The (Art and) Science of Care Coordination: Where have we been, where are we going?

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NIH NATIONAL CANCER INSTITUTE
Objectives

1. Identify characteristics of effective teamwork & coordination

2. Understand multi-team systems in cancer care

3. Identify opportunities for Healthcare Delivery Research on teaming & coordination

4. Questions, discussion
The challenge of team-based oncology...

Developing a team of experts into an expert team

Slide courtesy of Dr. Michael Rosen
The challenge of coordinating cancer-related care over time

Local infusion center

Local primary care provider

Cancer center

Community-based telehealth clinic providing supportive mental health services

Local rehabilitation services (PT, OT, Lymph. Therapist, etc.)
**Real teams:** A structure + collection of processes (teamwork)

Co-acting groups\(^1,2\):
- 2 or more people with common purpose
- Focus = individual performance
- Often incorrectly labeled as a “team”

“Real” teams\(^1,2\):
- \(\geq 2\) people with **specific shared goal(s)** that require **interdependent effort** and **shared accountability**
- Use teamwork process to coordinate their work
- Regularly reflect on their collective performance

Multi-team systems (MTSs)\(^3\):
- Interdependent “team-of-teams” with \(\geq 1\) shared, overarching goal
- Each site/team working toward local goals and overarching MTS goals
- Use teamwork process to coordinate their work
Critical dimensions of teamwork

INFLUENCING CONDITIONS

CORE PROCESSES & EMERGENT STATES

- COGNITION
- CONFLICT
- COORDINATION
- COOPERATION
- COMMUNICATION
- Coaching/leadership
- CONTEXT
- COMPOSITION
- CULTURE
Team functioning impacts:

1) Care processes & unintended events
2) Quality, safety, efficiency
3) Clinician work life (burnout & turnover)

- Lack of communication = most frequent ‘behavioral failure’ cited in closed malpractice claims\(^5\)
- Teamwork failures correlate strongly with technical clinical errors \((r = .57-.67)\)\(^6,7\)
- MDT’s in cancer care: improved planning, adherence to pre-operative assessment & medication, pain control, survival, preservation & alignment with pt. preferences\(^8-11\)

- But! Variable…lack of active nursing role, “poor teamwork”, role/leadership confusion, variable pt. and family engagement

- Climate of teamwork protective against burnout & turnover in contexts with high emotional labor demands\(^12,13\)
Evidence about high performing teams

- Pay mindful attention to HOW they work together
- Work to develop shared mental models
- Take time to:
  - Understand interdependencies
  - Clarify roles, responsibilities, & contingencies (i.e., when roles/responsibilities might change)
- Engage in regular discipline of feedback (team self-correction)
  - Debrief regularly about HOW they have been coordinating, communicating, collaborating
- Encourage divergent views & sharing unique information
- Proactively manage task conflict
- Leaders role model, reinforce effective teaming habits
Systematic efforts to improve teamwork (e.g., team-training) linked with significant improvement in acute & outpatient settings\(^{19}\)

- 93% reduction in **missing orders** in outpatient oncology care (30% to 2%, \(p < 0.001\))\(^{20}\)
  - Few studies in cancer care context

- Surgery: 50% greater reduction in **risk-adjusted mortality** for team-training group vs. control (\(RR = 1.49\))\(^{21,22}\)
  - **Dose-response**: 1 less death per 2K procedures for each quarter surgical teamwork intervention in place

- 83% decrease in **medication and transfusion errors**\(^{23}\)

- Reductions in **fall rates**\(^{24}\)

- Improved perceptions of patient safety climate\(^{25}\)
Though much as been done to improve care, opportunities remain...

Medicare: 4 of 10 patients with cancer have at least one other chronic condition

Avg. 6-7 unique physicians care for a single Medicare beneficiary per year

43% of clinicians: “Things fall between the cracks…”

22% outpatient hem/onc clinicians: “at least monthly some labs, images, or pt records not available when needed…”
“Idealized critical pathway for breast cancer screening”

(US Dept. Health & Human Services-Health Resources & Services Administration, module on breast cancer screening quality measure)
Key question: How can we more effectively characterize & improve coordination over time in such multi-player/multi-team contexts?

Taplin, Weaver, et al., 2015
Example Challenges in Cancer Care Delivery

Opaque interdependencies

Unclear team/group/system identity + unclear roles & responsibilities

Competing local goals & misaligned incentives or payment structures

Distributed, shared leadership & coordination over prolonged periods of time

Suboptimal health IT design, integration, and decision support

Limited use of advanced, multidisciplinary training techniques

Journal of Oncology Practice, Nov 2016
Models & interventions
(adapted from Kim et al., 2016, Gorin et al., 2017)

- **Payment models & Incentives**
  - Multidisciplinary care models
  - Teamlets
  - Multidisciplinary clinics

- **Hospital discharge interventions**

- **Multidisciplinary clinics**

- **Structured tools**
  - Treatment summaries
  - Survivorship care plans
  - Handoff checklists
  - Briefing/debriefing checklists

