Proving that teaching has improved outcomes not for learners but for organisations and their clients as end users

DALE SHEEHAN - UNITEC
At a post graduate level

Why train someone if you do not change their practice?

Why train someone if patient care does not improve
Kirkpatrick Level 4

“"The extent that targeted outcomes (for the business) occur as a result of training and subsequent reinforcement”

So graduates outputs at work as a result of training not their learning or their capability
Today

- Share a programme designed to change practice
- Share how we defined success and therefore evaluated the programme
- Discuss the issues that are arising and feasibility for your contexts
Medicine and pharmacy working together – teaching together to reduce harm and save lives

So did WE?

DALE SHEEHAN - CDHB/UNITEC
AVRIL LEE – PHARMACY WDHB - MARY YOUNG CDHB (AND THEIR AUDITORS)
DR JOHN THWAITES – CDHB, IAN WALLACE – WDHB (AND THE WARD CONSULTANTS)
Medication errors and adverse drug events affect an unacceptable number of New Zealanders each year, sometimes with resultant permanent disability or death (Briant, Ali-Yee & Davis 2004).

EQUIP study, conducted in 20 English hospitals, reported a prescription error rate of 8.9% for all medication orders (Dornan, Ashcroft, Heatherfield et al 2009).

In New Zealand junior doctors consider prescribing to be the most difficult aspect of their job, and the one for which they feel the least prepared. (Lee, Sheehan & Alley 2013).
There is lots available on line!
The IP intervention
Education to improve practice and patient care

- We focused on reducing prescribing errors so we measured prescribing errors
- A previous study showed no link between knowledge and prescribing
A number variables BUT

The biggest impact in our teaching appears to be from:

- The utilisation of either the ward pharmacist as clinical collaborator or coach working with the junior doctor on the ward
- Making the most of the collaborative opportunities on the ward
Collaboration occurred in practice

- Going beyond understanding of each others role – taking it to the next level and exchanging knowledge and point of view

- Modelling of collaborative communication between Consultants and Pharmacists at teaching

- JUST knowing each other better – Relationships between disciplines built over a year
No quick win, no one approach

The concept of aggregation of marginal gains

“the 1% margin for improvement in everything you do”
Did we have an impact?

- There was a **40% improvement** in prescribing practice across the year.

- Knowledge increased between 9-12% across sites.
MARGINAL GAINS
How the professionals make small changes to improve their performance

- Limiting number of cake slices at each cafe stop
- Choosing clothing without a large flappy hood
- Wearing a more elaborate-looking helmet
- Sawing off unnecessary section of seat post (not visible)
- Changing great big knobbly tyres for something slicker
- Reducing beer belly
- Removing spoke reflectors
- Fitting a carbon bottle cage

Source: cyclingcartoons.com / by @davewalker
The Audit – In the first study

Audit outcomes

• 222 drug charts sampled, 118 contained one or more opioids
• Sample
  • 40 charts Audit 1 (52 prescribed opioids)
  • 28 charts Audit 2 (30 prescribed opioids)

<table>
<thead>
<tr>
<th>Opioid</th>
<th>Number of prescriptions Initial</th>
<th>Number of prescriptions Follow up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral Morphine</td>
<td>30 (57.7%)</td>
<td>22 (73.3%)</td>
</tr>
<tr>
<td>IV Morphine</td>
<td>17 (32.7%)</td>
<td>5 (16.6%)</td>
</tr>
<tr>
<td>Oral Oxycodone</td>
<td>4 (7.7%)</td>
<td>1 (3.3%)</td>
</tr>
<tr>
<td>IV Fentanyl</td>
<td>1 (1.9%)</td>
<td>2 (6.7%)</td>
</tr>
<tr>
<td>Total # opioid</td>
<td>52</td>
<td>30</td>
</tr>
</tbody>
</table>
Audit outcomes

- Severity of prescribing error was based on the current guidelines for opioid prescribing.
- 13 potentially harmful prescriptions
- 2 potentially lethal doses.
  - The potentially lethal doses were 10x the recommended dose.

<table>
<thead>
<tr>
<th></th>
<th>Unlikely to Harm</th>
<th>Potentially harmful</th>
<th>Potentially Lethal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral Morphine</td>
<td>5</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>IV Morphine</td>
<td>8</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Oxycodone</td>
<td>0</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Fentanyl</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>13</td>
<td>2</td>
</tr>
</tbody>
</table>
What next

• Replicating epiphany programme a UK intervention and study
• 2 sites bigger enhanced intervention
• Audit for 6 months - lots work all clinicians on a ward – needs a dedicated pharmacist for 2 hours a day - Phizer paying
• First 3 months is the base line
• Then we teach, coach in practice and support and audit over three months see what impact we make
Is it worth is - Costing Phizer $30,000

- Costing Phizer $30,000
- Are we dancing with the devil (a pharmacy company)
- Are we setting a precedent
- How often would you do something like this – we will spend more time auditing than teaching
Potential Impact on medication safety

- Reduce errors by 53%
- Reduce severity errors by 50%

- That means reduce stay in hospital by 489 days
- In Britain that was GPD 320,000

- And at a case level someone may not lose their life to a medication error
Scott – Graduate outcomes

- Goes one further
- Not what can graduates do
- But how do they contribute to the organisations outcomes and strategic goals
- Its longitudinal follow up on graduate capability – feasible???
Ideas, thoughts comments

WHAT IS THE VIABILITY OF MEASURING IMPACT OF TEACHING ON THE WORKPLACE?

IMPLICATIONS FOR THE EDUCATION ORGANISATIONS AND THEIR PARTNERSHIPS WITH INDUSTRY?
Audit outcomes

- Errors identified
  - Incorrect dose, Frequency, Maximum dose guideline
  - Illegible name or prescribed medication
- Significant decrease in Prescription errors (54% to 7%)

<table>
<thead>
<tr>
<th>Opioid</th>
<th>Number of dose Errors Initial audit</th>
<th>Number of dose Errors Follow up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral Morphine</td>
<td>11(36.7%)</td>
<td>1(4.7%)</td>
</tr>
<tr>
<td>IV Morphine</td>
<td>13(76.5%)</td>
<td>1(20%)</td>
</tr>
<tr>
<td>Oral Oxycodone</td>
<td>4(100%)</td>
<td>0</td>
</tr>
<tr>
<td>IV Fentanyl</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total dose errors</strong></td>
<td><strong>28(53.8%)</strong></td>
<td><strong>2(6.7%)</strong></td>
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