Enabling symptom self-management via use of an electronic patient-reported outcomes (ePRO) system to increase patient self-efficacy during chemotherapy treatment

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‘eSMART: Randomised controlled trial to evaluate electronic Symptom Management using the Advanced Symptom Management System (ASyMS) Remote Technology for patients with cancer’

Chief Investigator: Prof Nora Kearney
Project overview

- Repeated-measures, parallel-group, stratified RCT
- Over ≥3 cycles of first-line chemotherapy (CTx) plus 1-year follow-up (f/u)

1,108 patients with breast cancer, colorectal cancer or lymphoma

Primary end-point:
↓ Symptom burden during CTx

Secondary end-points:
↓ Symptom burden during f/u
↑ HR-QoL (CTx and/or f/u)
↓ Needs for supportive care (CTx and/or f/u)
↑ Self-efficacy (CTx and/or f/u)
↓ Anxiety (CTx and/or f/u)
↓ Work absenteeism (CTx and/or f/u)
↓ Health service access costs
+ Effects on processes of care delivery and clinical practice
The Advanced Symptom Management System (ASyMS)

- Mobile phone-based
- Utilises an electronic Patient-Reported Outcomes (ePRO) measure, so ePRO system

Patient completes ePRO symptom questionnaire on mobile phone on a daily basis and whenever he/she feels unwell

Data transferred to server and subject to clinical risk algorithm

Real-time

Alerts transmitted to clinician’s handset

Red alert (severe or life-threatening symptoms)

Amber alert (moderate symptoms)

Evidence-based self-management advice

Symptom graphs

E-Library

Automated message prompts patient to check self-care advice

Clinician logs onto website to review alert and contacts patient

Real-time

Real-time

Real-time
How can ASyMS promote gains in patient self-efficacy?

**Self-management**

“It is about giving people living with long-term conditions the tools, skills and support they need to manage the symptoms and the consequences of living with a chronic condition, and improve their own well-being”  
(Barlow et al. 2002; selfmanagementuk.org)

**Self-efficacy**

One's beliefs in their capability to successfully manage tasks and consequently influence situations that impact on his/her life – influenced by performance accomplishments.  
(Bandura 1989, 2001)

**Self-management support**

“The systematic provision of education and supportive interventions by health care staff to increase patients' skills and confidence in managing their health problems, including regular assessment of progress and problems, goal setting and problem-solving support”  
(IOM, 2003)
How can ASyMS promote gains in patient self-efficacy?

- Access/exposure to self-management advice and educational material plus prompts towards patient engagement
- Self-management knowledge and skills, and health literacy
- Patient enablement/activation/encouragement to self-manage
- Perceived self-efficacy/self-confidence to self-manage
- Actual engagement in self-management (“taking action”)

- Barr et al. 2015, PLOS One.
- Darlow & Wen 2015, Health Informatics J.
- Groen et al. 2015, JMIR.
From self-management to self-efficacy – and back

Self-management as a patient’s behaviour + Self-efficacy as a patient’s attitude = Better patient outcomes

How best can we use ePRO systems to facilitate the self-management / self-efficacy synergy?

• Is patient willing to engage?
• Who? Patient characteristics
• Why? Personal goals
• When? Early on or custom? Patient ‘readiness’
• Enablers? ‘How to’ videos? Family member involvement?

• Barr et al. 2015, PLOS One.
• Darlow & Wen 2015, Health Informatics J.
• Groen et al. 2015, JMIR.
• McCorkle et al. 2011, CA Cancer J Clin.
• Mohr et al. 2014, JMIR.
Thank you

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