TEAMS IN CANCER CARE

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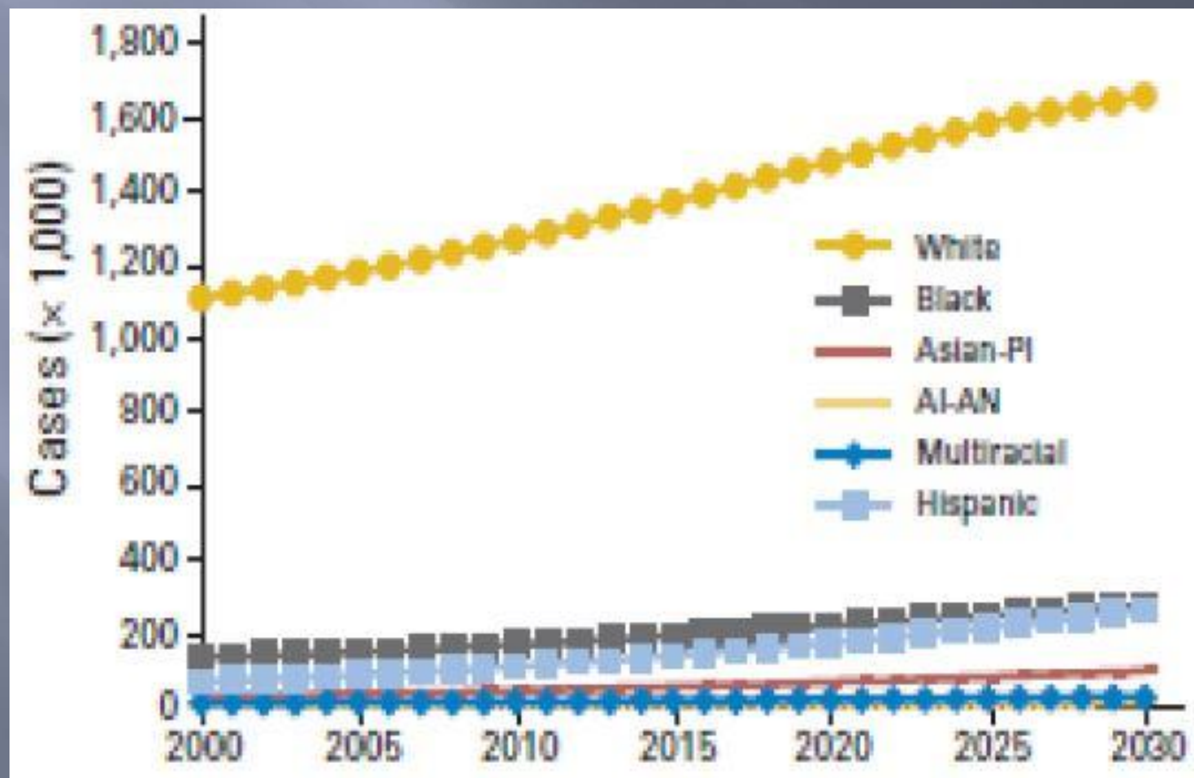
Rev. 1.26.06

Goals

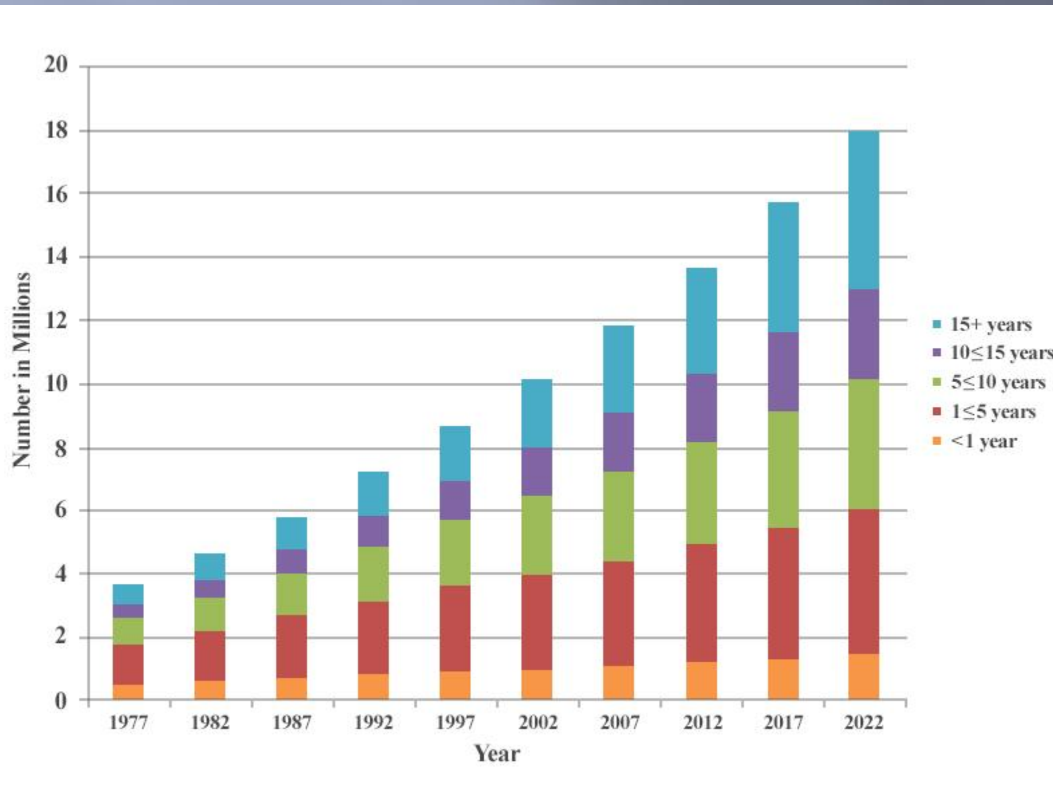
- To articulate the challenges and opportunities in cancer care
- To review the multilevel context of care
  - Individuals, groups, organizations, communities – a conceptual model
- To move beyond the rhetoric about teamwork and consider necessary research

