Re-engineering Models of Care for Managing Symptoms & Toxicity During Cancer Treatment

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Today

• The need for change
• The evidence for alternate models of care
• Implementation considerations
Why?

• Chemotherapy carries a significant risk of toxicity

• Managing toxicity is a fundamental component of oncology practice

• However, significant gaps in managing toxicity exist
ARTICLES

Frequency and Cost of Chemotherapy-Related Serious Adverse Effects in a Population Sample of Women With Breast Cancer

Michael J. Hassett, A. James O’Malley, Juliana R. Pakes, Joseph P. Newhouse, Craig C. Earle

Proportion of Breast Cancer Patients with at Least One ED+H during Adjuvant Chemotherapy

ED = Emergency Department; H = Hospitalization

Enright et al, J Oncol Pract, 2015
Unplanned Hospital Visits during Chemotherapy

Figure 3: Percentage of breast cancer, colon cancer (receiving IV or oral chemotherapy) and lymphoma cancer patients (diagnosed from 2010 to 2015) receiving provincially funded drugs who visited the hospital at least once during treatment, by year.
Proportion of Breast Cancer Patients with at Least One Acute Care visit during Adjuvant Chemotherapy across Canada

Source: CanIMPACT Study
Current Approach to Symptom & Toxicity Management

- Limited Time
- Forgetting Process
- Problems Connecting
- Reluctance to Contact
- Reactive Approach

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CURRENT STATE

High rates of ED visits & hospitalizations among patients receiving chemotherapy

NEED
Decrease Need for Acute Care

ENABLING FACTORS
Increase Alternate Care Options
Begin with the End in Mind

Improve patient & health system outcomes:

1. Improve the treatment experience & outcomes
2. Keep people out of the hospital
Potential Solutions

- Pro-active Monitoring
- Empowering Patients
- System Redesign
Symptom Monitoring With Patient-Reported Outcomes During Routine Cancer Treatment: A Randomized Controlled Trial

Ethan Basel, Allison M. Deal, Mark G. Kris, Howard I. Scher, Clifford A. Hudis, Paul Sabbatini, Lauren Rogak, Antonia V. Bennett, Amylou C. Dueck, Thomas M. Atkinson, Joanne F. Chou, Dorothy Dulko, Laura Sit, Allison Barz, Paul Novotny, Michael Fruscione, Jeff A. Sloan, and Deborah Schrag
Patients receiving chemotherapy for metastatic breast, lung, GU, GYN cancer at MSKCC

**The STAR Trial**

- **Randomize**
  - Self-report 12 common symptoms
    - Prior to / between visits, by web
    - Weekly email reminders to patients
    - Alerts to nurses (by email)
    - Reports to oncologists (at visits)

- **Standard** symptom monitoring

**Higher QL**

**Less ED visits**

**Better survival**

- Treatment discontinuation, withdrawal, hospice, death

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Randomized Trial Comparing a Web-Mediated Follow-up With Routine Surveillance in Lung Cancer Patients

Fabrice Denis, Claire Lethrosne, Nicolas Pourel, Olivier Molinier, Yoann Pointreau, Julien Domont, Hugues Bourgeois, Hélène Senellart, Pierre Trémolières, Thibaut Lizée, Jaafar Bennouna, Thierry Urban, Claude El Khouri, Alexandre Charron, Anne-Lise Septans, Magali Balavoine, Sébastien Landry, Philippe Solal-Céligny, Christophe Letellier
Leveraging Technology for Proactive Monitoring

American Study (STAR)
- 766 patients with solid tumours
- Web-based symptom reporting
- 5 months

French Study
- 117 patients with lung cancer
- Web-based symptom reporting
- 7 months

Basch et al, JCO 2016 & JAMA 2017
Denis et al, JNCI 2017
Recent Drug Approvals

Difference in OS (months)

- **American Study**
- **French Study**
- Eribulin (liposarcoma)
- Cabozantinib (RCC)
- Atezolizumab (NSCLC)
- Atezolizumab (NSCLC)
- Olaratumab (soft tissue sarcoma)
- Pembrolizumab (NSCLC)
- Nivolumab (SCCHN)

