How Do You Take Care of Old People?

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Effective Care Systems For Older Adult Populations

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How I Helped in a Very Small Way to Change the World

No financial disclosures
How Do You Take Care of Old People?

- Describe aging experience
- Describe older adult population
- Summarize the challenge
- Outline older adult care model designs
- Translate research into policy
Medical Care for Older Adults: Challenges of Complexity and Heterogeneity
The Challenge of Complexity:

Multiple Chronic Diseases
+
Problems in Other Domains
=
Functional Decline
Chronic Disease: Sensory Deficits
Chronic Disease: Physical Deficits
Chronic Disease: Cognitive Deficits
Chronic Disease: the engine driving disability

- Heart Failure
- Arthritis
- Diabetes
- Alzheimer’s
- Hearing/Vision loss
- Osteoporosis
Activity limitation among adults due to chronic conditions, 2004–05

- Mental Illness
- Fractures or joint injury
- Lung
- Diabetes
- Heart/circulatory
- Arthritis/musculoskeletal

Number of persons with limitation of activity per 1,000 population

SOURCES: Centers for Disease Control and Prevention, National Center for Health Statistics, Health, United States, 2007, Figure 15. Data from the National Health Interview Survey.
Activity limitation among older adults due to chronic conditions, 2004–05

 SOURCES: Centers for Disease Control and Prevention, National Center for Health Statistics, Health, United States, 2007, Figure 16. Data from the National Health Interview Survey.
The Challenge of Complexity:

Multiple Chronic Diseases + Problems in Other Domains = Functional Decline
Young Person: Functional Domains

- Medical
- Familial/Social
- Cognitive/Emotional
- Environmental
- Financial

FUNCTION
Old Person: Functional Domains

- Medical
- Familial/Social
- Cognitive/Emotional
- Environmental
- Financial

FUNCTION
Geriatric Syndromes

- Confusion
- Falls
- Incontinence
- Weight loss
- Chronic Pain
- Immobility
Take Home Point #1

The most common aging scenario involves the gradual accumulation of chronic diseases, combined with non-medical stressors, eventually leading to disability.
The Challenge of Heterogeneity:

Composition of the

Elderly Population
A Population of Adults Aged 15-44

- Healthy: 92%
- Chronic Illness: 6%
- Frail: 2%
A Population of Adults Aged 65+

- Healthy: 50-65%
- Chronic Illness: 30-40%
- Frail: 5-10%
- Dying: 2%
Dying 2%
Frail 5-10%
Chronic Illness 30-40%
Healthy 50-65%
## Geriatric Population Summary

<table>
<thead>
<tr>
<th></th>
<th>Healthy</th>
<th>Chronically Ill</th>
<th>Frail</th>
<th>Dying</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Types of Conditions</strong></td>
<td>Acute; early chronic dx</td>
<td>Advanced chronic disease</td>
<td>Geriatric syndromes</td>
<td>Terminal illness</td>
</tr>
<tr>
<td><strong>QOL Impact</strong></td>
<td>Little</td>
<td>Some</td>
<td>Profound</td>
<td>Profound</td>
</tr>
<tr>
<td><strong>IADL Status</strong></td>
<td>Independent</td>
<td>Partially dependent</td>
<td>Dependent</td>
<td>Partially dependent</td>
</tr>
<tr>
<td><strong>ADL Status</strong></td>
<td>Independent</td>
<td>Independent</td>
<td>Dependent</td>
<td>Partially dependent</td>
</tr>
</tbody>
</table>
Take Home Point #2

From a health standpoint, the older adult population is much more heterogeneous than the young and middle-aged populations.
The Challenge of Heterogeneity:

Pierre Auguste Renoir
A Population of Adults Aged 65+

- Healthy: 50-65%
- Chronic Illness: 30-40%
- Frail: 5-10%
- Dying: 2%
A Population of Adults Aged 65+