We live in challenging & exciting times in cancer care

- The burden of cancer is growing



The population of survivors is growing



- Because of aging and the technical success of screening and treatment
- Forcing a reappraisal of how we deliver care
- Creating a constituency who are advocating for their care

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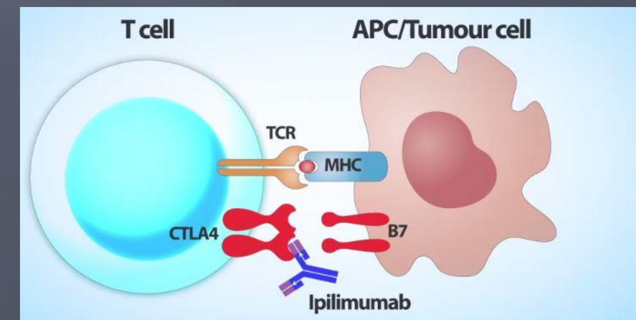
And there are new exciting therapies

- FDA approved 10 new drugs in 2014
- There are 771 new therapies in the pipeline
- Precision medicine is a major NIH focus

State of Cancer Care: ASCO – 3/2015 - JOP

The new therapies build on our expanding understanding …

- Adoptive cellular immunotherapy
  - Isolation of lymphocytes with high affinity for tumor antigen
  - Patient preparation by total body irradiation or chemotherapy
    - 3 trials in patients with metastatic melanoma
      - 49,52,73% regression respectively
        - Chemo alone, Chemo ± radiation
- Genetic modification of T cells
- Combinations
  - Cancer vaccines to generate TIL
  - Immune checkpoint blockade



Ascierto ML et al Frontiers in Oncology, 7/2015

But there is a disquieting other side to cancer care

Implementing Cancer Survivorship Care Planning
Workshop Summary
Institute of Medicine of the National Academies
2007

Delivering High-Quality Cancer Care
Charting a New Course for a System in Crisis
Institute of Medicine of the National Academies
2013

Institute of Medicine
National Research Council
Ensuring Quality Cancer Care
1999

Building a Better Delivery System
A New Engineering/Health Care Partnership
National Academy of Engineering and Institute of Medicine of the National Academies
2005

Crossing the Quality Chasm
A New Health System for the 21st Century
2001

Institute of Medicine and National Research Council of the National Academies
2006

Cancer Care for the Whole Patient
Meeting Psychosocial Health Needs
Institute of Medicine of the National Academies
2008

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And what do they say?

- 1999: "…For many Americans with cancer, there is a wide gulf between what could be construed as the ideal and the reality of their experience with cancer care"

…..and 14 years later

2013: There is a large gap between what we know and what we do ….we have a system in crisis

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Part of the challenges is that care is a complex process

- Opportunities for action are immense…

Processes of Care Across the Cancer Care Continuum → **Process of care impacts** → **Patient & population outcomes**

Types of Care

Risk assessment → Primary prevention → Detection (Screening, Symptomatic) → Diagnosis → Cancer or precursor RX → Post-treatment survivorship → End-of-life care

Transitions in Care

Process of care impacts:

- Efficiency
- Equity
- Safety
- Timeliness
- Patient-centeredness
- Sub-process effectiveness

Patient

- Risk status
- Biologic outcomes
- Health related quality of life & well-being
- Quality of death
- Financial burden
- Patient experience

Population

- Mortality
- Morbidity
- Cost-effectiveness

Each type and transition in care offers opportunities for improvement. Some have been identified in the figure, but within and between types of care there are interfaces and steps which may be articulated to identify more opportunities.

