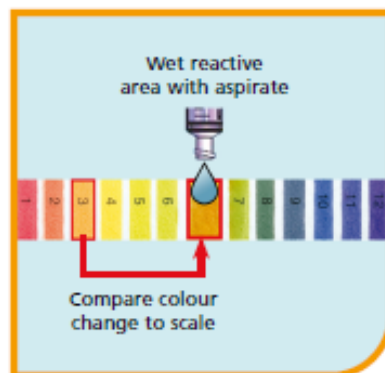


## Reducing the Harm Caused by Misplaced Nasogastric Feeding Tubes



**SAFE  
TO  
FEED?**

**50%**  
of feeding  
into the lung  
is caused by  
**misinterpretation**  
of x-rays



For more information  
[www.nrls.npsa.nhs.uk](http://www.nrls.npsa.nhs.uk)

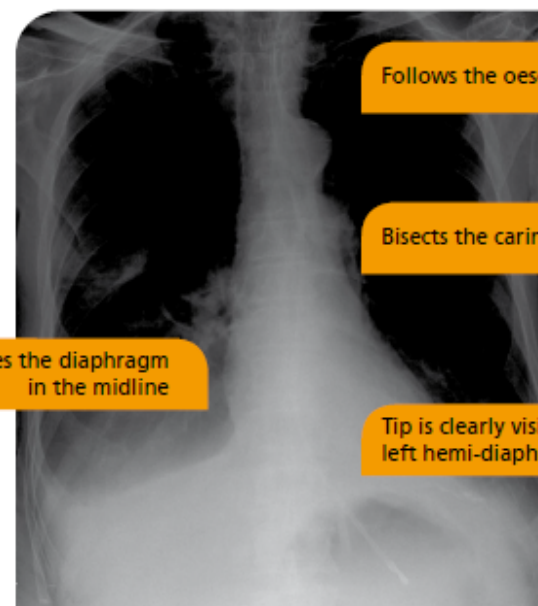
All doctors checking the position of NG tubes are required to have undergone LTHT training and competency assessment

**Remember:**  
*pH testing is first line*

## Radiological Confirmation of NGT Position

Doctors checking NGT position on xray should only do so if they have undergone LTHT training and competency assessment

CXR should **NOT** be used routinely as first line



Following x-ray document:

- who authorised x-ray
- who confirmed position
- confirm it is most current x-ray for correct patient
- x-ray result and whether it is safe to feed/administer medications





## Bedside Confirmation of NGT Position

Remember pH testing is first line

Wash hands,  
put on apron  
and gloves



Attach 50ml  
syringe and  
aspirate using  
gentle suction

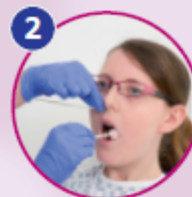
Did you obtain an aspirate?

NO

Following each step attempt to re-aspirate



Position patient on left side



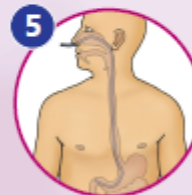
Perform mouth care



Flush NGT with 10-20 ml AIR using a 50ml syringe



Offer a drink (if safe)  
then wait 15 mins



Advance or withdraw  
the tube by 5cm

YES



YES

Is pH 5 or less?

NO

Do NOT  
feed

YES

SAFE to  
feed

Re-aspirate  
Did you obtain  
an aspirate?

Request  
xray

NO



In NGT Care Plan document if aspirate was obtained,  
pH of aspirate, who checked pH and whether it is safe to feed.



## Nasogastric Tube Awareness Week 30 July – 3 Aug 2012

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Misplaced nasogastric tubes are **causing harm to patients**

Coming to your ward soon....