Source: FDA Website
# RCTs of Symptom Monitoring in Chemotherapy Patients

<table>
<thead>
<tr>
<th>Trial</th>
<th>Intervention</th>
<th>Symptom Control</th>
<th>Communication</th>
<th>Quality of Life</th>
<th>Treatment Duration</th>
<th>ED Visits</th>
<th>Survival</th>
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</table>

*includes monitoring between clinic visits

Detmar 2002 JAMA; Velikova JCO 2004; Kearney Supp Care Cancer 2009; Berry JCO 2011; Berry JCO 2014; Mooney Supp Care Cancer 2014; Basch JCO 2016; Basch JAMA 2017; Mooney Cancer Medicine 2017; Denis JNCI 2017
More Evidence to Come

- eSMART Trial to Evaluate ASyMS (Maguire)
- SymptomCare@Home (Mooney)
- eRAPID (Velikova)
- AToM (Krzyzanowska)
- PRO-TECT (Basch)
Possible Explanations

Proactive Symptom Monitoring

Better outcomes
Possible Explanations

Δ Symptom Trajectory → ↑ Quality of life

↑ Treatment duration → ↑ survival

Proactive Symptom Monitoring
Possible Explanations

Δ Symptom Trajectory

↑ Quality of life
↑ Treatment duration

↓ Treatment-related mortality

↑ survival

Proactive Symptom Monitoring
Possible Explanations

Δ Symptom Trajectory → ↑ Quality of life → ↑ Treatment duration → ↑ survival

Proactive Symptom Monitoring

Δ Patient Behaviour → ↑ Patient Activation

↓ Treatment-related mortality
A Tale of Two Studies

Study 1*

Alerts sent to Regular Team → Few alerts actioned → No difference in symptoms

*Mooney Supp Care Cancer 2014; #Mooney Cancer Med 2017
A Tale of Two Studies

Study 1*

- Alerts sent to Regular Team
- Few alerts actioned
- No difference in symptoms

Study 2#

- Alerts sent to Dedicated NP
- Majority of alerts acted upon
- Improvement in symptoms

*Mooney Supp Care Cancer 2014;
#Mooney Cancer Med 2017
Redesigning Care Delivery for Oncology Patients

• Oncology patients seen as an optimal target for new models of care due to significant fragmentation of care, practice variation and high costs of care.

• Concept: use alternate payment models (case management fees & shared savings) to support new approaches to deliver high value care.

• Provide proof of concept and insight into impact of financial incentives on care re-design.

Sprandio J Oncol Pract 2013; Waters J Oncol Pract 2015; Aviki Cancer 2018
Oncology Models Comparison

Patient Centred Medical Home

- Patient empowerment
- Team-based care
- Infrastructure to support local management

Oncology Care Model

- Care navigation services
- Documentation of care plan
- Data for continuous quality improvement
- Enhanced access
- Standardization of triage & clinical pathways
- Use of electronic health records
Findings to Date

**Successes**
- Early reports of fewer acute care visits
- Improved patient satisfaction
- Required resources may decrease over time

**Challenges**
- Reporting burden
- IT integration
- Costs vs savings are seen in different parts of the system

**Lessons Learned**
- Implementation takes longer than anticipated
- Substantial upfront “cost” → scalability beyond pilot sites
- Financial rewards take time to realize

Tirodkhar *J Oncol Pract* 2015; Waters *J Oncol Pract* 2015; Kline *Am Soc Clin Oncol Educ Book* 2017; Ed Colligan *Med Care* 2017; Aviki *Cancer* 2018
Quality Improvement in Systemic Treatment

Provincially supported, locally relevant

Central
• Evaluation strategy
• Provide platform for knowledge sharing
• Align funding

Local
• Define areas of focus
• Identify change ideas

• Implementation plan
• Measurement

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Vision, Goals and Strategic Priorities

VISION
To be leaders in high quality systemic treatment through innovation, integration and partnership

Goals
- Extend the Quality and Safety Agenda
- Strengthen and Enable Care Models

Strategic Priorities
- Oral Chemotherapy
- Toxicity Management
- Chemo in the Home
- Community Pharmacy
- Monitor and Evaluate
- Coordination & Communication
- New Models of Care
- Regional Capacity
- Funding Model
Quality & Safety Symposium: Identifying areas of focus