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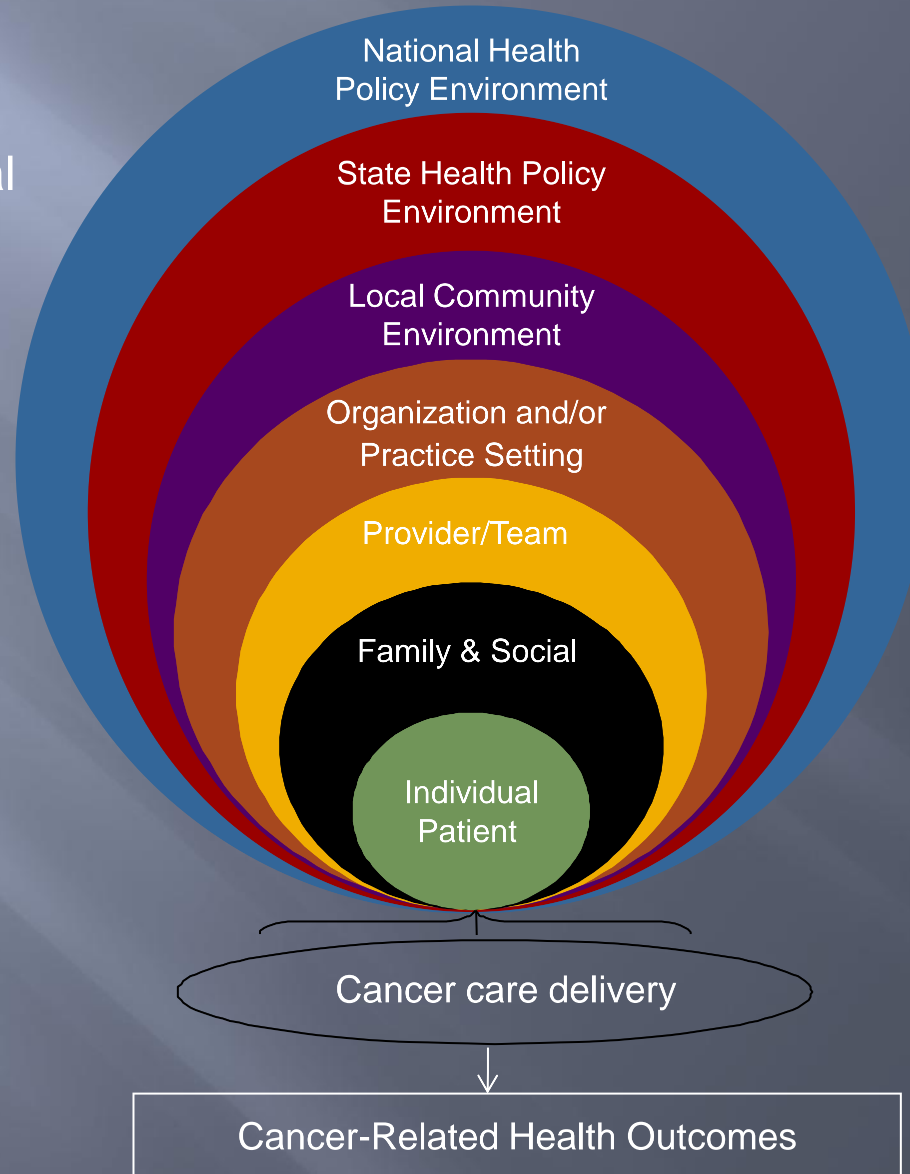
And this care occurs in a multilevel context

A set of bidirectional interactions



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Factors at each level affect the other levels and care delivery

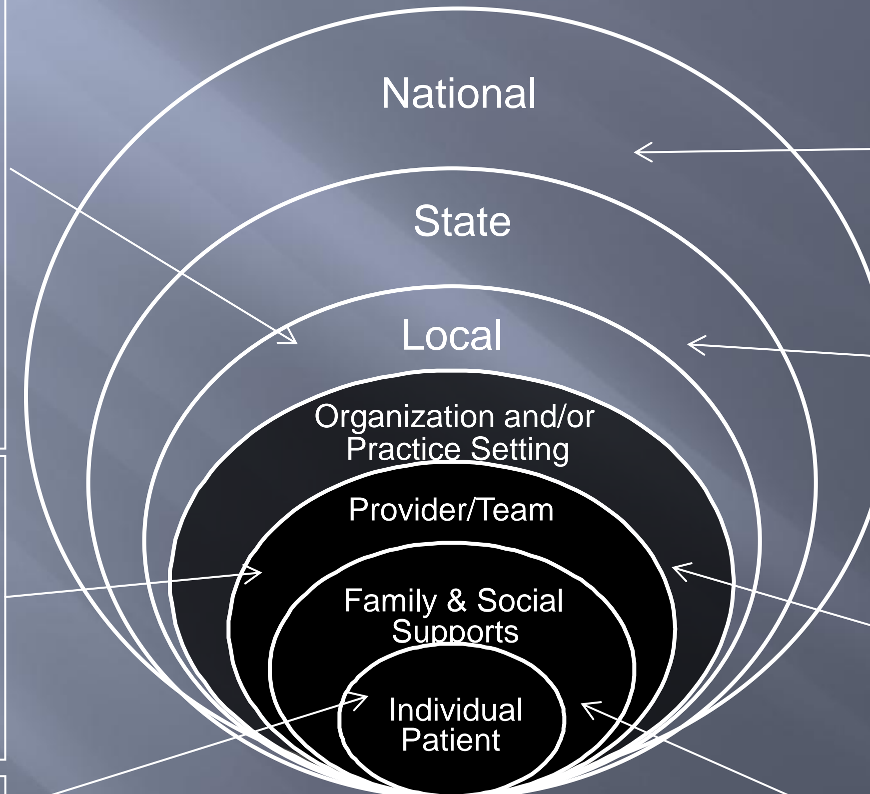
Local Community
Community Level Resources
- Medical care offerings
- Population SES
- Lay support networks
- Private cancer organizations

