

eSMART: mhealth in cancer supportive care

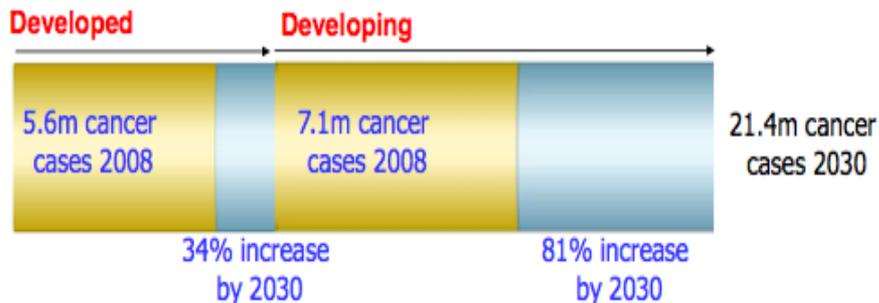
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University of Surrey

Global Burden of Cancer

The worldwide burden of cancer 2030*

- Approx. **21.4 million** new cases will be diagnosed in **2030** - up 69% from 12.7 million in 2008

*assuming no change in risk from 2008



- Cancer deaths 2008 7.6 million
- Cancer deaths 2030 13.2 million
- 20m survivors in the US 2030



Improving Patient Experience

Experience refers to knowledge and understanding of cancer and cancer care, which is derived through actually living with cancer. This definition acknowledges the totality of experience and includes survival, morbidity (physical and psychological), social and family issues.

Kearney et al 2007



Cancer Related Symptoms



- Patients experience many symptoms related to cancer and cancer treatment
- Cause significant distress and can be life threatening
- Symptoms are poorly assessed and managed
- Can cause treatment delays/lead to early treatment termination
- Impact on survival

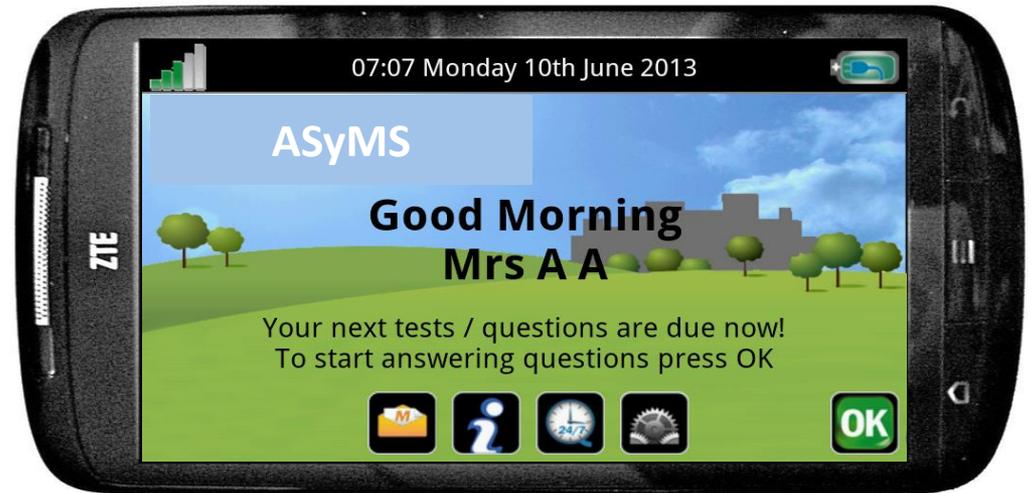
e-Patient Reported Outcomes

- Systematic assessment
- Real time not retrospective
- Rapid therapeutic response
- Facilitate patient centred care
- Access – geographical locations

