Title Slide: Synthesis and Emerging Issues

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Slide 2: Why are We Here?

- Goal: Improve cancer care delivery throughout the continuum of care
  - Right service is provided to the right person at the right time in the right place
  - Achieve this result at each phase of care
- Considerable progress exists in building an intervention science
  - Smoking rates are declining
  - Screening rates are increasing
  - For many cancers, survival is improving
- Yet for many, progress is slow
  - Results often mixed
  - Sustained improvement a challenge

Slide 3: MLIs broaden and deepen the view of Intervention Science

- Often, more than just the provider and patient influence outcomes
- Context matters
  - Some experience with community-level mechanisms
  - Two levels often underrepresented in studies
    - Organizational change mechanisms
    - National and state level policy mechanisms
- We need to broaden our menu of intervention mechanisms beyond the patient and the provider

Slide 4: Multilevel Research Provides That Opportunity

[image]

Figure 1: Multilevel Influence of the Cancer Care Continuum

Shows an ellipse with 7 concentric ellipses inside it. All the ellipses come together at the bottom and move to a different section. Starting from the outermost ellipse to inner most, the sections are as follows:

- National Health Policy Environment
- State Health Policy Environment
- Local Community Environment
- Organization and/or Practice Setting
- Provider/Team
- Family & Social Supports
- Individual Patients

Individual Patients go Improve Quality of Cancer Care and then to Improved Cancer-Related Health Outcomes.

[End image]

The following is a breakdown of each section:

- National Health Policy:
    - Medicare reimbursements
    - Federal efforts to reform healthcare
    - National cancer initiatives
    - Accreditations
    - Professional Standards
- State Health Policy:
    - Medical reimbursements
    - Hospital performance data policies (dissemination, visibility, etc.)
    - State cancer plans/programs
    - Regulations/limitations on reimbursements of clinical trials
    - Visibility of state-wide advocacy groups
- Local Community:
- Organization/Practice setting:
    - Leadership
    - Organizational structure. policies and incentives
    - Delivery system design
    - Clinical decision support
    - Clinical information systems

    - Patient education and navigation
- Provider/Team
- Family/Social Supports
- Individual/Patient

Slide 5: New Health Environment Amplifies the Importance of MLI Research

- Health Reform
    - Coverage expansions
    - Health IT acceleration
    - New delivery entities (medical homes, accountable care organizations)
    - Performance measurement/payment reform
- Ehealth technology creates new connections for consumers, patients, health practitioners
- Genomic medicine holds potential for major changes in cancer care delivery
- Health consumers and purchasers demand for greater value for the dollar

Slide 6: What We Have Learned? Few MLI Studies

Intervention Target
[image]
Bar chart showing single and multilevel areas. The areas are:

- Patient
- Caregiver
- Patient and Caregiver
- Other Individual
- Group
- Organization
- Community
- Other

For additional information contact: NCIDCCPSMLI@mail.nih.gov
{end image]
Unit of Analysis
[image]
Bar chart showing single and multilevel areas. The areas are:

- Patient
- Caregiver
- Patient and Caregiver

- Other Individual
- Group
- Organization
- Community
- Other
- For additional information contact: NCIDCCPSMLI@mail.nih.gov

[end image]

Most intervention studies are single level (~80%)
Most multilevel studies look at the patient and caregiver (~25%) or the patient and some other unit of analysis

Slide 7: MLI Conference Posters Reflect Research Literature

- Few abstracts were actually MLI studies *(according to our definition)*
- Use of the terms “levels” and “interventions” differ across abstracts
- Yet, potential to build MLI studies from some of these studies appear promising
- So, go visit the Poster Session!

Slide 8: MLI Research is Challenging

- Authors noted challenges with MLI research:
  - Conceptual difficulties with study designs
  - Examining intervention effects within and across mechanisms and levels
  - Timing, both within the intervention context, and in patient disease states
  - Measurement, especially related to organizational factors and federal/state policy
  - Communication across disciplines and levels
  - New models and methods for researchers to work directly with intervention study groups
- Yet, cross-cutting issues emerged

Slide 9: Cross-Cutting Conceptual Issues

- Question: How can we use theory to guide the assessment and selection of interventions?
  - Theory should drive design; but rarely used to guide intervention strategies
  - Theories differ between levels (e.g., psychological theory for individuals; economic theory for policy)
  - We tend to focus on what is familiar

        - Cancer researchers more familiar with biology and psychology; less familiar with management, organization, and implementation sciences
- No unified theory or conceptual framework exists that includes all facets of MLI

Slide 10: Conceptual Challenges, cont.