Local Hospital & Cancer Services
- Market
- Level of competition
- Managed care penetration
- Percent non-profit
- Specialty mix

Local Professional Norms
- MD practice organizations
- Use of guidelines
- Practice patterns

Provider / Team
Knowledge, communication skills
Perceived barriers, norms, test efficacy
Cultural competency
Staffing mix & turnover
Role definition
Teamwork

Individual Patient
Biological factors
Socio-demographics
Insurance coverage
Risk status
Co-morbidities
Knowledge, attitudes, beliefs
Decision-making preferences
Psychological reaction/coping



Improved Quality of Cancer Care

Improved Cancer-Related Health Outcomes

National
- Policy – Affordable Care Act
- Structure – Financial, Political
- Culture - Expectations

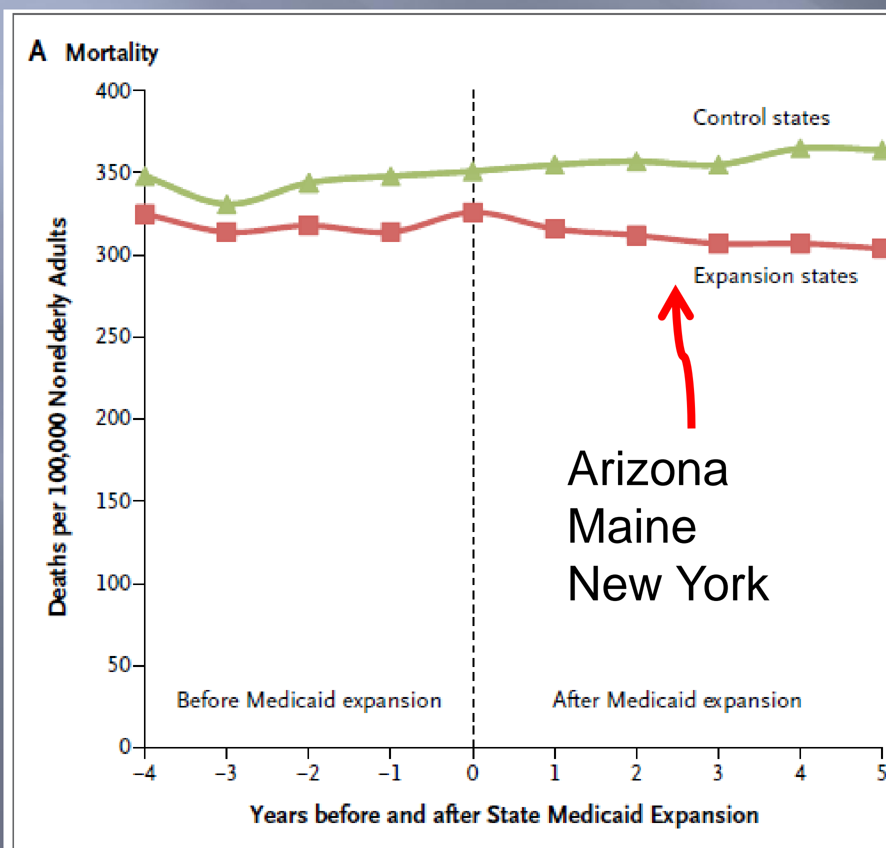
State
Policy - Medicaid
Structure - Provider Mix
Culture
- advocacy groups
- attitude/expectations

Organization / Practice Setting
Leadership
Organizational structure, policies & incentives
Delivery system design
Clinical decision support
Clinical information systems
Patient education & navigation

Family / Social Supports
Family dynamics
Friends, network support

Levels affect each other….

- Federal Policy affects State Policy
- Sommers et al – Pre/Post



- Controls from the surrounding states without expansion
- -19.6% mortality in expansion state
- Relative reduction 6% P= 0.001,

Sommers et al NEJM 2012

State leadership affects communities

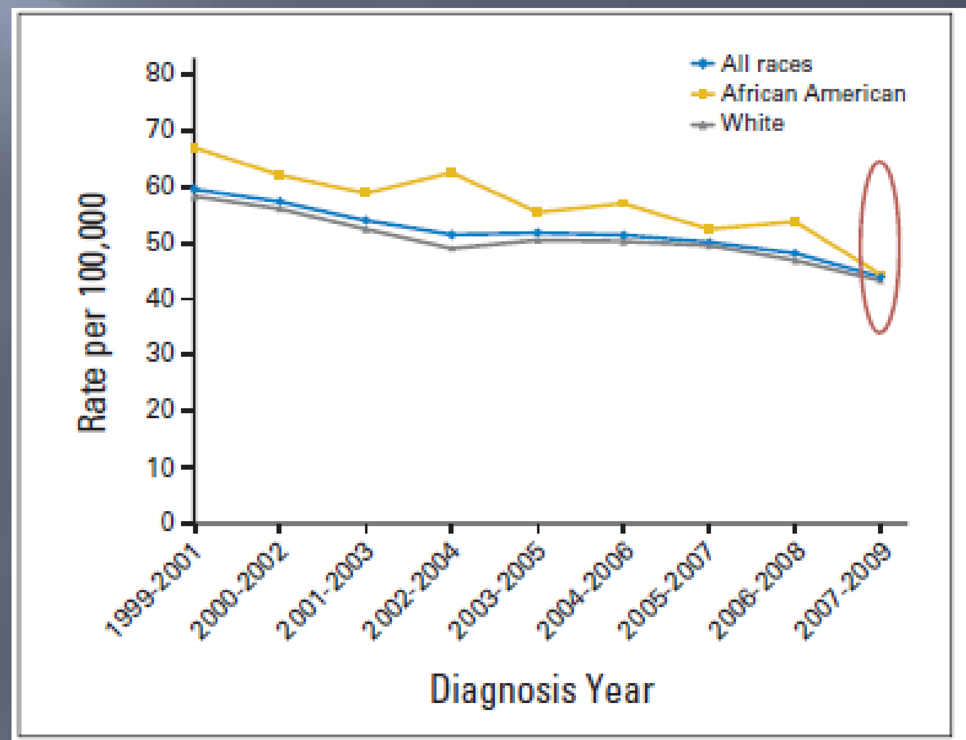
- Delaware initiative to reduce disparities in colorectal cancer mortality