Basch et al 2008; Kearney et al 2009; Snyder et al 2011

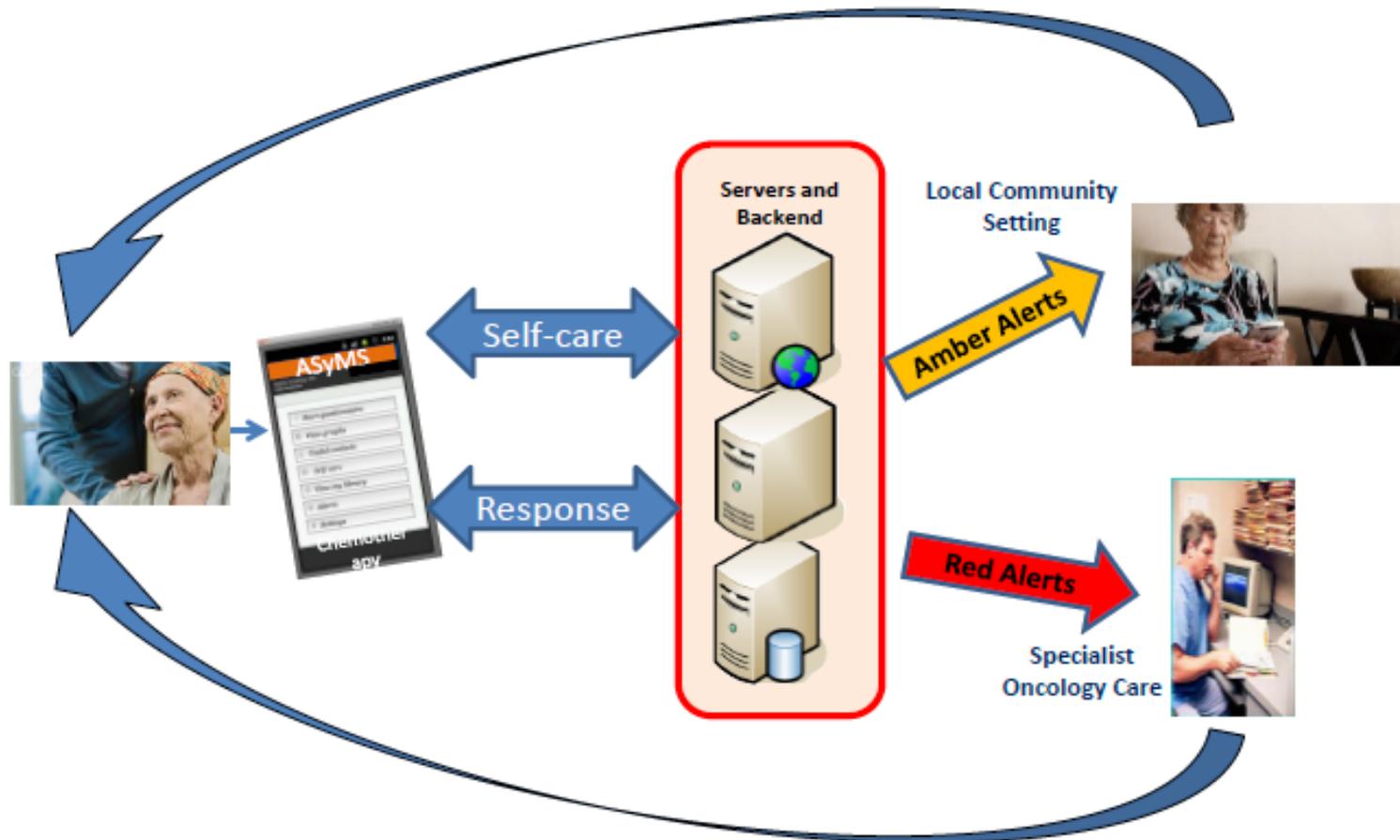
ASyMS

Advanced Symptom Management System

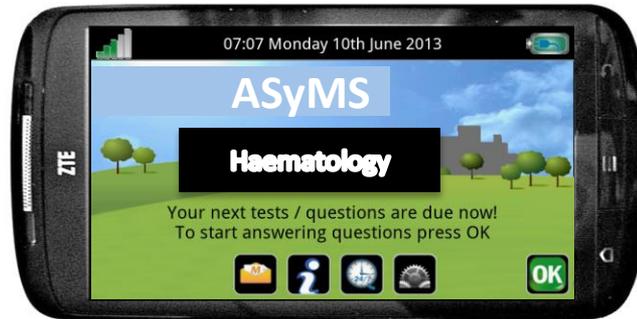
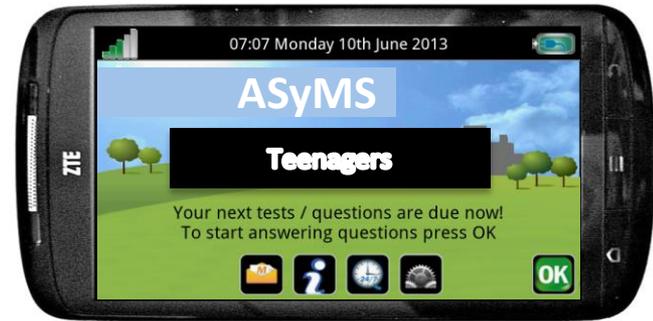
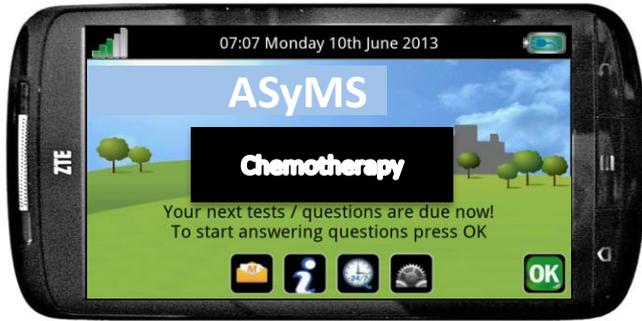


ASyMS

- Programme of research spanning over the past 10 years
- One of the most evolved and tested system in Cancer Care
- Developed in conjunction with people with cancer and cancer care experts (inductive development)
- Rigorous framework for intervention development (MRC Complex Interventions Framework, 2008)



ASyMS: Patient Support



Patient Experiences

“Feel safer that someone qualified is looking at your symptoms and would notice something out of the ordinary.”

“I mean, I’m 75 miles away from [the main cancer centre] and I’m actually 15 miles away from [the local community hospital], so to know that you’ve got a professional at the end of that [mobile phone] every day who’s seeing it, that’s quite reassuring. ‘Cause otherwise you’re just out in the sticks, and does anyone know?”

“I think that the whole thing, if I could sum up just the whole experience is reassurance, because you know it's a big thing and, and the mind plays tricks and left in the house on my own and all the rest of it for a while, but no, they were very, very good and eh, and the fact that they were able to respond so quickly, as I say was, was really great.”

“I couldn’t believe it the first time they phoned because it was only like five minutes after I had filled in the questionnaire. I was a bit taken aback, I thought, my goodness! You know? That was only five minutes since I’d put my stuff away and they’re keeping tabs, so, no, I’m very impressed.”

Individualised Patient Care

Risk model to predict symptoms in patients undergoing adjuvant chemotherapy for breast cancer