- Weiner suggests taking a practical approach
    - Think how interventions interrelate
    - Identify possible mediators/moderators
- Alexander adds timing as a consideration
    - Disease trajectory/status of cancer patients
    - Duration, frequency, sequencing of interventions
- Cautionary advice!
    - Don't let a single discipline/stakeholder drive decisions
    - Researchers need to engage intervention stakeholders with research design process

Slide 11: Cross-Cutting Issues – Methods

- Question: How do we measure the relative influence/interaction of interventions when used as an MLI package?
    - Reductionist approach may not work here
    - Systems thinking may be more fruitful
- Implications for Research Design
    - Randomization may not always be feasible or best
    - Consider use of structural equation models
    - Simulation modeling may be promising, either as complement or preliminary step to larger study
- Still, context of intervention matters

Slide 12: Methods Challenges, cont.

- Question: What are the relevant methods for monitoring fidelity and sustainability in MLI studies?
    - MLIs emphasize effectiveness and scalability over efficacy and internal validity
    - Require flexible designs that evolve as interventions evolve (e.g., PDSA)
    - Address implementation as much as execution of interventions
- Requires longitudinal design, multiple measurement points, including endpoints after study is completed

Slide 13: Cross-Cutting Challenge: Applications

- Question: Why do interventions fail, or if initially successful, become unsustainable?
  - Fail to follow the evidence
  - Fail to consider context (e.g., primary care practice resistance to only focus on cancer screening)
  - Fail to consider benefits **and costs**
  - Fail to align incentives for patients, providers and organizations

Slide 14: Applications Challenges, cont.

- Question: What types of research platforms are best for supporting MLI studies in cancer control?
  - Should we build these platforms one study at a time?
  - Or, do we also build from existing resources?

Research Platform (Examples)

- CISNET
- Cancer Research Network
- NCI Comprehensive Cancer Centers
- NCI Community Cancer Centers
- CanCORS, PROSPER, CECCRS
- NCI Quality of Cancer Care Committee

Research Partner

- Modelers, Statisticians
- Integrated Health Systems
- Academic Cancer Centers
- Community Cancer Centers
- Population-based Researchers
- Federal Research/Delivery Agencies

Slide 15: Building Capacity to Move the Field Forward

[image]
Showing 3 ares and the top area is "Working synergistically to build MLI capacity". There are 4 subcategories under the top area that are interconnected to each other:

- **Team-based science research**: guidance on facilitating large collaborations, training, and translation
- **Systems science/methodologies**: guidance on addressing complex problems within interrelated dynamic systems
- **Transdiciplinary science research and evaluation of large initiatives**: insight on facilitating integration of disciplines/stakeholders; methods and metrics for evaluation; theoretical frameworks and systems for evaluation
- **Participatory research**: direction on approaches and processes that equitably involve partners‘ unique strengths and talents to achieve desired outcomes

The middle area is "Identification of key stakeholders/partners to create learning communities" which is directly connected to the bottom area. The bottom area is "Shifting organizational culture, norms and values for sustainability" and has 3 subcategories that are interconnected to each other:

1. **Training and infrastructure**
   - Research skills training
   - Study section experts
   - Study partners
   - Journals
   - Policy makers
2. **Social marketing, diffusion, and dissemination of MLI concept**
   - NIH and DHHS
   - Peer review journals
   - Consumers and Practitioners
   - Health care systems
   - Health policy makers
3. **Resource allocation and facilitative policy**
   - NIH and DHHS
   - Policy makers
   - Health care systems
   - Insurers

[end image]

Slide 16: More Questions than Answers?

“When you are through learning… you are through

John Wooden

[End Presentation]