**Remember**  
pH testing  
should be  
used first line



Gina Lockley  
New Enteral Feeding Nurse



# Practice change evidence

Target behaviour: Using pH as the first line method for checking tube position

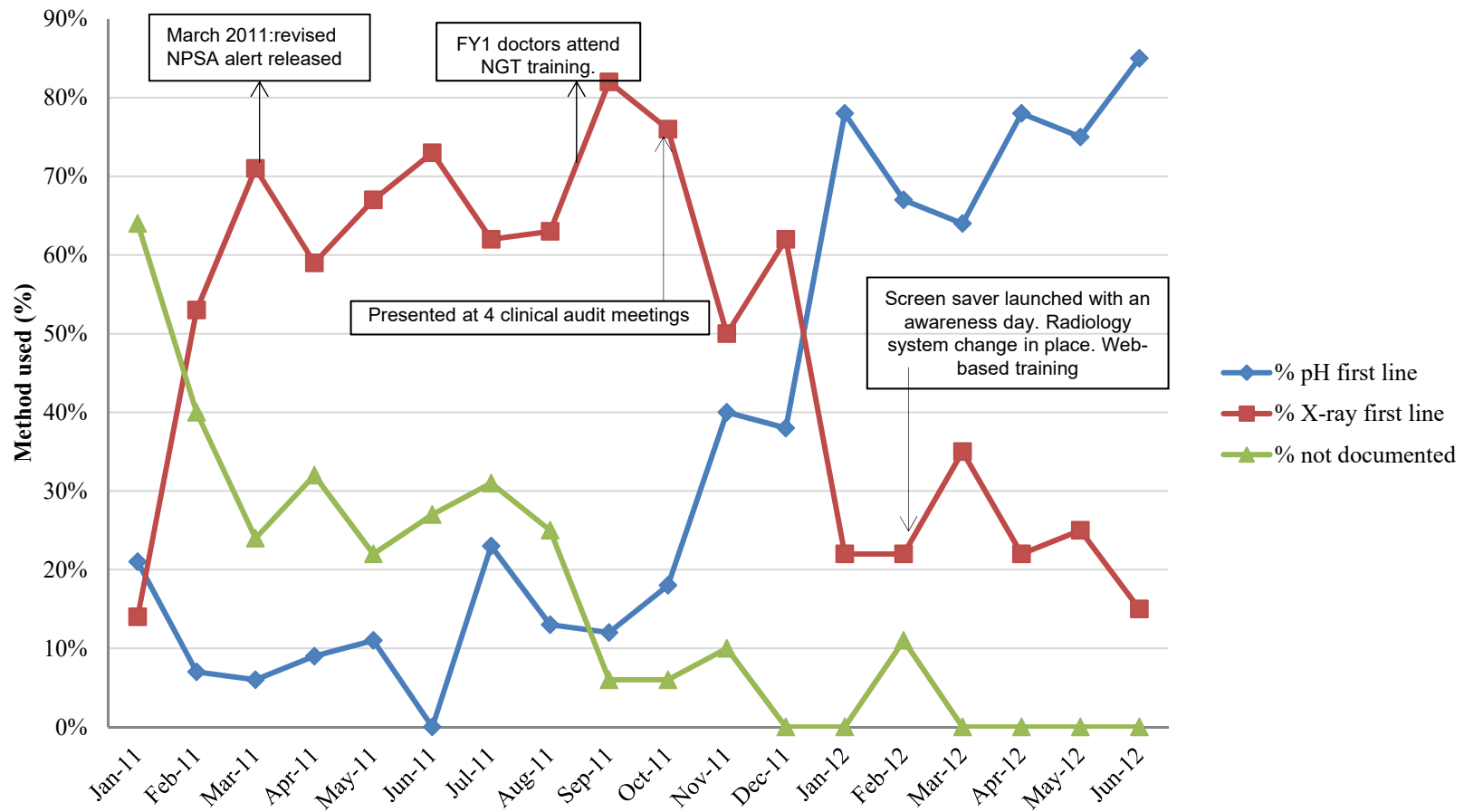
Audit information	Hospital 1		Hospital 2		Hospital 3		Hospital 4 (Control)	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Number of sets of notes audited	49	48	43	44	44	40	53	46
pH of aspirate from stomach	18%	63%	12%	73%	14%	33%	45%	46%
Patient sent for X-ray	49%	23%	77%	9%	41%	40%	25%	20%
Tube placed in radiology	0	0	0	0	36%	10%	0	0
Information not documented	33%	15%	9%	18%	9%	18%	30%	46%

Zou's modified Poisson regression approach: Following intervention implementation, the use of pH first line increased significantly across intervention hospitals compared to the control hospital, which remained unchanged.



