CADET: Clinical & Cost Effectiveness of Collaborative Care for Depression in UK Primary Care: A Cluster Randomized Controlled Trial

David Richards, PhD

"This presentation reports independent research funded by the MRC and managed by the NIHR on behalf of the MRC-NIHR partnership. The views expressed in this presentation are those of the author(s) and not necessarily those of the MRC, NHS, NIHR or the Department of Health."
Where on earth is Exeter, Devon?
“During the early part of the 21st century, to be anxious or depressed was to stare across an abyss, empty of assistance.”

Richards, D.A
Br. J. Wellbeing, 2010
The Layard Report

- Worldwide the economic burden of this untreated anxiety and depression to economies runs to hundreds of billions of dollars, (estimated to be £19 billion in the UK alone)
ES = 0.24 (95% CI 0.17 to 0.32)

Collaborative Care

The International Literature
The possibilities…

- Collaborative care emphasizes the recognition and care of mental health problems in primary care settings and the effective collaboration of primary care and mental health clinicians.

- “Improvements in the coordination between mental health and primary care offer a prominent example of an area of healthcare reorganization that can contribute to both better quality and lower costs.” (p5)

US Agency for Healthcare Research and Quality (AHRQ) 2011
US vs. UK System Differences

- Taxation funded
- Universal coverage
- Specialist services available to all
- Integrated primary care sector
- Very little private healthcare or insurance
- No co-payments
- But...similar problems of access, availability, fidelity and quality?

Professor David A Richards, PhD
Research Question

- Is collaborative care more clinically and cost effective than usual care in the management of patients with moderate to severe depression in UK primary care?
- Design: Cluster RCT
  - 3 sites – Manchester, London, Bristol
Collaborative Care Intervention

- Usual care from their GP plus:
  - 6-12 case manager contacts with participants over 14 weeks
  - 30-40 minutes for an initial face to face appointment followed by 15-20 minute telephone contacts thereafter

- Contacts included:
  - education about depression; medication management; behavioural activation; and relapse prevention advice

- Communication with primary care
  - case managers provided GPs with regular updates and patient management advice at least four weekly and more often if clinically indicated
Case Managers

- Para-professional primary care mental health workers with post-graduate education in mental health care
- Additionally trained for five days in collaborative care
- Received weekly supervision
  - from specialist mental health professionals including clinical psychologists, psychiatrists, academic general practitioners with special interest in mental health or a senior nurse psychotherapist
Outcome Measures

Primary Outcome
Depression at 4 months, PHQ-9

Secondary Outcome
Depression at 12 months, PHQ-9

Other Secondary Outcomes at 4 & 12m
Anxiety, GAD7
Quality of Life, SF36
Health Care Utilisation Questionnaire
Health State Utilities, EQ5D
Satisfaction with Care, CSQ-8
Process of implementation, Clinical records

Sample size: 581
Follow up 4m: 505 (87%)
Follow up 12m: 498 (86%)
Participants

- **Depression:**
  - 29.9% severe, 55.6% moderately severe, 14.3% mild
  - 72.6% past history of depression

- **Anxiety:**
  - 98% had a secondary diagnosis of an anxiety disorder, the most common being generalised anxiety disorder

- **Physical health**
  - 63.7% longstanding physical illness (for example, diabetes, asthma, heart disease)

- 72% women
- mean age 44.8 years (SD 13.3)
- 43.5% in full or part-time paid employment
## Population Morbidity

### PHQ9 Baseline

<table>
<thead>
<tr>
<th>Group</th>
<th>Count</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Minimum</th>
<th>Maximum</th>
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<td>18.1</td>
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<tr>
<td>Total</td>
<td>581</td>
<td>17.8</td>
<td>5.1</td>
<td>4</td>
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### GAD7 Baseline

<table>
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<th>Standard deviation</th>
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<td>13.3</td>
<td>5.0</td>
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Results: Depression

Baseline 4mfu 12mfu

Collaborative Care
Treatment as Usual
Depression outcomes (PHQ-9)

- **Four months:**
  - Collaborative care participants were 1·33 PHQ-9 points lower (95% CI 0·35 to 2·31, p = 0·009) after adjustment for baseline depression.
  - Standardised effect size = 0·26 (95% CI 0·07 to 0·46)

- **12 months:**
  - Collaborative care participants were 1·36 points lower (95% CI 0·07 to 2·64, p = 0·04) after adjustment for baseline depression.
  - Standardised effect size = 0·26 (95% CI 0·01 to 0·52)
Recovery and Response Rates

Recovery rates

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<th>12m</th>
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<td>Treatment as Usual</td>
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Response rates

<table>
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<tr>
<th>Baseline</th>
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<th>12m</th>
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<tbody>
<tr>
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<td>O</td>
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</table>
Secondary Outcomes

Collaborative care:

- produced better outcomes than treatment as usual on the mental component scale of the SF-36 at four but not 12 months,
- had little additional effect on anxiety and the physical component scale of the SF-36 compared to treatment as usual
- participants receiving collaborative care were more satisfied with their treatment than those receiving treatment as usual
Economics at 12mfu

- No significant difference in direct and societal costs: £425.67 higher for collaborative care, 95% CI: -£119.53, £1,169.31
- EQ5D: modest but not significant QALY difference of 0.019 (95% CI -0.019 to 0.06) in favour of collaborative care
- SF-6D: significant QALY difference of 0.017 (95% CI: 0.001 to 0.032) in favour of collaborative care
Cost Effectiveness

- Incremental cost per QALY = £22,404, with an expectation of being cost-effective in 56% of cases at a payer willingness to pay threshold of £30,000 per QALY.
  - *However, this analysis is greatly influenced by one participant outlier where direct/societal costs are more than three times greater than the nearest other participant.

- Outlier removed, incremental cost per QALY = £6,130, with an expectation of being cost-effective in 80% of cases.
Next steps – 36m follow up

Sept 2012 – March 2014

Progress so far:

1. Letter sent out: 273 (100%)
2. Attempt to contact by phone: 256 (94%)
3. Opt out slip returned: 17 (6%)
4. Uncontactable: 35 (13%)
5. Contact details changed, follow up in progress: 38 (14%)
6. Able to contact by phone: 183 (67%)
7. Withdrew over the phone: 22 (8%)
8. Complete assessment: 161 (59%)
Summary

- We found that collaborative care in the UK
  - has persistent positive effects,
  - is cost effective against commonly applied decision-maker willingness to pay thresholds
  - patients are more satisfied compared to treatment as usual
- Exactly in line with international literature
Cochrane (2012) meta-analysis of 79 RCTs

- Overall SMD = 0.29 (95% CI 0.25 to 0.33)
- CADET SMD = 0·26 (0·07 to 0·46) no different from:
  - US SMD = 0·29 (0.24 to 0.33)
  - non-US ex-the UK SMD = 0.33 (0.23 to 0.43)
  - UK SMD = 0·25 (0·13 to 0·37)

- Collaborative care in the UK is as effective as US trials, therefore, for an example of a taxation-funded, integrated health system with a well-developed primary care sector
Thank you

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http://medicine.exeter.ac.uk/research/healthserv/complexinterventions/
Key successes of the programme in the first three full financial years from 2008-2011 include:

- Over 1 million people entering treatment
- 680,000 people completing treatment
- Recovery rates consistently in excess of 45%
- 65% of people significantly improved
- Over 45,000 people moving off sick pay and benefits
- Nearly 4,000 new clinical practitioners trained
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Thank you (again).