Early Experiences of the Cancer Moonshot’s IMPACT Consortium in Implementing Patient Reported Outcomes for Cancer Symptom Management

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Abstract

As part of its Cancer Moonshot\textsuperscript{SM}, in 2018 the National Cancer Institute established an initiative to fund a consortium that aims to improve the monitoring and management of patients’ cancer-related symptoms using informatics solutions. The consortium, Improving the Management of symptoms during And following Cancer Treatment (IMPACT), is comprised of three research centers and a coordinating center that are tasked with collecting and sharing symptom data from across the cancer care continuum – at the point-of-care in oncology clinics and via remote settings – and evaluating the effects that cancer-related symptom management tools and data have on patients, through interventions conducted in care delivery organizations. The research centers leverage informatics strategies such as novel electronic health record user interfaces, patient-directed mobile health interventions, and symptom-based clinical decision support tools. This panel will discuss their efforts with developing and implementing symptom management tools, and highlight the solutions and challenges encountered. Learning objectives include understanding current issues with developing and implementing systems for tracking cancer-related symptoms and using decision support tools for effective supportive care and symptom management.

Significance

Cancer-related symptoms such as fatigue and pain are key indicators and outcomes in cancer care, yet patients and clinicians traditionally have had limited access to symptom data and electronic monitoring and management tools. A growing area of research is looking at ways informatics can support symptom management such as remote screening tools, symptom decision support tools embedded into electronic health records (EHRs), and tools that support care coordination among patients, oncologists, and clinical staff.\textsuperscript{1} Multiple stakeholders would benefit from informatics research that identifies effective ways to develop, implement, and scale symptom management solutions that improve the delivery of cancer care.

As part of the Cancer Moonshot\textsuperscript{SM}, the National Cancer Institute (NCI) funded a research consortium to test systematic efforts for improving cancer symptom control across multiple oncology settings. This consortium, Improving the Management of symptoms during And following Cancer Treatment (IMPACT),\textsuperscript{2} funds three research centers (supported by one coordinating center and NCI scientists) that are conducting pragmatic trials in oncology settings, leveraging informatics-based solutions for collecting and routinely assessing symptoms based on data that include electronic patient reported outcomes (PROs), integrating symptom-based clinical decision support (CDS), and integrating those data into care pathways to improve symptom management and patient health outcomes. Clinical and research data from EHRs (Epic Systems Incorporated, Verona, WI) and supporting systems will be aggregated into a publicly-accessible data commons to enable consortium-level statistical analyses. Key to the effort is having the informatics-based interventions deployed and evaluated according to concepts from the field of implementation science; more specifically, the Consolidated Framework for Implementation Research.\textsuperscript{3} Through an implementation science-based approach, IMPACT intends to further the body of evidence and promote best practices for scaling and spreading effective cancer informatics interventions for symptom management.

General Description of the Panel

This panel will present how IMPACT projects are deploying informatics-related solutions for supporting symptom management in cancer care and share with audience members the consortium-wide lessons learned to date. Ways in which projects are carrying out those efforts include (but are not limited to) automated means such as InfoButtons to
provide patient-specific and validated self-management education materials for symptoms; clinical decision support to direct oncologists and nurses to PRO data and symptom management tasks during patient encounters; and a smartphone-based intervention that enables patients to report their symptoms in real time and have those data integrated into EHRs.

