Variations in speed and nature of antenatal magnesium guideline implementation for protecting babies' brains

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Background

- Most eligible* Australian women are now offered antenatal magnesium to protect their baby's brain
- 42 babies at risk need be treated to avert each case of death or cerebral palsy
- Uptake: from almost zero to > 50% in two years in most ANZ hospitals (90% at lead hospital)

*When gestational age is < 30 weeks, and birth planned or expected in next 24 hours (as recommended by 2010 NHMRC clinical practice guidelines)

The WISH project (ongoing)

Objective of this presentation:

To assess which components of WISH are influencing magnesium sulphate implementation and uptake (using behaviour change theory)

The WISH Project

Working to Improve Survival and Health
for babies born very preterm

All 25 tertiary maternity hospitals in Aust. & NZ

- Launches, conference presentations, publications, media releases, patient (women's) leaflets
- Support – implementation teams, champions, audit support, in-service education, newsletters, feedback
- Guideline Action Packs – video, powerpoints, reminders, posters, surveys
- Qualitative research

The WISH Project

Working to Improve Survival and Health
for babies born very preterm

AUDIT

- 36% sites measuring uptake
- impact on disability-free survival most imp't (need 2-3 years to diagnose cerebral palsy)
- comprehensive audit in three sites
- routine data collection for others
- bi-national statistics, in due course

Women's and Children's Hospital, Adelaide

Year	Percentage of eligible women who received MgSO4 *(n ~ 100 each year)*
2009	5.3%
2010	28.0%
2011	76.0%
2012	90%+

Months	Percentage of eligible women who received MgSO4
Jan-Mar 2011	57%
Apr-Jun 2011	71%
Jul-Sep 2011	82%
Oct-Dec 2011	89%
To date	90%+

Other 24 hospitals

- following a guideline 18 (75%)

(soon to be 23/24)

- using WISH GAPs 12/18 (67%)
- Uptake of MgSO4 very low to 90%

(most sites > 50%)

Some indication of a link between poor uptake (so far) and lower engagement

Behaviour change theory
(adapted from Michie 2011*)

- Capability (psychological and physical)
- Opportunity (social and physical)
- Motivation (reflective and automatic)

*Michie S, van Stralen MM, West R. The behaviour change wheel: a new method for characterising and designing behaviour change interventions. *Implementation Science* 2011;6:42.

Behaviour change theory

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Capability

Opportunity

Motivation

Theoretical Domains Framework

Knowledge, skills, memory, attention & decision processes, behavioural regulation

Social influences, environmental context and resources

Social/professional role and identity, beliefs about capabilities, optimism, beliefs about consequences, intentions, goals, reinforcement, emotion

Cane J, O'Connor D, Michie S. Validation of the theoretical domains framework for use in behaviour change and implementation research. Implementation Science 2012;7:37

Capability for WISH

Physical

√ √

Knowledge high;

Already use MgSO4 in a similar way for pre-eclampsia

Psychological

?

Confidence variable – often little warning, drug errors possible, discomfort for women, doesn't happen every day

Opportunity for WISH

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Physical

√ ?

Drug delivery improvements possible (to reduce adverse effects and discomfort)

Social

√ ?

Strong norms developing;

Good team cooperation;

Disruption to team spirit e.g. if drug administered incorrectly

Motivation for WISH

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Reflective

√ √

Both clinicians and parents – consequences for baby immediately and long-term

Goal of preventing cerebral palsy which has no cure

Automatic

√ √

Emotion – preterm birth, probably unexpected

Role (social/professional) – expected to do the best

Summary – theory can refine strategy

In this example:

- physical capability (knowledge and skills) and motivation (reflective and automatic) are high

Need to work on other components

- psychological capability – can lose confidence, so need to support teams and individual clinicians
- and make system changes (e.g. improve physical opportunity through safer drug delivery)
- Social opportunity has increased – WISH has helped to reinforce norms, but not uniform across sites [yet]

Discussion (1)

- Strategies different for women and clinicians e.g. woman not emotionally prepared for preterm birth *versus* clinicians needing to respond urgently
- Theory and evidence need to be more explicitly linked e.g. individuals will have a range of beliefs
- This is not adequately captured by the concept of optimism/pessimism under Motivation

Discussion (2)

- We probably underestimate the psychological and social aspects of behaviour change
- Audit and feedback need to be routine and integrated
- Need further validation of theoretical frameworks against strategies and their outcomes
- Can be applied to design; and to refine

Acknowledgments: CP Alliance