- Healthy: 50-65%
- Chronic Illness: 30-40%
- Frail: 5-10%
- Dying: 2%

---

Dying: 2%
A Population of Adults Aged 65+

- Healthy: 50-65%
- Chronic Illness: 30-40%
- Frail: 5-10%
- Dying: 2%
A Population of Adults Aged 65+

- Healthy: 50-65%
- Chronic Illness: 30-40%
- Frail: 5-10%
- Dying: 2%

"Dying"
"Frail"
"5-10%"
"Dying"
"2%"
"Healthy"
"50-65%"
"Chronic Illness"
"30-40%"
A Population of Adults Aged 65+

- Healthy: 50-65%
- Chronic Illness: 30-40%
- Frail: 5-10%
- Dying: 2%
A Population of Adults Aged 65+

- Healthy: 50-65%
- Chronic Illness: 30-40%
- Frail: 5-10%
- Dying: 2%
Dying: 2%
Frail: 5-10%
Chronic Illness: 30-40%
Healthy: 50-65%
Take Home Point #3

We need to develop systems to match the type of care rendered to the varied needs of a diverse elderly population.
The Older Adult
and the
Medical Care Model
Reactive vs. Proactive Care Strategies

**Reactive Care**
- Bad Things Happen to Older Adults
  - Appropriate Management of Bad Things

**Proactive Care**
- Population Risk Assessment
  - Appropriate Management to Prevent Bad Things
A Population of Adults Aged 65+

- Dying: 2%
- Frail: 5-10%
- Chronic Illness: 30-40%
- Healthy: 50-65%
Matching Care to Patient Needs

- Healthy
- Mild Chronic Illness
- Advanced Chronic Illness
- Frail
- Dying

Usual (Acute) Care Model ➔ Chronic Disease Care Model ➔ Geriatric Care Model ➔ Palliative/Hospice Model
Proactive Care of Older Adult Populations

Risk Assessment

- Low Risk
  - Usual Care
- Medium Risk
  - Chronic Disease Care
- High Risk
  - Geriatric Care
- Dying
  - Palliat./Hospice
Proactive Care of Older Adult Populations

Risk Assessment

- Low Risk
  - Usual Care
- Medium Risk
  - Chronic Disease Care
- High Risk
  - Geriatric Care
- Dying
  - Palliat./Hospice
Risk Assessment

Population Risk Screening

Assessment to Determine Actual Risk
Identifying High-Risk Patients

- Recognition by clinicians
Identifying High-Risk Patients

- Claims data
Identifying High-Risk Patients

- Surveys
Pra Questions

- Age
- Sex
- Diabetes
- Heart disease
- Hospital admission
- Doctor visits
- General health
- Caregiver
## Pra Validation Studies

<table>
<thead>
<tr>
<th>Population</th>
<th>Low Risk</th>
<th>High Risk</th>
<th>High/Low Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital Days/Year</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medicare&lt;sup&gt;1&lt;/sup&gt;</td>
<td>2.6</td>
<td>5.2</td>
<td>2.0</td>
</tr>
<tr>
<td>Medicaid&lt;sup&gt;2&lt;/sup&gt;</td>
<td>2.4</td>
<td>4.5</td>
<td>1.9</td>
</tr>
<tr>
<td>Non-Capitated Annual Costs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HMO&lt;sup&gt;3&lt;/sup&gt;</td>
<td>$960</td>
<td>$2.637</td>
<td>2.7</td>
</tr>
</tbody>
</table>

<sup>1</sup> Boult et al. JAGS 1993;41:811-7  
<sup>2</sup> Pacala et al. JAGS 1995;43:374-7  
<sup>3</sup> Pacala et al. JAGS 1997;45:614-7
Risk Assessment

Population Risk Screening

Assessment to Determine Actual Risk
Assessment of Patients Who Screen Positive for Future Adverse Events

- Who does it?
- What is assessed?
- How is it accomplished?
National Survey of Case Management for Older Adults in HMOs

2 Types of CM Programs

**Low Intensity**
- > 60 clients/CM
- < 1/2 time spent with client
- Assesses needs
- Arranges services

**High Intensity**
- < 60 clients/CM
- > 1/2 time spent with client
- Assesses needs
- Arranges services
- Provides services

