Artificial Intelligence and Cancer Management: The VIRGO Study

Cortney Eakin, MD
Patient-Centered Outcomes Research Fellow
University of California Los Angeles

AI and Cancer Management

- ## What is Artificial Intelligence?

  - The ability of a machine to recognize patterns and relationships from enough representative samples and to use this information for decision-making

- ## The Current Role of Artificial Intelligence

  - Detection, Diagnosis and Staging

    - Stained tumor slides, radiology images (CT, MRI, mammograms)

    - Images of suspicious skin or cervical lesions

    - Blood samples (Circulating Tumor DNA)

  - Emphasis on imaging and genomic data

Bhinder, et al. *Cancer Disc.* 2021 April; 11(4):900-915.

VIRGO STUDY

UC Cancer Consortium

AI and Cancer Management

- ## Future Role and Challenges

  - Utilizing the patient health record and clinical history embedded in electronic medical records (EMR)

  - Integration of Patient-Reported Outcome (PRO) Measures

    - Positive impact on quality of life and symptom management, but prescheduled visits may provide false reassurance
    - Can we meet patients at their point of need through remote patient monitoring and integrate this information with the data in the EMR to improve outcomes?

Bhinder, et al. *Cancer Disc.* 2021 April; 11(4):900-915.

VIRGO
STUDY

UC Cancer Consortium

The VIRGO Study

- Overview

  - **<u>V</u>alue-based <u>I</u>ntegrated <u>R</u>ecommendation Software <u>G</u>uiding <u>O</u>varian Cancer Treatment:** A multicenter, randomized control trial to assess the efficacy of an AI-based recommendation program to improve health-related quality of life in women with ovarian cancer
  - Enrolling 200 patients across the UC Cancer Consortium

- Study Endpoints

  - **Primary Endpoint:** quality of life
  - **Secondary Endpoints:** patient-reported outcome measures, adverse events, healthcare utilization (unplanned ED visits, hospitalizations) and survival

VIRGO
STUDY

UC Cancer Consortium

The VIRGO Study

Participating Centers
- **UCLA**: Tiffany Lai, MD (PI), Cortney Eakin, MD
- **UCSF**: Lee-May Chen, MD
- **UCD**: Amy Chen, MD, Rebecca Brooks, MD
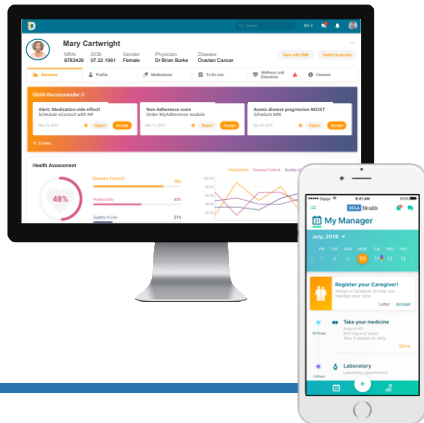- **UCSD**: Pratibha Binder, MD
- **UCI**: Jill Tseng, MD

Partners
- **GSK:** sponsor
- **DEARhealth:** software development

VIRGO STUDY

UC Cancer Consortium

The VIRGO Study

- ## About DEARhealth

  - Developed at UCLA
  - Allows for remote-patient monitoring by integrating data from PROs submitted via a smartphone app with data from the patient's electronic health record

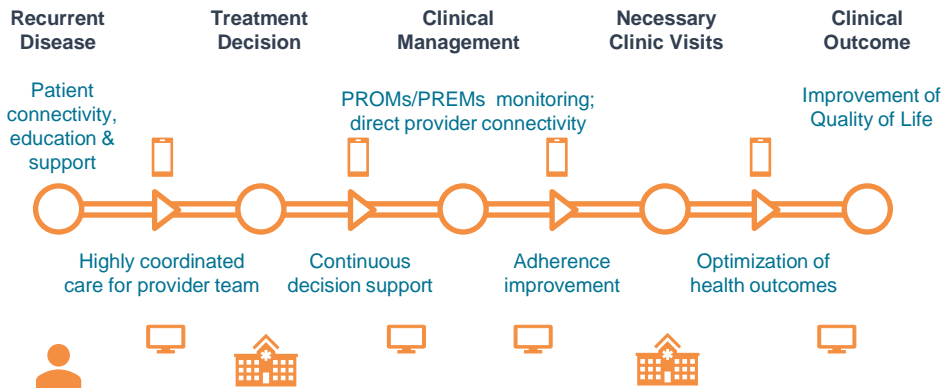**Features Ovarian Cancer Program:**

1. Provider-facing (EMR-integrated)
   1. Management of care pathway configurations
   2. Recommendations for Support modules
2. Patient-facing (Patient Journey)
   1. PROMs
   2. Care Pathway management
   3. MyAdherence (Adherence improvement)
   4. MyMenu (nutritional support)
   5. MyAcademy (education)

VIRGO STUDY

UC Cancer Consortium

Intervention

Control Group
(Standard of Care)

Recurrent Disease · Treatment Decision · Clinic Visits · Clinic Visits · Clinical Outcome

Intervention Group
(Enhanced Standard of Care)

Recurrent Disease · Treatment Decision · Clinical Management · Necessary Clinic Visits · Clinical Outcome

Patient connectivity, education & support

PROMs/PREMs monitoring; direct provider connectivity

Improvement of Quality of Life

Highly coordinated care for provider team

Continuous decision support

Adherence improvement

Optimization of health outcomes

VIRGO STUDY

UC Cancer Consortium

Thank You!

VIRGO STUDY