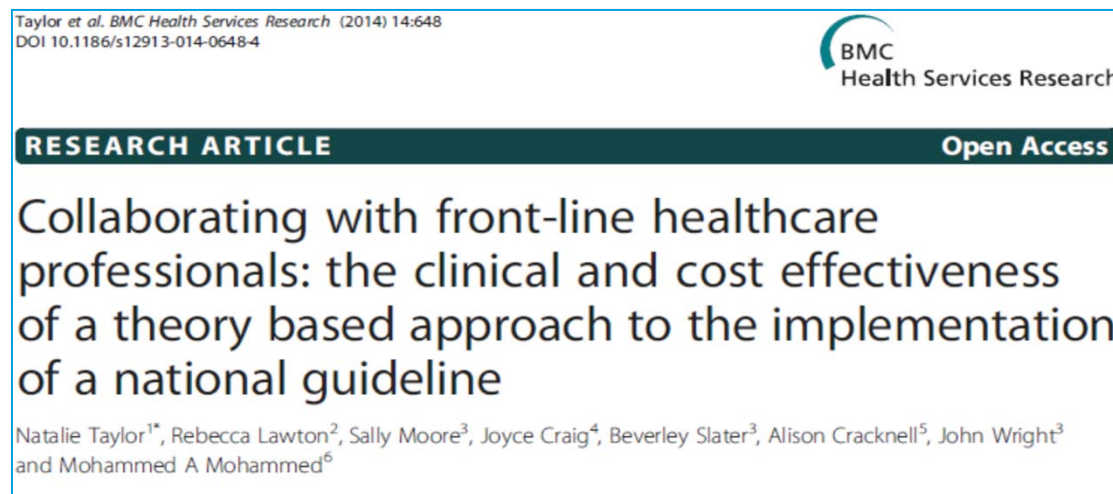
# Practice change evidence

First line method used to check NG tube position: Hospital A





# These results were cost-effective



- Following intervention implementation, the use of pH first line increased significantly across intervention hospitals [ $p < .001$ ] compared to the control hospital, which remained unchanged.
- The estimated savings and costs in the first year were £2.56 million and £1.41 respectively, giving an ROI of 82%, and this was projected to increase to 270% over five years.



# More practice change evidence

Hosp	Target behaviour	Indicators(s) and desired direction of change (↑/↓)	N pre	N post	Pre-audit results	Post-audit results	N pr	N po	Control pre	Control post
H1	Titrate doses according to individual patient needs	Mean total amount of midazolam (mg) (↓)	30	26	4.5 (3.07)	2.7 (1.62)	63	51	4.4 (3.36)	4.2 (2.31)
		Mean amount of midazolam (mg) per dose (↓)			3.3 (1.90)	2.2 (1.12)			3.8 (1.71)	3.2 (1.69)
H3	Serum gentamicin levels taken between 6-14 hrs of patient receiving gentamicin	N (%) blood levels checked between 6-14 hours (↑)	43	22	25/43 (58)	21/22 (95)	43	22	29/43 (67)	19/22 (86)
H4	Compile accurate inpatient prescriptions (doctors)	Total (SD) drugs omitted (↓)	39	22	1.59 (2.1)	1.10 (1.14)	37	39	1.03 (1.44)	1.28 (1.49)
		Total (SD) discrepancies (↓)			2.03 (2.5)	1.13 (1.23)			3.32 (5.85)	1.79 (2.39)
	<a href="#">Effectively</a> communicate any changes, omissions, or discrepancies to doctors (pharmacists)	Communicated discrepancies (↑)			11/23 (49)	12/16 (75)			20/27 (74)	13/23 (57)



# Momentum is catching...(diffusion of innovation)



Top team: (back to front) Anne Wood, Neonatal enteral and parental specialist nurse, Natalie Taylor, Behavioural psychologist, Rebecca Brown, Academic FY2 doctor, Clare Donnellan, Consultant gastroenterologist, Alison Cracknell, Consultant for Acute and Elderly Medicine.

## Front-line team wins national award

The Trust's nasogastric tube steering committee won top prize at this year's national Patient Safety Congress for their work in helping to reduce harm to patients caused by misplaced nasogastric (NG) tubes.

### Achieving Behaviour Change for Patient Safety

An Evidence Based Toolkit  
Version 2.0

Yorkshire Quality and Safety Research Group  
Bradford Institute for Health Research

#### Approaches for Patient Safety

A one-day workshop for Yorkshire and the Humber NHS professionals  
13<sup>th</sup> June 2013:  
The National Media Museum, Bradford

The safety of patients is of paramount concern to health professionals and behaviour change is often key to achieving this aim.