Maguire et al 2009



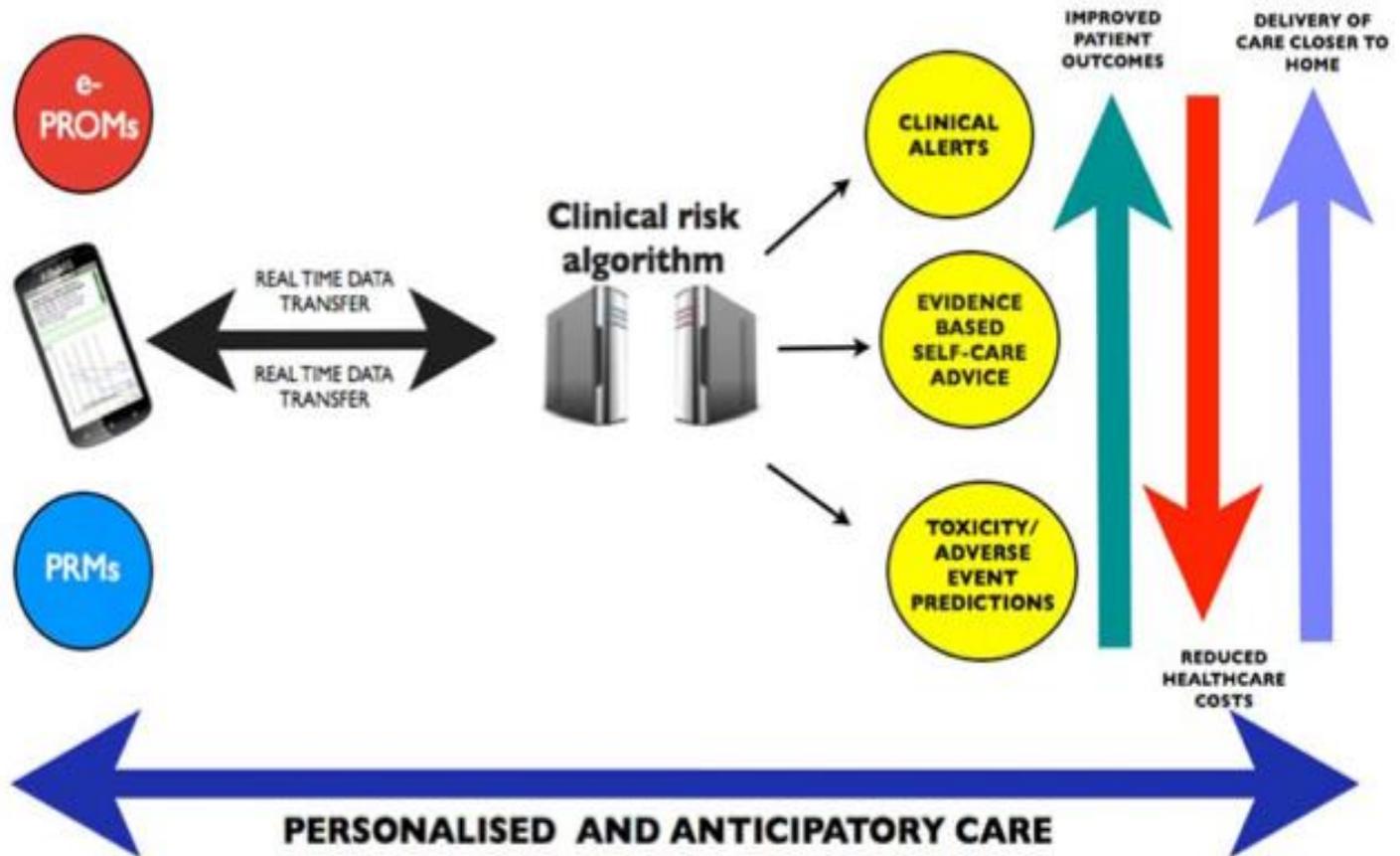
“I don’t want to talk to a doctor. I want my symptoms to go straight through to your computer.”



**THEME [HEALTH.2013.2.4.1-3]
[Investigator-driven supportive and palliative
care clinical trials and observational studies]**



- ❖ EU FP7 funded €6M
- ❖ ASyMS remote patient monitoring intervention in Europe
- ❖ 10 European and 1 US partner





- ❖ RCT >1000 Patients with breast, colorectal or haematological cancers
- ❖ Patients receiving chemotherapy and 1 year post treatment
- ❖ Predictive Risk model development



- ◆ University of Surrey
- ◆ University of Dundee
- ◆ University of California, San Francisco
- ◆ Medical University of Vienna, Austria
- ◆ NHS 24
- ◆ Kings College London, UK
- ◆ University of Athens, Greece
- ◆ University of Dublin, Ireland
- ◆ Innlandet Hospital Trust, Norway
- ◆ The European Cancer Patient Coalition (ECPC)
- ◆ Docobo