2014
Systemic Treatment Provincial Plan

2015
2016
2017
2018

2015 Systemic Treatment Safety Symposium: Patients as Partners in Managing Cancer Treatment Related Toxicity
February 27, 2015
Toronto
Outcome of 2015 Q&S Symposium: Prioritization & Validation Exercise

Access (1,770)
*PATIENTS*

Urgent Care Clinic (960)
Specialist Contact (620)
Telehealth Oncology (24/7) (190)

Education (730)
Collaborative Approach (280)
Proactive Toxicity Management Care Plan (450)

Standardization (1,150)
*PHARMACISTS & ADMIN*

Education Materials
Regional Approach to Toxicity Management
Triage Algorithms

Measurement (400)
Quality Indicators
Patient Experience
Assessment

Communication (1,590)
*NURSING & MED ONC*

Leverage Technology (710)
Electronic Record for Circle of Care (880)

Collaboration (1,060)
With Community Care Providers (550)
New Models of Care (510)
Sharing of Best Practices Across Disciplines

Person-Centred Care (1,080)
Dedicated Resource – Call-Back (710)
New Models of Care (510)
Sharing of Best Practices Across Disciplines

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Quality & Safety Symposium: Identifying areas of focus

2014: Systemic Treatment Provincial Plan

2015: 2015 Systemic Treatment Safety Symposium: Patients as Partners in Managing Cancer Treatment Related Toxicity


2017: 

2018: Current State Survey
Current State Survey

Access to unscheduled support **during** clinic hours

- **Telephone triage/call a central number**
- **Call a provider directly**
- **Other**
- **Skipped question**

Access to unscheduled support **after** clinic hours

- **Yes**
- **No**
- **Skipped question**

RCCs vs Non-RCCs

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Outcomes of the 2016 Q&S Symposium

**Consensus:** Not any one solution in isolation is the best model. A combination of multiple solutions – a basket of services - will best meet the needs of both patients and healthcare providers.

<table>
<thead>
<tr>
<th>Pre-Meeting (score)</th>
<th>Round 1 Votes (score)</th>
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<tbody>
<tr>
<td>#1 Facility level call back (3.64)</td>
<td>Facility level call back (3.66)</td>
</tr>
<tr>
<td>#2 Facility level phone triage (3.57)</td>
<td>Regional telephone triage until midnight (3.56)</td>
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<tr>
<td>#3 Facility level UCC during business hours (3.55)</td>
<td>Facility level UCC during business hours (3.51)</td>
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## 2016-2018 Regional QI Projects

<table>
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<tr>
<th>Project type</th>
<th>Regions</th>
<th>Number</th>
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<tbody>
<tr>
<td><strong>Remote symptom management</strong></td>
<td>South East, Toronto Central South, North East, North West, Toronto Central North, Central</td>
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<tr>
<td>Standardizing tele-triage (e.g. COSTaRS)</td>
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<tr>
<td>or extending tele-triage</td>
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<td><strong>Proactive support program</strong></td>
<td>Hamilton, Niagara, Central West, Mississauga, Halton, Central East, Champlain</td>
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<tr>
<td>Proactive calls to high-risk chemo patients</td>
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<tr>
<td><strong>Urgent care “clinic”</strong></td>
<td>Erie St. Clair, North Simcoe Muskoka, Waterloo Wellington</td>
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<tr>
<td><strong>Needs assessment</strong></td>
<td>South West</td>
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</table>
Central LHIN After-Hours Symptom Management Program

Partner with Bayshore HealthCare Limited through their CAREpath™ division

- 10+ years experience in oncology navigation
- Specialized oncology Registered Nurses

The Project
- 9-month pilot initiated July 2016
- After-hours 1-800 central contact number
- Adoption of COSTaRS tool for telephone triage
- Reporting back to Cancer Centre of patient symptoms and health care advice/intervention

Phase I: Stronach Regional Cancer Centre – July 2016
Phase II: All cancer programs in the Central Regional Cancer Program
Phase III: Pilot Expansion to interested Level 2 and Level 3 facilities – 12 sites total