#### Discovering Innovation at the Intersection of Undergraduate Medical Education, Human Factors, and Collaboration: The Development of a Nasogastric Tube Safety Pack

Natalie Taylor, PhD, MSc, Thomas Bamford, Corneila Haird, and Alison Cracknell, MBChB

**Abstract**  
**Problem** Significant deficiencies exist in the knowledge and skills of medical students and residents around health care quality and safety. The theory and practice of quality and safety should be embedded into undergraduate medical practice so that health care professionals are capable of developing interventions and innovations to effectively anticipate and mitigate errors.  
**Approach** Since 2011, Leeds Medical School in the United Kingdom has used case study examples of nasogastric (NG) tube patient safety incidents within the undergraduate patient safety curriculum. In 2012, a medical undergraduate student approached a clinician with an innovative idea after undertaking an NG tubes root cause analysis case study. Simultaneously, a separate local project demonstrated low compliance (11.6%) with the United Kingdom's National Patient Safety Agency NG tubes guideline for use of the correct method to check tube position. These separate endeavors led to interdisciplinary collaboration between a medical student, health care professionals, researchers, and industry to develop the Initial Placement Nasogastric Tube Safety Pack.  
**Outcomes** Human factors engineering recommendations to inform pack design to be easy to follow. A timeline development, mapping human factors and principles used through the pack is presented. The pack has been launched in five Service (NHS) hospitals, has been introduced into professional staff training for NG tubes.  
**Next Steps** A mixed-methods evaluation is currently under way in five NHS organizations.

Within the NHS locally, Yorkshire and Humber Health Innovation and Education Cluster (HIEC) aims to accelerate the linking of education with innovation in healthcare practice. See [www.hhiee.org.uk/about/about-hhiee](http://www.hhiee.org.uk/about/about-hhiee). Patient safety is a key theme and is based at Bradford Institute for Health Research.

Below: Tom Bamford and the NG safety pack. It includes all equipment for the initial NG insertion including a pH strip, disposable tape measure, marker pen, syringe for aspiration, instructions, troubleshooting card, sticker recording the initial insertion, non-sterile gloves and dressing to hold the tube in place. It also holds cues for the clinician to follow in line with NPSA guidance and on the reverse is an advice sheet on how to obtain aspirate if this has become difficult.





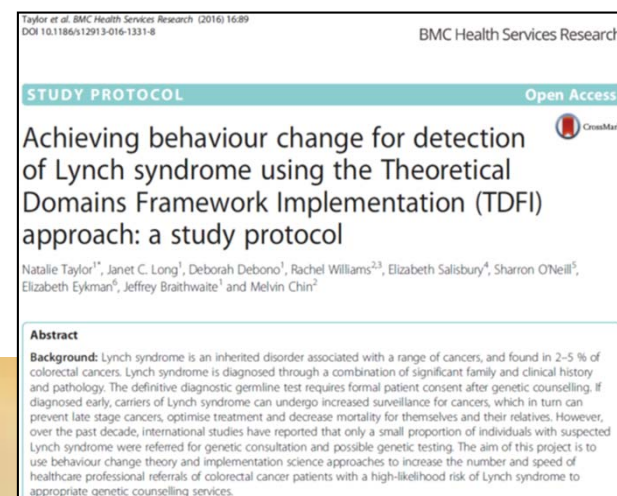
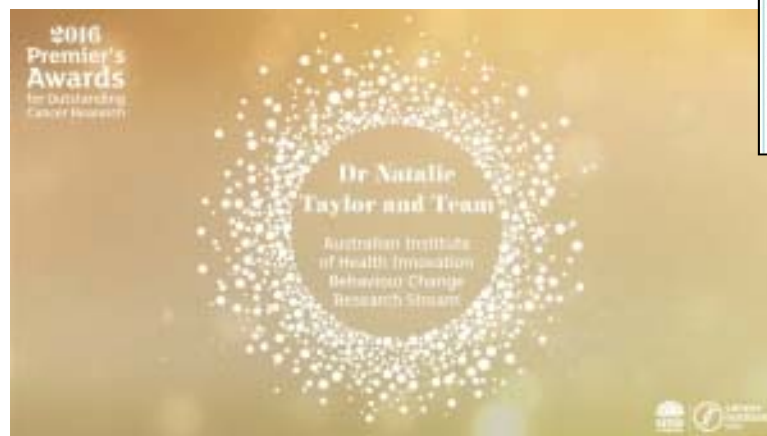
Australia based example.



