Implementation in Practice
Translating Evidence in Complex Systems
Critical optimist
I believe academics are of enormous value to society.
Shared responsibility for achieving improvements
QI as a solution in a health care system under pressure

Are we choosing wisely and doing the right things?
Planning and Preparation

Working together to make change happen

Care Delivery

Learning and organisational memory

Evaluation
Increased pressure

Urgent Response
- Ambitious plans
- Rapid development time
- Cost restricted
- Intervention focused
- Pressure for immediate change

Planning and preparation
- Targets
- Financial pressures
- Incentives
- Policies & Guidelines
- Strategic Plans

Evaluation
- Summative evaluations
- Audit
- Incident reporting
- Root cause analysis
- Monitoring & Inspection
- Inquiries

Problem not solved
(Little time or capacity to reflect on impact of previous plans)

Urgent Problems

Wasted resources
- Wasted effort
- Wasted morale
Is this familiar?
What is driving the problem?
How do we break the pattern?
The hunt for simple answers
The common ground between academics and practitioners

• Knowledge can be picked up and past along
• Knowledge independent of context
• There are universal solutions
• Effortless
Finding Answers in Complex Social Systems
Approaches to the second translational gap

Co-Production of Research = more relevant and usable research

Develop approaches to implementation and improvement = more people using evidence and better quality services

Crossing the Quality Chasm – 2001
Closing the second translational gap - Cooksey Report 2006
Evidence Based-Medicine should be supported by Evidence Based Implementation – High Level Group for Clinical Effectiveness 2007
High Quality Care for All – Ara Darzi 2008
Complex social systems

- Autonomous agents acting in parallel
- Interconnected
- Responding and reacting to each other
- Dynamic - continually changing and evolving
- Influenced by historic events
- Uncertainty and surprise
- Embedded patterns, behaviours, structures and routines
Informed by 10 years of empirical research and working collaboratively with patients, practitioners and researchers

Innovator and Service Centric Models of Change

SHIFT-Evidence
Successful Healthcare Improvement From Translating Evidence in complex systems

Reed 2013 Making an Impact? The emergence of Improvement Science in Healthcare
Reed 2018 Simple Rules for translating evidence in complex systems: a qualitative study
SHIFT-Evidence
Successful Healthcare Improvement From Translating Evidence in complex systems
**Act Scientifically and Pragmatically**

<table>
<thead>
<tr>
<th>Strategic Principle</th>
<th>Common Challenges</th>
<th>Simple Rules</th>
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</thead>
<tbody>
<tr>
<td><strong>Act Scientifically and Pragmatically</strong></td>
<td>Pre-selected interventions may not solve the problems of the local system</td>
<td>Understand the problem and opportunities</td>
</tr>
<tr>
<td>Knowledge of existing evidence needs to be combined with knowledge of the unique initial conditions of a system. Interventions need to adapt as the complex system responds and learning emerges about unpredictable effects.</td>
<td>‘Evidence’ and interventions need to be perceived as locally relevant and actionable</td>
<td>Identify, test and iteratively develop potential solutions</td>
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<td></td>
<td>Individual perceptions of system performance are unreliable</td>
<td>Assess whether improvement is achieved, capture and share learning</td>
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<td>Interventions need to be reviewed and adapted as systems evolve overtime.</td>
<td>Invest in continual improvement</td>
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Medication Management

- Patients leaving hospital with multiple medication changes

- Phone call within 72 hours to counsel on medication changes
The phone call was dependent on documentation of medication changes in hospital and discharge summary. These were found to be inaccurate.

Intervention needed to work with other practices and processes.
A pharmacist, doctor, nurse and patient met to understand why the drug charts and discharge summaries were inaccurate.

The patient asked why they were prescribed medicines in bottles they couldn’t open when they had told the physiotherapist about their arthritis.
A pharmacist, doctor, nurse and patient met to understand why the drug charts and discharge summaries were inaccurate.

The physiotherapist hadn’t been invited to the meeting.