Partner	Clinical site
Vienna	Medical University Vienna
Dublin	St James's Hospital
Dublin	Waterford Regional Hospital
Dublin	St Vincent's University Hospital
Dublin	St Vincent's Private Hospital
Athens	Medical Unit Agioi Anargiri Cancer Hospital
Athens	Medical Unit St Savvas Cancer Hospital
Athens	Medical Oncology Unit Air Force General Hospital
Oslo	Innlandet Hospital Trust
Surrey	Clatterbridge Cancer Centre
Surrey	Royal Surrey County Hospital
London	Mount Vernon Cancer Centre
London	Guy's and St Thomas'
London	St George's London

ASyMS: Patient Mobile Phone



[Advice on feeling sick](#)

[Advice on mouth/throat](#)

[Advice on tiredness](#)

[Advice on pain](#)

Advice on pain

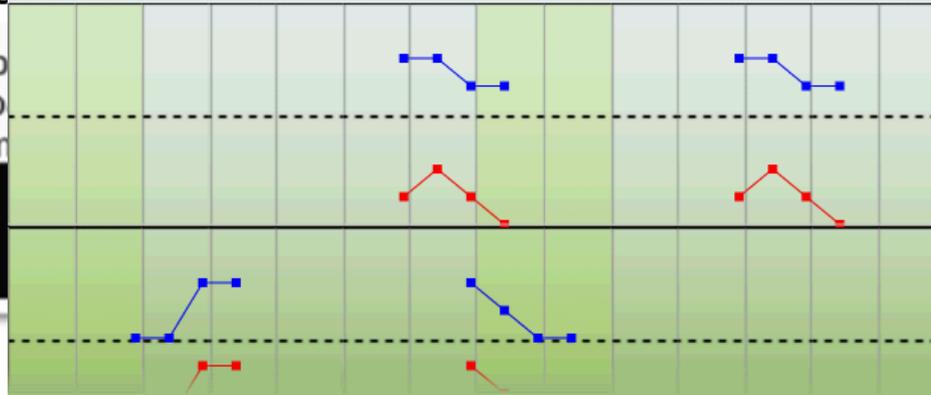
Take pain medication regularly as prescribed and before pain gets too severe. If your pain is not relieved or if you are experiencing new pain that was not your chemot