# Australia based example

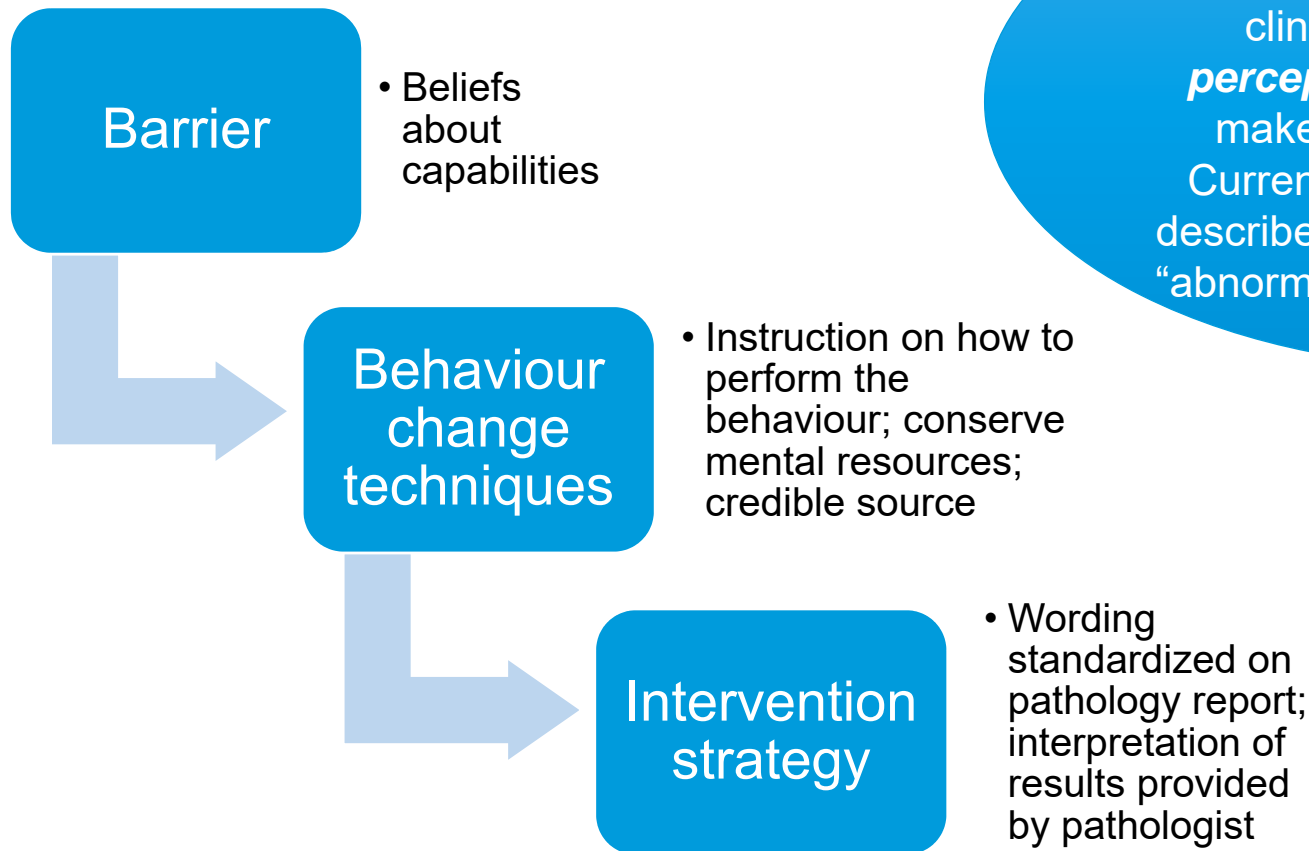
## Hereditary cancer

- 2015 Cancer Challenge of the Year Award (TCRN)
- Referral behaviours for detecting Lynch syndrome
- Two NSW hospitals
- Project Staff = Dr Janet Long, Dr Deb Debono





# Intervention design (digital impact)



Terminology in the pathology reports can be confusing to clinicians, ***generating the perception that it is difficult*** to make an appropriate referral. Currently a mix of terms used to describe results: “positive/negative,” “abnormal/normal,” “preserved/lost”



### SUPPLEMENTARY REPORT:

Immunostains for MSI proteins (SEALS St George Lab; block: 8)

MLH1: POSITIVE  
PMS2: POSITIVE  
MSH2: POSITIVE  
MSH6: POSITIVE

**OLD REPORT**

#### Comment:

Absence of staining for either MLH1, PMS2, MSH2 or MSH6 is associated with microsatellite instability phenotype (MSI-H), and may reflect the presence of a germline mutation or somatic inactivation of that mismatch repair enzyme.