The patient asked why they were prescribed medicines in bottles they couldn’t open when they had told the physiotherapist about their arthritis.
The team realised that four professional groups all maintained separate documentation relating to patient medications. No process existed for coordinating this information. It can not be assumed processes are working well.
Medication Management

A new form was developed for all four professional groups to use.
Medication Management

Many iterations were required to ensure the new form was acceptable to all professional groups.

If people aren’t motivated change will not take place, and without their engagement, insights will be lost.
Medication Management

It cannot be assumed that interventions will be used or be effective. Once implemented, the form was not always used correctly and not all medication changes or their rationale were documented.
# Embrace Complexity

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<td><strong>Embrace Complexity</strong> Evidence-based interventions only work if related practices and processes of care within the complex system are functional. Evidence-translation efforts need to identify and address any problems with usual care, recognising this typically includes a range of interdependent parts of the system.</td>
<td><strong>Interventions don’t work on their own - they need to fit with practices and processes of care</strong></td>
<td><strong>Understand practices and processes of care</strong></td>
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<td></td>
<td><strong>There is rarely a single, standardised, way by which care is delivered</strong></td>
<td><strong>Understand types and sources of variation</strong></td>
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<td></td>
<td><strong>It cannot be assumed that dependent processes or systems are working well</strong></td>
<td><strong>Identify systemic issues</strong></td>
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<tr>
<td></td>
<td><strong>Any intervention will compete for attention and resource with other initiatives or requirements</strong></td>
<td><strong>Seek political, strategic and financial alignment</strong></td>
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</table>
Variation in pharmacy staffing levels impacted time available for medication management
Medication Management

Variation in pharmacy staffing levels impacted time available for medication management.

It was necessary to revise staff rotas including weekend working.
Medication Management

There was variation in how different doctors completed the form and a competency gap was identified.

Broad variation in care is pervasive.
Medication Management

There was variation in how different doctors completed the form and a competency gap was identified.

Teaching was provided to support doctors and changes were made to junior doctor induction.

Broad variation in care is pervasive.
Medication Management

Making these changes required permission from organisational leaders.

Improvement often requires organisational and financial support.
There was a lack of information about a patient's medication history when they arrived at hospital.
Lack of interoperability between GP and hospital computer systems prevents sharing of patient records.
Frustrated with the inability to solve transfer of electronic health care records, a group of patients led the development of My Medication Passport, a handheld record for patients to keep track of.
The whole puzzle...
## Engage and Empower

### Strategic Principle

**Engage and Empower**

Evidence translation and system navigation requires commitment and insights from staff and patients with experience of the local system. Changes need to align with their motivations and concerns.

### Common Challenges

- **If people aren’t motivated change will not take place, and without their engagement, insights will be lost**
- Expect conflict and tension
- Underlying expectations are to get it right, first time, quickly
- Improving complex systems takes time, effort and reflection

### Simple Rules

- Actively engage those responsible for and affected by change
- Facilitate dialogue
- Build a culture of willingness to learn and freedom to act
- Provide headroom, resources, training and support
<table>
<thead>
<tr>
<th>Linear model</th>
<th>Complex systems model</th>
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<tbody>
<tr>
<td>Innovator-centric</td>
<td>Service-centric</td>
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<tr>
<td>Intervention</td>
<td>Intervening</td>
</tr>
<tr>
<td>Implementation: particular innovation, evidence, policy into practice with assessment of whether goal achieved or not</td>
<td>Improvement; where the outcome goal is fixed, and different interventions deployed and adapted until that goal is met</td>
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<td>“Did it work?” “What works everywhere?”</td>
<td>“How can we make it work here?”</td>
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<td>Disproportional investment in planning with the expectation that if this is done well the rest will follow</td>
<td>Learning through doing/intervening (having humility from the outset that change ideas are likely to require modification and preparing to learn/fail and revise)</td>
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<td>Evaluators as objective spectators</td>
<td>Taking shared responsibility to inform the design, delivery and evaluation of improvement</td>
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Is it just us?
Effort
Honesty and Evidence
Thinking Differently About Investing Effort

Traditional policy and academic perspectives in healthcare

Shifting perspectives

Overcoming systemic denial about effort required
The good news… we have many of the answers already

The bad news… people may not like them