•Governor's initiates Cancer Control Program – 2001

•Funded CRC screening & treatment for uninsured

•Emphasized reaching African Americans

	2002	2009
Caucasian	57%	74%
African American	48%	74%



Communities affect organizations

- Organizations needed to align to distribute follow-up evaluations
  - Follow-up to abnormal FOBT/FIT screening eventually became covered in Delaware

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Organizations affect teams

- Single greatest predictor of a reduction in medication errors when teams are trained
  - The culture of the organization
    - Leadership support
    - Expectations of safety and open communication

Delivering High-Quality Cancer Care: Charting a New Course for a system in Crisis, pge 256

But do teams affect care?

- There has been talk of teams in healthcare since the early 1900s when medicine began spawning specialization
  - Teams addressed the challenge of mastering the knowledge base
- Affordable Care Act
  - Establishes that organizations can create Patient Centered Medical Home teams for evaluation
- "Despite the pervasiveness of people working together in health care, the explicit uptake of interprofessional team-based care has been limited" – Mitchell et al 2012

What *is* a team?

- Teams defined in organizations
  - Two or more individuals who share one or more common goals, interact socially, exhibit task interdependencies, maintain and manage boundaries, and are embedded in an organizational context that sets boundaries, constrains the team, and influences exchanges with other units.

The medical care challenge lends itself to team work

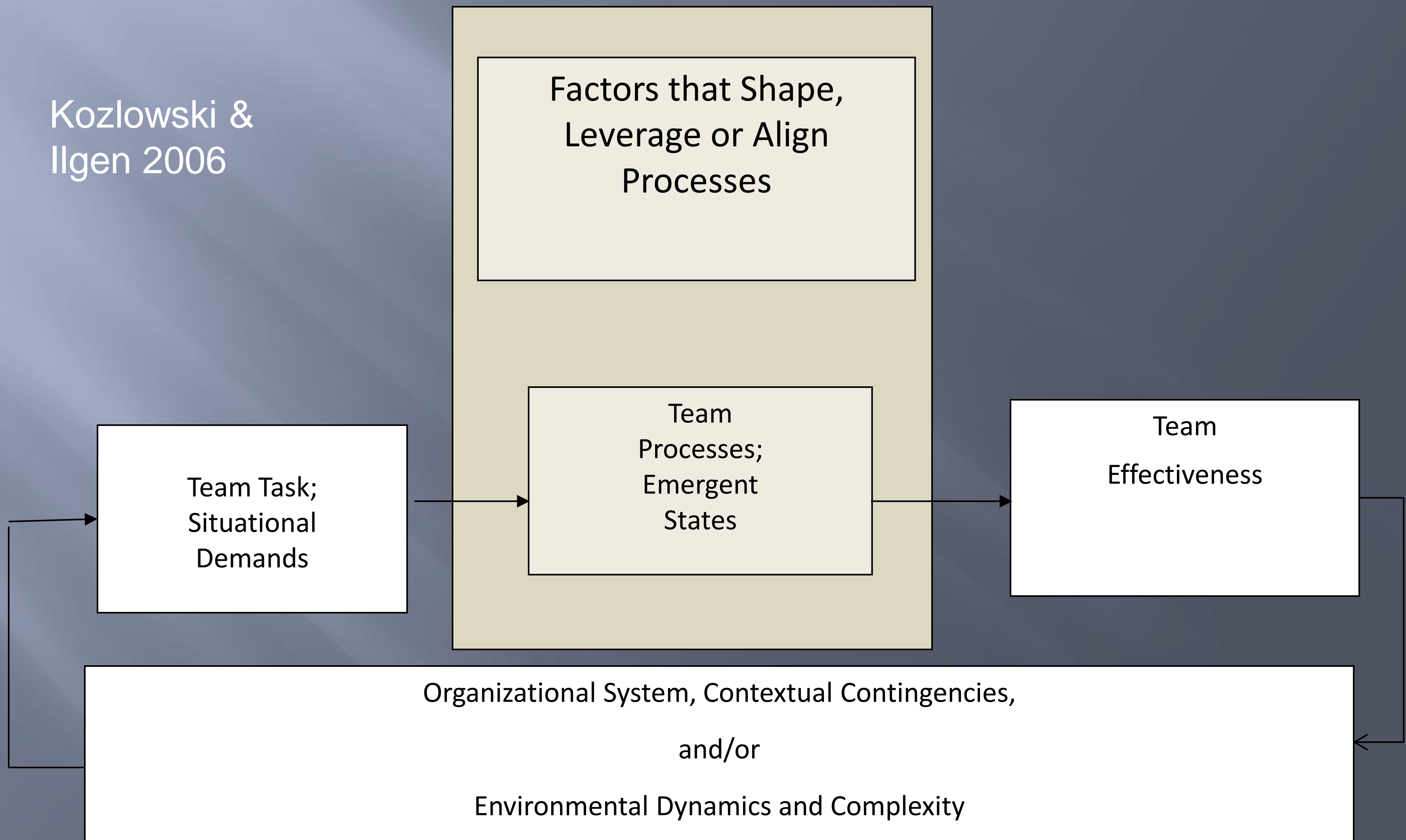
- Massive amount of information
- Extensive differentiation of tasks and technical expertise
  - Reception, measurement, treatment
  - Billing
  - Laboratory
  - Medical records
- A group that can share the work and the knowledge will have an advantage
  - But teams are much stronger in concept than in practice.