MLH1 Preserved nuclear staining  
PMS2 Preserved nuclear staining  
MSH2 Preserved nuclear staining  
MSH6 Loss of nuclear staining

**NEW STANDARDISED  
TERMINOLOGY**

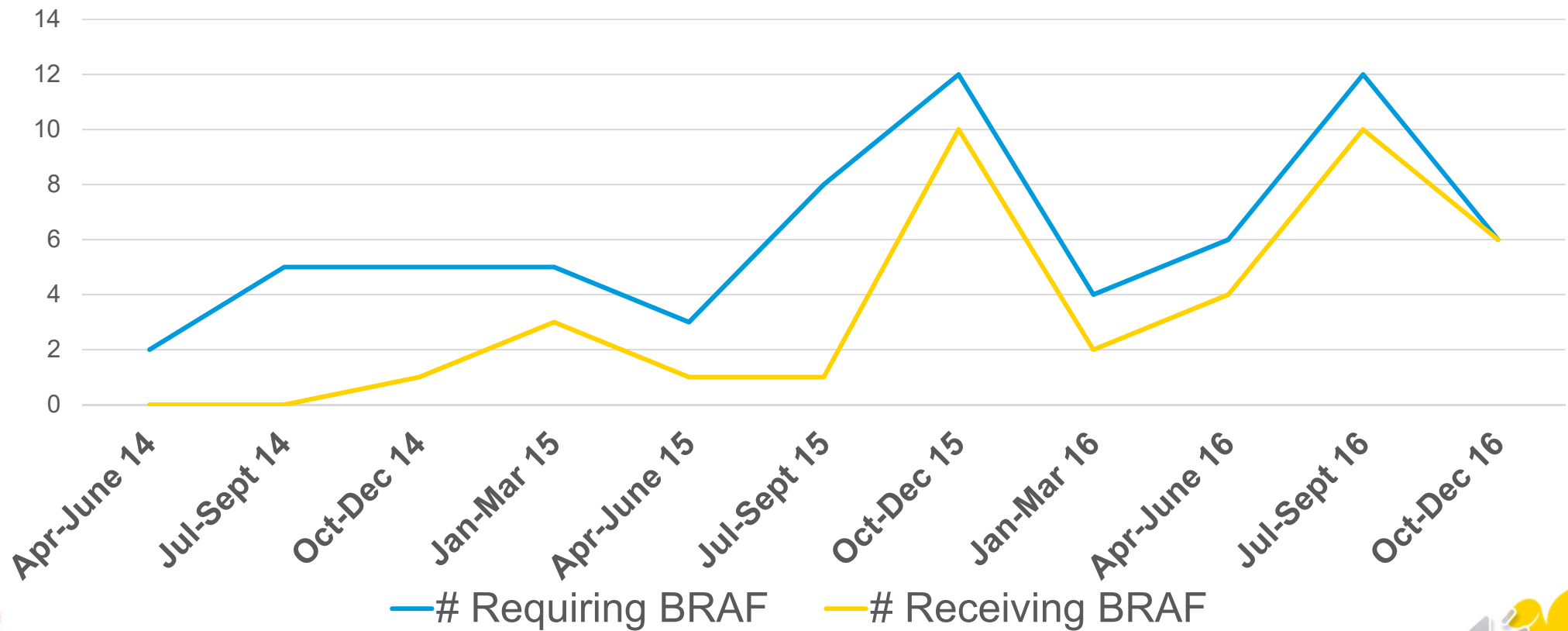
Absence (loss) of nuclear staining for any of the mismatch repair enzymes MLH1, PMS2, MSH2 or MSH6 is associated with microsatellite instability phenotype (MSI), and may reflect the presence of a germline mutation or somatic inactivation of that mismatch repair gene.