(Mon-Fri 9am
028 9026 38

It is very imp
about your p
you tell them

Symptoms Graph

S | S | M | T | W | T | F | S | S | M | T | W | T | F



Severity

Bother

Feeling sick

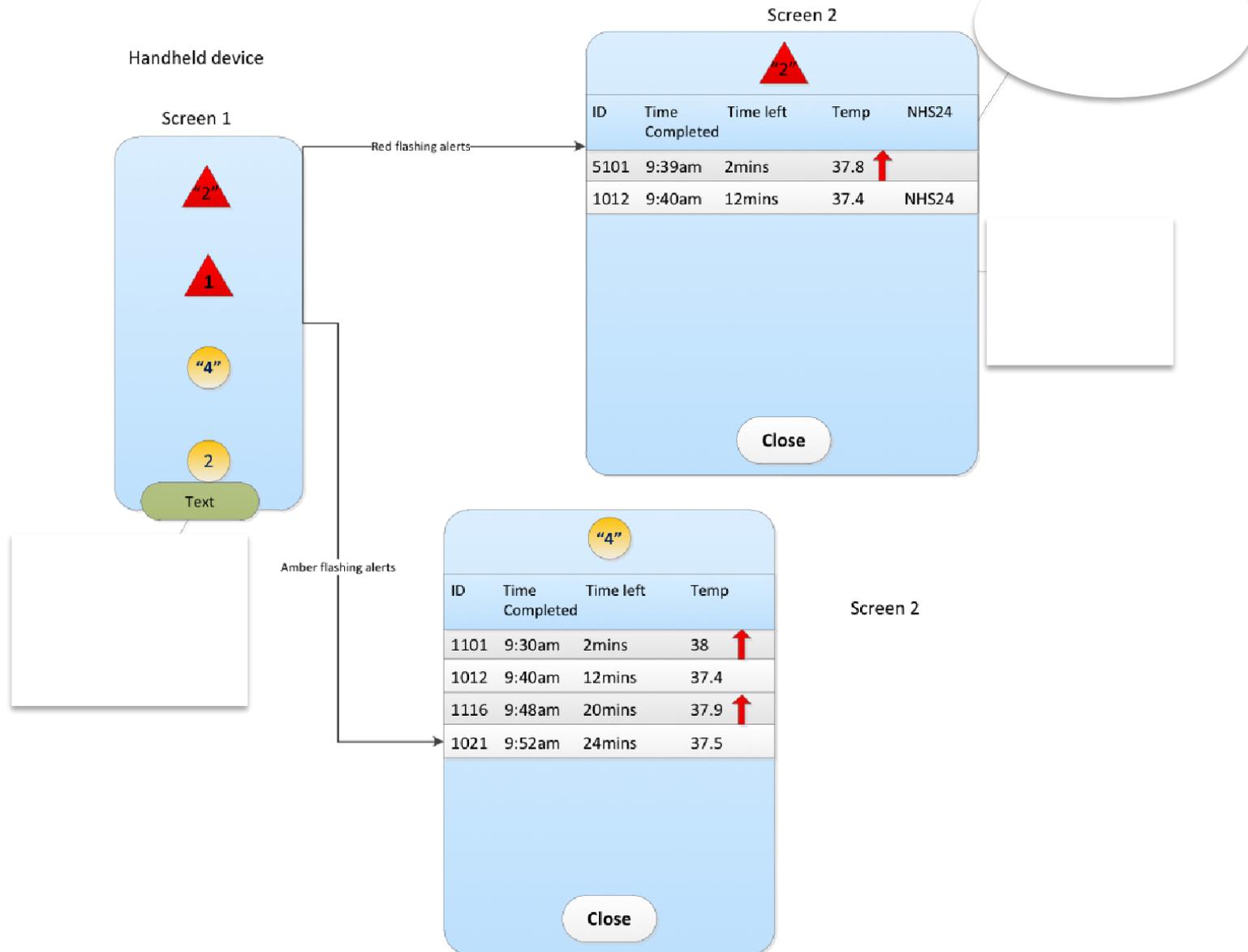
Severity

Bother

Mouth/thr



Nurse Handheld Device Screens





Primary hypothesis:

- *eSMART will reduce the symptom burden of people with breast, colorectal and haematological cancer during chemotherapy and for one year post treatment compared to those receiving standard care*

Secondary hypotheses:

- *eSMART will improve the QoL of people with breast, colorectal and haematological cancer during chemotherapy and for one year post treatment*
- *eSMART will reduce the supportive care needs of people with breast, colorectal and haematological cancer during chemotherapy and for one year post treatment*
- *eSMART will result in improved self-care self-efficacy in people with breast, colorectal and haematological cancer during chemotherapy and for one year post-treatment*
- *eSMART will result in more people with breast, colorectal and haematological cancer experiencing fewer work limitations in the year following chemotherapy treatment*
- *eSMART will be cost effective compared to standard care for the management of chemotherapy related toxicity*
- *eSMART will result in changes in clinical practice, promoting an anticipatory and preventative model of care, enabling more care to be delivered in local settings*



“In many European countries, patients undergoing chemotherapy, experience great difficulties in coping with the adverse events and anxiety during their therapy and between treatments.

“Usually, patients with cancer are given instructions on how to cope with side effects, at the beginning of their treatment. However, in many European countries, it is not possible, or very difficult for patients to consult their oncologist or oncology nurse to discuss problems or concerns arising from their chemotherapy, outside pre-arranged medical appointments. ECPC believes that eSMART will be an urgently needed solution to get a quick response to the problems and anxiety that cancer patients face during chemotherapy.”

Kathi Apostolidis, Vice President of The European Cancer Patient Coalition



Technology continues to improve communication