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1 Pacala et al. JAGS 1995;43:538-42
Proactive Care of High-Risk Beneficiaries

- Case Finding
- Assessment
- Management
### 4 Models of Medical Care

<table>
<thead>
<tr>
<th>Process of Care</th>
<th>Usual (Acute) Care Model</th>
<th>Chronic Disease Model</th>
<th>Geriatrics Model</th>
<th>Palliative/Hospice Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnostic and Therapeutic</td>
<td>Therapeutic</td>
<td>Proactive Team Care</td>
<td>Team Care</td>
<td></td>
</tr>
<tr>
<td>Outcome Measures</td>
<td>Disease Markers</td>
<td>Disease Sequelae</td>
<td>Function</td>
<td>Comfort Dignity</td>
</tr>
<tr>
<td>Goal of Care</td>
<td>Cure</td>
<td>Prevent Sequelae</td>
<td>Maximize Function</td>
<td>‘Good’ Death</td>
</tr>
</tbody>
</table>
A Population of Adults Aged 65+

- Healthy: 50-65%
- Chronic Illness: 30-40%
- Frail: 5-10%
- Dying: 2%
A Population of Adults Aged 65+

- Frail: 5-10%
- Dying: 2%
- Chronic Illness: 30-40%
- Healthy: 50-65%
Dying: 2%
Frail: 5-10%
Chronic Illness: 30-40%
Healthy: 50-65%
Dying 2%

Frail 5-10%

Chronic Illness 30%

Healthy 50-65%
Matching Care to Patient Needs

Healthy → Mild Chronic Illness → Advanced Chronic Illness → Frail → Dying

Usual (Acute) Care Model → Chronic Disease Care Model → Geriatric Care Model → Palliative/ Hospice Model
Proactive Care of Older Adult Populations

Risk Assessment

Low Risk
- Usual Care

Medium Risk
- Chronic Disease Care

High Risk
- Geriatric Care

Dying
- Palliat./Hospice
Disease Management of Chronic Illness
Disease Management

- Packaging of familiar and longstanding clinical concepts centered around a condition

- Systematic, population-based approach to identify patients at risk, intervene with specific therapeutic programs, and measure clinical outcomes of interest
The Goal of System Changes to Improve Chronic Illness Care

Patient → Productive Interactions → Practice Team

a planned set of interactions over time during which the critical clinical and behavioral elements of care are performed reliably
Wagner Chronic Care Model

Community
- Resources and Policies
- Self-Management Support

Health System
- Health Care Organization
- Delivery System Design
- Decision Support
- Clinical Information Systems

Informed, Activated Patient

Prepared, Proactive Practice Team

Improved Outcomes

1 Bodenheimer, Wagner, Grumbach. JAMA 2002;288:1775-9
Proactive Care of Older Adult Populations

Risk Assessment

- Low Risk
  - Usual Care
- Medium Risk
  - Chronic Disease Care
- High Risk
  - Geriatric Care
- Dying
  - Palliat./Hospice
Geriatric Care

- Multidimensional functional assessment
  - Medical/Physical
  - Cognitive
  - Social/Financial
  - Environmental
- Use of assessment instruments
- Multiple chronic disease model
- Team care planning and implementation
- Care coordination
Proactive Care of Older Adult Populations

Risk Assessment

- Low Risk
  - Usual Care
- Medium Risk
  - Chronic Disease Care
- High Risk
  - Geriatric Care
- Dying
  - Palliat./Hospice
Palliative and Hospice Care
Medicare Population Expenditures

- Medicare Costs
  - 90%: 30%
  - 10%: 70%

Beneficiary Frequency
A Population of Adults Aged 65+

- Healthy
- Chronic Illness
- Frail
- Dying
HC Costs of Adults Aged 65+

Healthy

Dying

Chronic Illness

Frail
HC Costs of Adults Aged 65+

Population Frequency

Medicare Expenses
Appendix B

Commissioned Papers

Health Workforce and Future Technologies
Author: The Health Technology Center (HealthTech)