HIGH RISK OF LYNCH SYNDROME



# Pathology behaviour change

Number of patients requiring supplementary testing and number that received it





# Challenging intervention with digital impact

Referral forms from paper to online system

Multiple forms, hoops, stakeholders...

In the middle of plans for a move to an entirely new building

Busy clinicians attempting to drive change

Intervention not implemented in either hospital by the end of the project, or by the project extension, and in one hospital it is still not implemented (2 years on)

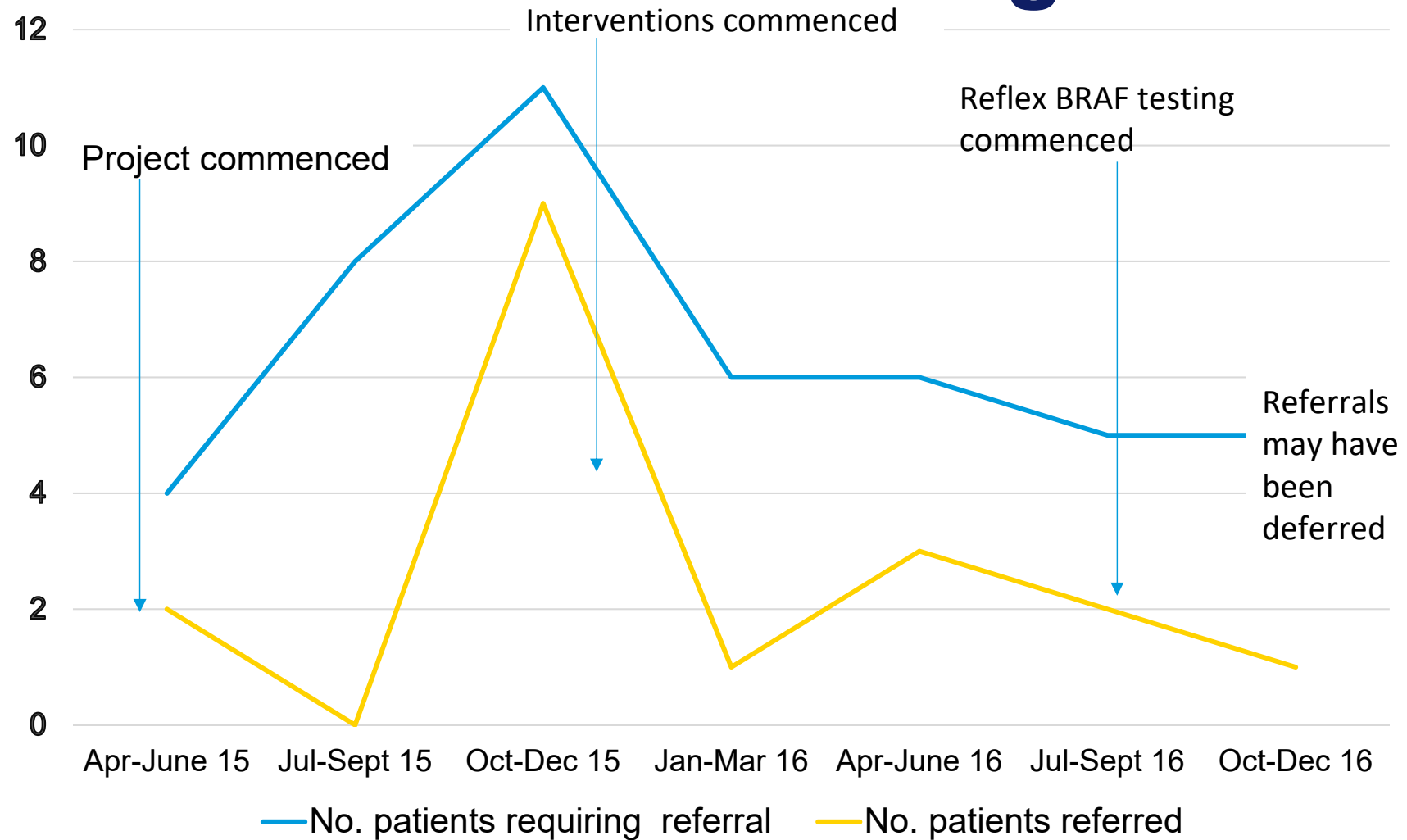
Achieving implementation of co-designed solutions as part of implementation research within existing electronic systems is challenging