- **Technology**
  - Electronic referral
  - Referral agreements
  - HIE
  - Patient portals
  - Personal health records

- **Training/coaching**
  - TeamSTEPPS
  - Crew resource management
  - Conflict management

- **Reflective practices**
  - Audit & feedback
  - Team debriefs
A simplified healthcare multi-team system (MTS)
Care MTS of someone with cancer (& other chronic conditions)
Care delivery research questions remain\textsuperscript{36,37,38}

- What are the teaming characteristics of high performing multi-team systems?
  - E.g., During follow-up to abnormal screening results?
  - Planning & delivery of active treatment, particularly for patients with cancer and comorbidities?
  - Survivorship?

- What teamwork processes, emergent states mediate the effect of coordination mechanisms on outcomes?

- What multi-level interventions efficiently improve longer-term teamwork & coordination both within and across care settings?

- How can IT and information system design enable effective teamwork within and across care settings and during care transitions?

- What strategies best support patients, caregivers as care team members?

- What are the best strategies for implementing changes in care delivery (e.g., new treatment protocols, new processes or policies, or new ways of communicating with other clinicians)?
The vision of HDRP is optimal health outcomes for individuals, families, and communities affected by cancer.

Our mission is to advance innovative research to improve the delivery of cancer-related care.

https://healthcaredelivery.cancer.gov  @NCICareDelivRes
Mission: Advance innovative research that reduces the burden of cancer by improving the delivery & outcomes of cancer-related care
What types of research do we support?
HDRP supports care delivery research across the cancer care continuum

- Observational research → targets for intervention
- Intervention research developing, testing care delivery interventions
- Patterns of care studies
- New measures and metrics

(Taplin et al., 2012)
Health systems & interventions research branch (HSIRB)

**Mission:** Advance observational and intervention research on structural, organizational, social, and behavioral factors that influence the delivery of cancer care -- from early detection through end of life

Observational & interventional research addressing:

- Care coordination & teamwork processes
- Team-based approaches to cancer care
- Transitions in care
- Shared decision making (e.g., HPV vaccination, genetic testing, long term surveillance)
- Multi-level interventions that improve care delivery & patient outcomes
- Interventions leveraging health information technology (HIT) or testing innovative HIT tools
4 Key tools HDRP uses to support research in these areas

- Funding research through grants, contracts, cooperative agreements
- Developing & housing large data resources & measurement tools
- Supporting research networks
- Convening the extramural research community & key stakeholders
Examples: Current HDRP funding opportunity announcements (FOAs)

<table>
<thead>
<tr>
<th>Title</th>
<th>FOA Number (Mechanism)</th>
<th>Expires</th>
<th>HDRP Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multilevel interventions in cancer care delivery: Follow-up to abnormal screening</td>
<td>PA-17-495 (R01)</td>
<td>1/8/2021</td>
<td>Erica Breslau&lt;br&gt;<a href="mailto:breslaue@mail.nih.gov">breslaue@mail.nih.gov</a></td>
</tr>
<tr>
<td>Using information technology to support systematic screening &amp; treatment of depression in cancer</td>
<td>PA-18-493 (R01)  &lt;br&gt;PA-18-492 (R21)</td>
<td>5/8/2021</td>
<td>Gurvaneet Randhawa&lt;br&gt;<a href="mailto:gurvaneet.randhawa@nih.gov">gurvaneet.randhawa@nih.gov</a></td>
</tr>
<tr>
<td>Reducing overscreening for breast, cervical, and colorectal cancers among older adults</td>
<td>PA-18-005 (R01)  &lt;br&gt;PA-18-015 (R21)</td>
<td>1/8/2021</td>
<td>Erica Breslau&lt;br&gt;<a href="mailto:breslaue@mail.nih.gov">breslaue@mail.nih.gov</a></td>
</tr>
<tr>
<td>Intervening with cancer caregivers to improve patient health outcomes &amp; utilization</td>
<td>PAR-18-246 (R01)  &lt;br&gt;PAR-18-247 (R21)</td>
<td>4/12/19</td>
<td>Michelle Mollica&lt;br&gt;<a href="mailto:mollicama@mail.nih.gov">mollicama@mail.nih.gov</a></td>
</tr>
<tr>
<td>Survivorship care planning efficacy and impact</td>
<td>PA-18-002 (R01)  &lt;br&gt;PA-18-012 (R21)</td>
<td>1/8/2021</td>
<td>Janet de Moor&lt;br&gt;<a href="mailto:demoorjs@mail.nih.gov">demoorjs@mail.nih.gov</a></td>
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https://cancercontrol.cancer.gov/funding_apply.html#hdr
FOA: Using information technology to support systematic screening, dx of depression in oncology practices
PA-18-493 (R01 Clinical Trial Optional), PA-18-492 (R21 Clinical Trial Optional)