Problems with team work

- Independent training, traditions, and development
- Individual incentives and reimbursement
  - Time pressure
  - Productivity pressure
- A US culture of individualism
  - The sacred dyad: me and my physician
- Despite this background there is lots of talk of teams

Kozlowski's team conceptualization

Kozlowski & Ilgen 2006



There are other conceptualizations….

Inputs

Mediators

Outcomes

Organizational Context

Team Context

Members

Processes

Emergent States

Multiple Criteria
- Affect
- Behavior
- Consequences

Episodic Cycles

Developmental Processes

Mathieu et al 2008

Measurement of effectiveness

- Three principal approaches (West)
  - System resource
    - Quality of staff
    - Costs of work
    - Resource consumption
  - Internal process
    - Health of the team?
      - (spirit, confidence, trust, innovativeness)
  - Goal approach
    - Profitability
    - Numbers of patients seen
    - Quality of service
    - Quality of care (?)

Most work on teams has been done outside of medicine

- Cotton – 1993
  - Studies of teams working on productivity, satisfaction, absenteeism – 57 improved, 7 no change, 5 report productivity declines
- Cohen et al– 1997
  - 82% of companies with >100 employees use teams
  - Review 54 articles – proposes emergent states exist –
  - Curvilinear relationship between size and productivity
  - 4 team types – work, parallel, project, management

Several Summaries exist in medicine

- West – 2002
  - How can we work most effectively in teams
  - How can we manage organizations so that team based working contributes optimally to organizational effectiveness?
- Lemieux –Charles 2006
- Manser 2009
- Bosch 2009

West et al from the Uk

- The question is not whether teams work but how to help them do the best possible work?
  - In medical care
    - Groups begin in primary care
      - MD, Rn, LPn, lab, medical records, receptionist
    - Groups exist in every setting
      - Radiology
      - Surgery
      - Oncology
    - On the hospital wards, in the outpatient setting

Lemieux-Charles 2006

- Reviewed literature from 1985-2004
  - Included only those with comparison group
    - 1,975 ► 33 studies, (12 intervention studies)
      - care delivery teams (n=29)
      - project teams (n=4)
- Found 3 approaches to studying teams
  - Experimental/quasi experimental design
  - Experimental/quasi experimental team redesign
  - Field studies
- Concluded:
  - Some evidence: ↑ clinical outcomes, pt satisfaction
  - Not clear how interventions led to effects
  - Need studies of mechanisms, leadership, effect of changing membership, interaction with organization

Manser 2009…

- Review of 101 studies of interdisciplinary collaboration to examine whether they reduce occurrence of adverse events
  - Operating rooms, emergency rooms, Intensive care
  - Trauma, resuscitation teams
- Conclude
  - Staff perceptions of team work and safety-relevant work is associated with patient safety
  - Studies of critical incidents often show team failures
    - Communication/hierarchy
  - Little work in health care evaluating the association between emergent states and outcomes

Bosch et al 2009

- Mixed evidence of benefit
  - Review 1990-2008 literature
  - 118 abstracts (from 6,807) ► 26 articles
    - 43% of studies in inpatient settings
  - Two major types of studies
    - ↑ expertise (e.g. Pharmacist, endocrinologist, psychiatrist)
    - ↑ coordination (e.g. adding a coordinator, enhancing communication and coordination infrastructure)
- Concluded
  - Teams with ↑ expertise =► ↑ process, ± pt outcomes
  - Teams with ↑ coordination =► ↑ pt outcomes

    ± costs & resource use

Evaluating the Patient Centered Medical Home

- Organizations were expecting increased productivity – 2002
  - Running faster wasn't working at GHC
    - Retirements & discord among medical staff

Reid et al

- Background – advanced access, email, "productivity" burnout 2002-2004
- Implemented Patient Centered Medical Home 2006 – Intervention + 2 usual care controls
  - Downsized panel 2300 → 1800
  - Created teams – RNs, LPNs, pharmacists
    - Daily huddles
    - Short all-team planning meeting daily
    - Visual displays to identify and track issues
    - email