The panel will be organized as follows:

<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
<th>Topic</th>
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<tbody>
<tr>
<td>5’</td>
<td>Richardson</td>
<td>Moderator – Introduction of the panelists</td>
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<tr>
<td>15’</td>
<td>Smith</td>
<td>Briefly review the Cancer Moonshot℠, IMPACT’s aims, and how IMPACT supports NCI’s broader vision</td>
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<tr>
<td>15’</td>
<td>Cheville</td>
<td>Review of the E2C2 project to integrate PROs for improved self-management of cancer-related symptoms</td>
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<tr>
<td>15’</td>
<td>Bass</td>
<td>Review of the NU IMPACT project and its use of InfoButtons to help patients manage cancer symptom severity</td>
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<tr>
<td>15’</td>
<td>Hassett</td>
<td>Present SIMPRO’s development, implementation, and use of eSyM – an integrated and extensible set of tools built within Epic to help patients and clinicians manage cancer symptoms</td>
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<tr>
<td>25’</td>
<td>Richardson</td>
<td>Lead discussion, Q&amp;A with audience</td>
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**Learning Objectives**

1. Understand the current issues in developing and implementing health IT that facilitates PROs for monitoring and managing cancer-related symptoms.
2. Learn about new approaches to developing and implementing patient- and clinician-facing tools to enable the effective use of symptom data to coordinate cancer care.
3. Learn how researcher centers are applying implementation science-based study designs to evaluate the effects of health IT for symptom data in oncological care pathways.

**Individual Speaker Contributions**

**Joshua E. Richardson, PhD, MS, MLIS:** Dr. Richardson will introduce the panel participants to frame the importance and challenges with integrating symptom data into cancer care, describe IMPACT’s goals, then lead the discussion after panel presentations.

**Ashley Wilder Smith, PhD, MPH:** Dr. Smith will frame the importance and challenges with integrating symptom data into cancer care by describing NCI’s goals for IMPACT.

**Andrea L. Cheville, MD:** Dr. Cheville will describe her team’s efforts to implement cancer-related symptom data into care workflows at affiliated clinics and evaluate their effects on cancer-related sleep disturbance, pain, anxiety, depression, and fatigue, as well as functional decline.

**Michael Bass, MS:** Mr. Bass will present NU IMPACT’s efforts to integrate PROs into care workflows with an emphasis on addressing the technological challenges and solutions they have developed.

**Michael Hassett, MD, MPH:** Dr. Hassett will provide an overview of SIMPRO’s multi-site effort to implement an intervention (eSyM) that gathers patient symptom data, allows patients to view past symptom reports, provides patients with self-management tip sheets, presents patient symptom data to clinicians, and supports clinician management of patients reporting severe symptoms.
Discussion Questions

There is growing interest in informatics-based solutions to promote more effective symptom management in cancer care, such as patient-specific cancer educational materials and oncologist-facing CDS. However, the development and implementation of such interventions is still in their nascent stage and so lessons from the field can inform new and best practices. We expect the audience will want to engage the panelists in discussions on approaches for effective implementation of cancer-related symptom management tools. The discussion questions include:

1. What are the challenges for managing and monitoring cancer symptoms that informatics can address?
2. What are strategies to effectively engaging patients with cancer to generate accurate and reliable PROs?
3. How may symptom data be effectively integrated into oncology care that support clinical decision-making?

Anticipated Audience

The anticipated audience includes clinicians, patients, researchers, and informatics professionals who have an interest in cancer informatics including implementation strategies, PROs, and CDS. Given the national priority represented by the Cancer MoonshotSM, the panelists’ experiences provide timely and needed insights to implementing and scaling systems for managing symptoms in cancer care.

Attestation

The organizer has assurances from all participants that they will be available to participate at the AMIA 2020 Summit.

Conclusion

IMPACT is a multi-center consortium that started in 2018 in order to implement and evaluate system-level strategies for managing symptoms within routine clinical care. IMPACT grantees must develop a variety of informatics-based solutions in order to achieve grantee-specific aims as well as achieve consortium-level goals for disseminating evidence-based informatics implementation strategies for cancer symptoms. The panelists will discuss their experiences and efforts with developing and implementing symptom management tools and highlight the solutions and challenges they encounter.

References


2. Improving the Management of symptoms during and following Cancer Treatment (IMPACT) [Internet]. [cited 2019 Feb 21]. Available from: https://impactconsortium.org/