- Goals:
  - Identify new, IT-enabled delivery models that support systematic screening and treatment of depression in cancer patients
  - Examine implementation these new delivery models in a variety of oncology practice settings, especially those serving underserved pops.
  - Evaluate the sustainability and scalability of these new delivery models
- Encourages cognitive work analysis, cognitive task analysis, workflow analyses, and human-centered design evaluations to understand clinical work relevant to depression care
- Scientific Program Director: Gurvaneet Randhawa, MD, MPH
- FOA webinar
FOA: Reducing overscreening for breast, cervical, and colorectal cancers among older adults
PA-18-005 (R01 Clinical Trial Optional), PA-18-015 (R21 Clinical Trial Optional)

- Research designed to reduce overscreening among average risk older adults

- Goals:
  - Understand factors that drive overuse
  - Develop and test interventions to reduce overuse

- Must:
  - Include screening rates as primary outcome
  - Address at least two contextual levels (individual, healthcare team, delivery system, or community)
  - Be grounded in conceptual framework

- Scientific Program Director: Erica Breslau, PhD, MPH

- FOA webinar
FOA: Improving the reach and quality of cancer care in rural populations
RFA-CA-18-026 (R01 Clinical trial required)

- Research to reduce the cancer burden and improve quality of cancer care in rural areas among low-income and/or underserved populations

Encourages:
- Observational research—that includes intervention pilot testing—to understand and address predictors of cancer care/treatment and outcomes in rural low-income and/or underserved populations
- Interventional research addressing quality of care related to cancer diagnosis, treatment, and/or survivorship

Must:
- Use 2013 RUCC codes to define rural population of interest
- Must justify how application addresses a rural population that is also primarily low income and/or underserved

Application due date: September 19, 2018, 5pm local time

Scientific Program Contact: Shobha Srinivasan, PhD

FOA webinar recording will be posted soon
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- **Developing & housing large data resources & measurement tools**
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HDRP Data & Research Resources
https://healthcaredelivery.cancer.gov/initiatives/

Publically Accessible Data
- Medical Expenditure Panel Survey: Experiences with Cancer Survivorship Supplement (MEPS)
- National Health Interview Survey (NHIS) Cancer Control Supplement (CCS)
- SEER-CAHPS Linked Data Resource
- SEER-Medicare Linked Database
- SEER-MHOS Linked Data Resource

Measurement Tools
- HealthMeasures
- Multidisciplinary Treatment Planning (MTP) Questionnaire
- Patient-Reported Outcomes Version of the Common Terminology Criteria for Adverse Events (PRO-CTCAE™)

Consumer Assessment of Healthcare Providers and Systems (CAHPS) for Cancer Care
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Examples of HDRP supported research networks

**Population-based Research to Optimize the Screening Process (PROSPR)**

- Goal: Understand system, provider, individual factors affecting quality of cancer screening in the U.S. & improve screening process
- Cervical, colorectal, and lung cancers

**NCI Community Oncology Research Program (NCORP)**

- Goal: Practice transformation
- Study clinically important, sustained modification of cancer care delivery structures & processes to improve outcomes, patient experiences, value
- Research Bases (7) lead study development & provide infrastructure
- Community sites (34), Minority/Underserved sites (12) inform study development & conduct work

**Supplements to NCI-Designated Cancer Centers**

- Supports research by many center investigators & supplements (e.g., HPV)
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Convening the research community
https://healthcaredelivery.cancer.gov/media/

Joint ASCO-NCI Teams in Cancer Care Delivery Workshop

• 19 case studies, 4 editorials
• Journal of Oncology Practice (Vol 12, No 1, Nov 2016)

Caring for caregivers and patients: Revisiting the research and clinical priorities for informal cancer caregiving workshop


Virtual speaker series & online communities

• Healthcare teams cyber discussion series
• Healthcare teams learning community on NCI Research to Reality website

HDRP Webinars
Applying for funding: Some friendly reminders

- Read entire funding announcement carefully
- Talk with Program Director/Scientific program contact before submitting & after release of summary statement
  - Pre-application: Identify staff appropriate for your idea(s) through mentors, peers, published literature, meetings, web pages, etc.
    - https://healthcaredelivery.cancer.gov/about/staff/
- Avoid jargon, abbreviations
- Write a clear, concise 1-2 page summary of your project & get feedback early
- Adopt a reviewers eye, emphasize novelty & impact
In Closing

- Thank you for your attention & participation!
- Today’s goal: 30K foot overview & where to find more
- Many resources at your disposal…including program directors
- Junior faculty, students, research administrators…want more on grant writing & administration?

**NIH Regional Seminars on Program Funding & Grants Administration**


October 17-10, 2018: San Francisco, CA
May 15-17, 2019: Baltimore, MD
Additional dates TBD soon!
Connect with us online

https://healthcaredelivery.cancer.gov

@NCICareDelivRes
Questions & discussion

Sallie.weaver@nih.gov
References


References