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Results from Ambulatory Care Experiences Survey

	Ambulatory care differences				
	QI	SDM	CC	AC	HO
12 m vs Baseline	2.3***	2.93**	3.32***	3.71***	1.1
24 m vs Baseline	1.6*	1.03	3.06**	2.84***	1.14
	*P<0.05	**P<0.01	***P<0.001		

QI = doctor-patient interaction
SDM = shared decision making
CC = coordination of care
AC = access to care
HO = helpfulness of staff

1,232 Intervention respondents,
2,121 control respondents

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Taplin et al 2015: Teams in cancer care

- PubMed, Scopus/ABI/Inform complete, Embase – search for pubs 8/2009 – 8/2015
  - 8,058 articles mentioning team-based approaches
    - 459 discussing teams in cancer care
      - 56 with team care evaluated
        - 16 with team care compared to control care
- Included studies (n=16):
  - 2 – screening & dx
  - 11 – Multidisciplinary care teams
  - 2 – Palliative care
  - 1 – End of life care

Results

- Designs
  - Time series (n=4)
  - RCT (n=1)
  - Contemporaneous comparison (n=10)
  - Pre/post intervention (n=1)
- Endpoints used
  - Adherence to quality indicators (n =10)
  - Satisfaction with care experience (n= 1)
  - Quality of life (n=2)
  - Mortality (n=3)

Results (continued)

- Team composition varied
  - Primary-care led with LPN, RN, & desk clerks
  - MDTs (oncology, pathology, radiology, surgery)
  - Pharmacist led teams including MD, Rn
- Increased guideline adherence to screening
- Improved timeliness of follow-up to abnormal
- MDT – improved pre-op assessment, therapy planning, adherence to meds (1 study – pharmacist)
- Little if any information on how/why

Team training is occurring

- TeamSTEPPS
  - AHRQ – James Battles PhD
- Mann & Marcus 2006 – inpatient obstetrics
  - Baseline 1999-2001, 2002 intervention, 2003-2007
  - Adverse Outcomes Index fell from 5.9% to 4.6%
- Neily et al 2010 – training of surgical teams
  - 74 Va facilities
  - 18% reduction in surgical mortality
- Salas E
  - Teams must be the right solution
  - Organizations must support the teams and change their culture

Some areas of work needed

- Under what conditions are teams the solution
  - Oncologic care? Primary Care?
    - For what activities – task specification
  - Organizational characteristics
- How do teams work?
  - Relationship between team characteristics (emergent states, mental models etc.) and outcomes
  - Role and function of leadership
  - Effect of changing membership
- Teams in *cancer care*
  - *What are the critical characteristics of multidisciplinary cancer care teams – Tumor boards*