Now CCO expanding program to entire province (74 treatment sites)
The program manages 350+ calls per month with 12 sites (Oct 2018)*

*Program started July 2016 with single site

Courtesy of Dr. Peter Anglin et al
The After Hours Program - Learnings

- Patients very much appreciate the service
- ER visit rates have moved from approximately 40% to < 20%
  - Based on patient surveys including intentions with and without support call
- Awareness of patients of program key success factor for optimal utilization
- Communication to the primary care cancer team important
- Oncology specialized nursing allows for high level patient support

Courtesy of Dr. Peter Anglin et al
2014
Systemic Treatment Provincial Plan

2015
Quality & Safety Symposium: Identifying areas of focus

2016
Current State Survey

2017
Evaluation Plan
Current/ongoing initiatives
Launch TMAC
Toxicity Management Advisory Committee Recommendations

2018

Global Aim
To Improve Symptom and Side-Effect Management for Patients on Active Treatment

Primary Drivers
I. Engage and activate patients
II. Provide timely access to care
III. Enable an effective & coordinated multidisciplinary team

Secondary Drivers
1) Improve access to real-time support
2) Enable more real-time reporting and access to patient reported data on toxicities such as PROs

Change Ideas
a) Provide self-management training and self-management support to patients
b) Provide effective patient education
c) Enable real-time patient reporting of toxicities

Global Aim
To Improve Symptom and Side-Effect Management for Patients on Active Treatment

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Secondary Drivers
1) Improve access to real-time support
2) Target high-risk patients for additional toxicity management support
3) Enhance access to accurate & timely ED utilization data

Change Ideas
a) Provide self-management training and self-management support to patients
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Global Aim
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Change Ideas
a) Provide self-management training and self-management support to patients
b) Provide effective patient education
c) Enable real-time patient reporting of toxicities
1. Patients should be provided with ongoing self-management training and support tailored to their own needs. Providers should receive training to deliver self-management support to patients based on provincial self-management standards.

2. Patients and their caregivers should be provided with evidence based and up-to-date patient education. This education should be provided in a health literate manner, using proven adult education techniques.

3. Patients should have the option to capture and report their symptoms and/or side effects with the expectation of a timely response and guidance from a knowledgeable provider specific to their needs should the severity of their symptom report require it.

4. Patients should have access to remote toxicity and symptom management advice from a knowledgeable provider (e.g. tele-triage).

5. Facilities providing systemic and/or radiation therapy should have an urgent care process in place for patients who require an urgent assessment during regular clinic hours, extended or after hours, or on weekends/holidays.

6. CCO should develop a standardized process/tool for stratifying patients by toxicity risk. High risk patients should be offered the opportunity to participate in standardized proactive toxicity management protocols (e.g. call-back program).

7. The roles and responsibilities of team members should be defined and communicated to patients and team members both within and outside of the cancer program such as oncology, ED, and Primary Care Providers.

8. CCO should provide tools for providers (including Primary Care and ED) to support the dissemination of best practices in symptom and toxicity management.

“Guidance for the Development of a Provincial Approach to Toxicity Management” Cancer Care Ontario 2018
Principles for Redesign

- Multilevel buy-in is crucial
- Learn to work “separately together”
- Harness innovation from within
- Provide platform for collaborative learning
- Build-in evaluation from the get go
- Don’t forget why you are doing this
Principles for Redesign

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• Learn to work “separately together”
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• Build-in evaluation from the get go
• Don’t forget why you are doing this

In the middle everything looks like a failure.

Rosabeth Moss Kanter
Conclusions

• Our current models of care for symptom management during treatment are not meeting the needs of patients

• Growing evidence around other models of care especially for pro-active remote monitoring but likely a whole system change is required to realize full benefits

• Implementation requires a deliberate and co-ordinated approach
“...when you go into this and you feel utterly miserable... having somebody that you can call to say, *Is this normal? I’ve got this problem, what should I do?* [that] can give you better advice than just, you know, on the back of a package... She gave me really good suggestions. It makes you know you can deal with it. Otherwise you feel like you’re flying blind. And that’s kind of scary when you don’t feel so good.”

Patient in the AToM Pilot
Thank you!