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Presenting/Correspondence Author: Kelly-Anne Phillips, MD
Institution/Department: Peter MacCallum Cancer Centre, Division of Cancer Medicine
Address: 305 Grattan St
City/State/Zip/Country: Melbourne, Victoria, 3000, Australia
Phone: +61 3 85597860  Fax: E-mail: Kelly.Phillips@petermac.org

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Title: Acceptability and usability of iPrevent, a web-based decision support tool for assessment and management of breast cancer risk

Body: Background: iPrevent estimates an individual's personal BC risk, using either the IBIS or BOADICEA algorithms, and provides tailored risk management information on screening, lifestyle modifications, risk-reducing surgery and risk-reducing medication. It is designed to be used collaboratively by women and their clinicians. The purpose of this pre-implementation pilot study was to assess the clinical usability and acceptability of the iPrevent prototype, and to identify barriers to clinical implementation. Exploratory aims investigated patients' BC worry, anxiety, risk perception and knowledge before and after using iPrevent. Methods: Eligible clinicians worked in primary care (PC), breast surgical (BS) or genetics clinics (GC). Their female patients were eligible if aged 18-70 years with no personal cancer history. Clinicians were familiarized with iPrevent using hypothetical cases, then acted scenarios, and lastly iPrevent was trialed with patients. All participants completed the System Usability Scale (SUS) and an acceptability questionnaire 2 weeks after using iPrevent. Patients also completed the Lerman BC Worry Scale, Spielberger State-Trait Anxiety Inventory, and BC risk perception and preference knowledge questionnaires before and 2 weeks after using the tool. Data were summarized using descriptive statistics. Results: 63 participants comprising 20 clinicians (median age 47 years, 8 PC, 6 BS, 6 GC) and 43 patients (median age 38 years, 16% high risk, 51% moderate risk, 33% average risk) were recruited. Usability was rated above average (SUS score >68) by most clinicians (68%) and patients (76%). Most (79%) of clinicians, 81% of patients agreed
iPrevent was 'easy to use', although 10 (53%) clinicians and 10 (27%) patients reported that it was too long. Most clinicians (84%) and patients (86%) found iPrevent 'very' or 'somewhat' helpful. 89% of participants reported that iPrevent provided the right amount of information. 5% reported to 'rarely' or 'not at all' worry about BC before iPrevent, and 29% after use. 25% of patients reported less impact of worrying about BC after iPrevent, 47% were unchanged and 28% reported more impact of worrying about BC after iPrevent use. State anxiety remained the same. 87% of patients correctly reported their risk category after using iPrevent® compared with 40% before. BC prevention knowledge improved for most questions. **Conclusions:** iPrevent has high usability and acceptability. Exploratory analyses suggest that iPrevent may also improve patients' BC risk perception and knowledge without adversely affecting anxiety or BC worry. Because concerns about length could be a barrier to implementation, data entry has been abbreviated in the modified version of iPrevent that will be publically available.

**Authors:** 1.Kelly-Anne Phillips, MD, Kelly.Phillips@petermac.org, 2.Louisa Lo, MBBS, dr.louisalo@gmail.com, 3.Mathias Bressel, PhD, Mathias.Bressel@petermac.org, 4.Ian M Collins, MD, i.collins@deakin.edu.au, 5.Jon Emery, PhD, jon.emery@unimelb.edu.au, 6.Prue Weideman, Grad Dip Hlth Ed, prue.weideman@petermac.org, 7.Louise Keogh, PhD, l.keogh@unimelb.edu.au, 8.Emma Steel, MGenCouns, emma.steel@stir.ac.uk, 9.Adrian Bickerstaffe, PhD, adriamb@unimelb.edu.au, 10.G Bruce Mann, PhD, Bruce.Mann@mh.org.au, 11.Alison Trainer, PhD, alison.trainer@petermac.org, 12.John L Hopper, PhD, j.hopper@unimelb.edu.au, 13.Antonis C Antoniou, PhD, aca20@medschl.cam.ac.uk, 14.Jack Cuzick, PhD, j.cuzick@qmul.ac.uk and 15.Phyllis Butow, PhD, phyllis.butow@sydney.edu.au.

**Institutions:** 1Peter MacCallum Cancer Centre, Melbourne, Victoria, Australia, 3000; 2Deakin University, Geelong, Victoria, Australia; 3The University of Melbourne, Parkville, Victoria, Australia; 4Victorian Comprehensive Cancer Centre, Melbourne, Victoria, Australia; 5University of Cambridge; 6Queen Mary University of London and 7University of Sydney.

**Disclosures by Author:**

1. - Kelly-Anne Phillips. I have no financial relationship(s) with commercial interests to disclose.
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13. - Antonis C Antoniou.
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14. - Jack Cuzick.
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15. - Phyllis Butow.
I have no financial relationship(s) with commercial interests to disclose.