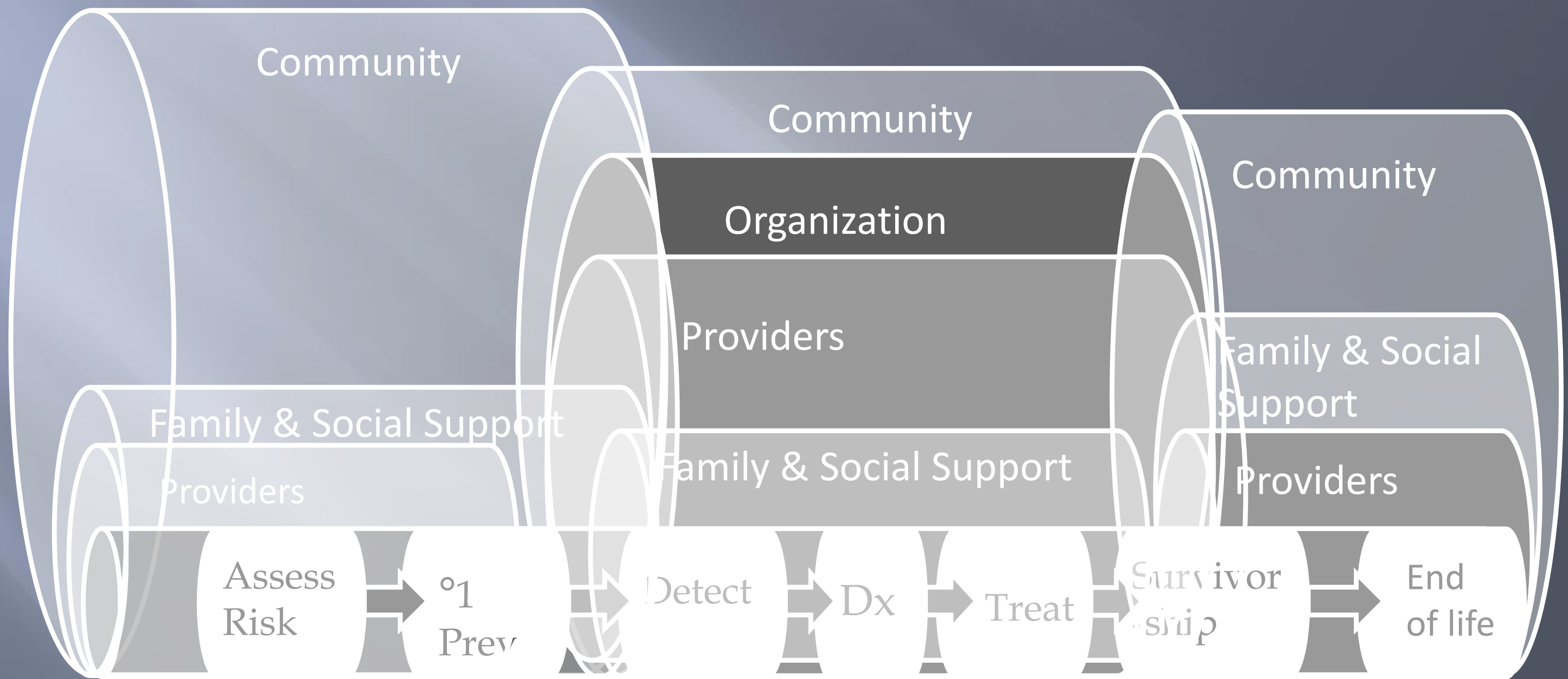
Conclusion

- We have a care system that knows what to do
  - It struggles with how best to do it
- We need to examine how the context of care links to the process of care
  - Community, organizational, and team effects
- We can learn lessons from team studies outside medicine
- We need to thinking about and practicing teamwork

End

- My colleague Jane Zapka PhD has been critical to the development of the perspective presented here, though many others have contributed as well.

It's complicated because the effects may vary across the continuum



In cancer care we need to think beyond the primary care/specialty divide

- Earle et al 2004
  - 14,884 5-year survivors of CRC cancer
    - Compared to matched controls in Medicare
    - Cancer survivorship was associated with less likelihood of getting necessary care
  - 44 quality of care indicators
- Pts cared for by Oncologists alone
    - Less preventive eye exams among diabetics
    - Less intensive tracking of HgA1c
    - Less Recommended f/u for angina, CHF, COPD
- Pts cared for by 1^{O} Care and Specialty
    - Increased preventive care
    - Less cancer surveillance

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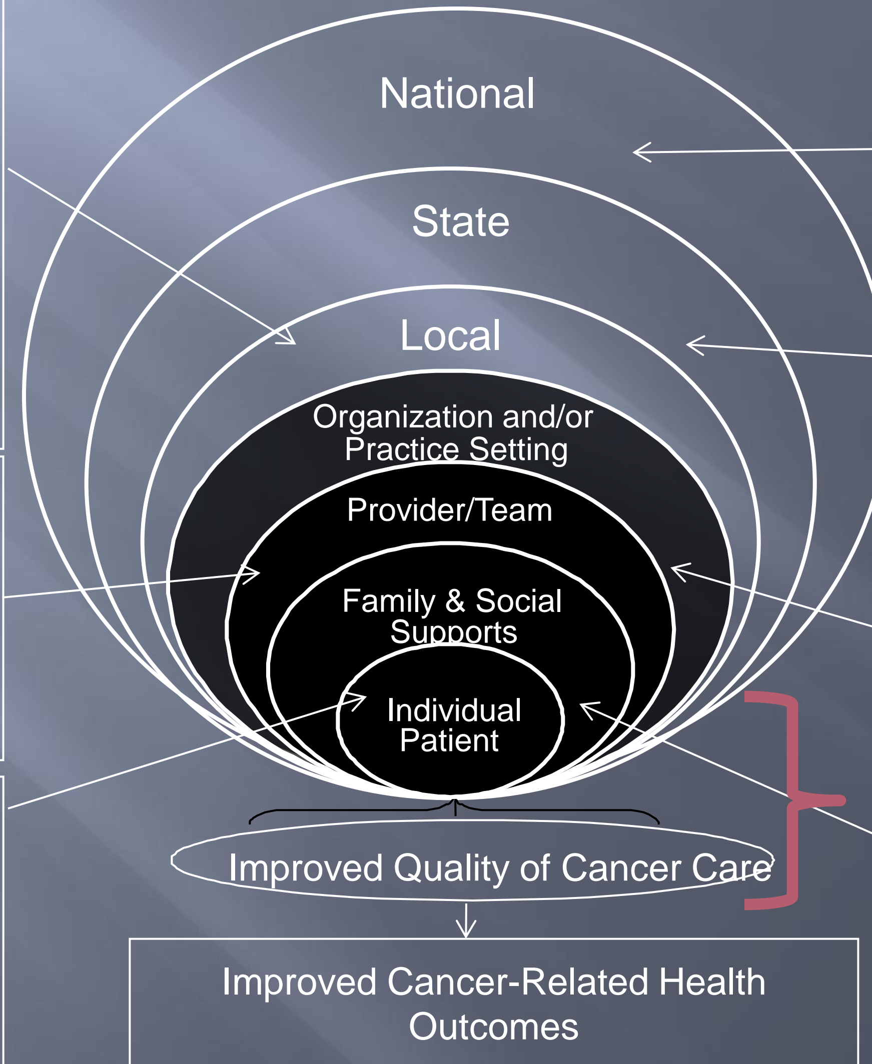

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What is this connection?

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