Can  
Cou



# Referral behaviour change





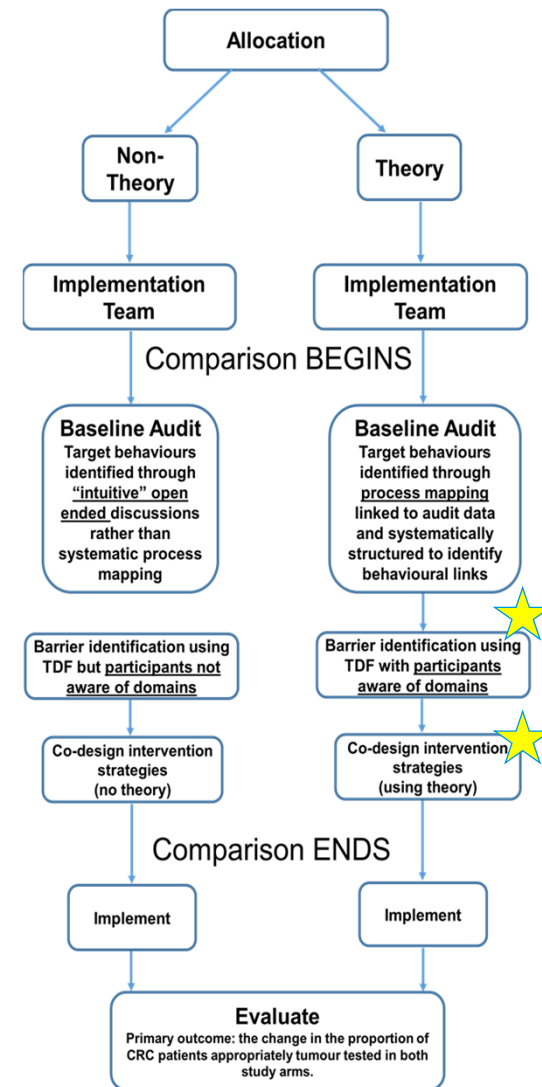
# Current project

## CINSW & Cancer Australia funding \$1.2m:

- Randomised controlled trial
- Hospitals in NSW (x4), WA (x2), VIC (x2)
- Aim to improve referrals for patients at risk of Lynch syndrome

## Research questions

- *What is the difference in the effectiveness of a **theory** versus **non-theory** implementation science approach for increasing the number of patients with Lynch syndrome identified?*
- *What is the most **cost-effective** implementation science approach for identifying Lynch syndrome patients?*
- *How can we identify the effective intervention components?*





# Key modifications

1. Training paid 'Implementation Leads' in the TDFI approach (2 year contract 0.2 FTE)
  - Navigate the system better; understand the context; established networks
1. APEASE Criteria for final intervention selection (Michie, Atkins & West, 2014)
  - Affordability, Practicality, Effectiveness and cost-effectiveness, Acceptability, Side effects and safety, and Equity
2. Process evaluation PhD
  - TDFI fidelity
  - Intervention fidelity
  - Mechanisms of action
  - Factors affecting implementation
  - Resource and time analysis





# After all that...

1. Digital and online interventions are increasingly inevitable
2. The way to go about designing and implementing them will differ in any given situation, and may depend on:
  - The starting point
  - Overall aim
  - Context
  - Time available
  - Resources
  - Politics
3. If they are unplanned as part of a wider implementation strategy, consider the time available for the research prior to driving it forward...
4. Implementation science methods can help to plan, monitor, and evaluate effects









# How many hats does an implementation researcher need?





# How many hats does an implementation researcher need?

1. Learn about multiple new clinical areas in detail
2. Analyse it's process and identify gaps
3. Co-design solutions with stakeholders
4. Make sure these are theory guided
5. Make sure they are feasible within the organisation
6. Support implementation because no one has time to lead it *...this includes supporting implementation of digital and online solutions*
7. Measure change
8. Unpick what worked an why
9. Keep all the stakeholders happy
10. Publish the study with a robust research design







# Group discussion

Dr Ben Smith





# Closing Remarks

Professor Glenn Marshall AM





# Evaluation Survey

<https://www.surveymonkey.com/r/6W95DBJ>





# Lunch and Networking