How Will the U.S. Health Care System Meet the Challenge of the Ethnogeriatric Imperative?
Author: Gwen Yeo, Ph.D., with assistance from Wendy King, Stanford University School of Medicine

Paraprofessional Health Care Workforce for an Aging Population
Author: R. Tamara Konetzka, Ph.D., University of Chicago

State Profiles of the U.S. Health Care Workforce
Author: Mark Mather, Ph.D., Population Reference Bureau

Successful Models of Comprehensive Health Care for Multi-Morbid Older Persons: A Review of Effects on Health and Health Care
Authors: Chad Boul, M.D., M.P.H., M.B.A., Johns Hopkins Bloomberg School of Public Health
Ariel Green, M.P.H., Johns Hopkins University School of Medicine
Lisa B. Boul, M.D., M.P.H., M.A., Johns Hopkins University School of Medicine
James T. Pacala, M.D., M.S.P.H., University of Minnesota Medical School
Claire Snyder, Ph.D., Johns Hopkins University School of Medicine
Bruce Leff, M.D., Johns Hopkins University School of Medicine
Review of Geriatric Care Models

IOM Report, 2008\textsuperscript{1,2}

- Review of 128 studies, mostly RCTs
- 15 categories of intervention
- Evaluated for outcomes of quality of care, quality of life, function, satisfaction, mortality, and use/cost of health services

\textsuperscript{1} Boult et al. Successful models of comprehensive care for multi-morbid older persons: a review of effects on health and health care. In: Retooling for An Aging America. Institute of Medicine, 2008

\textsuperscript{2} Boult et al. JAGS 2009;57:2328-37
Successful Geriatric Care Models

- Program of All-Inclusive Care for the Elderly (PACE)
- Geriatric Evaluation and Management (GEM)
- EverCare
- Care Transitions Model
- Geriatric Resources for Assessment in Care of Elders (GRACE)
Features of Successful Models

- Comprehensive primary care provided by co-located nurse-physician teams, supplemented by:
  - Periodic preventive home visits by nurses
  - Medication counseling by pharmacists
  - Ambulatory rehabilitative services
Features of Successful Models

- Comprehensive primary care provided by co-located nurse-physician teams, supplemented by:
  - Coordination and coaching through transitions between sites of care
  - Intensive care management for persons with one predominant chronic condition
  - Community-based training in self-management and informal caregiving
Features of Successful Models

- Primary care of nursing home residents led by advance practice nurses in partnership with geriatrically sophisticated physicians
- Proactive coordination of complex hospital care by interdisciplinary teams with expertise in geriatrics
Take Home Point #4

Successful Models of Geriatrics:

- proactively screen/assess patients
- stress primary care
- assess multiple functional domains
- match care to needs
- involve teams
- coordinate care/manage transitions
Successful Geriatric Models and the Patient-Centered Medical Home

**Geriatrics**
- Primary care emphasis
- Team care
- Functional assessment
- Care coordination

**Medical Home**
- Personal physician
- Physician-directed medical practice
- Whole person orientation
- Care coordination
H.R. 3590

One Hundred Eleventh Congress of the United States of America

AT THE SECOND SESSION

Begun and held at the City of Washington on Tuesday, the fifth day of January, two thousand and ten

An Act

Entitled The Patient Protection and Affordable Care Act.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the “Patient Protection and Affordable Care Act”.

(b) TABLE OF CONTENTS.—The table of contents of this Act is as follows:
TITLE III—IMPROVING THE QUALITY AND EFFICIENCY OF HEALTH CARE
Subtitle A—Transforming the Health Care Delivery System

PART I—LINKING PAYMENT TO QUALITY OUTCOMES UNDER THE MEDICARE PROGRAM

Sec. 3001. Hospital Value-Based purchasing program.
Sec. 3002. Improvements to the physician quality reporting system.
Sec. 3003. Improvements to the physician feedback program.
Sec. 3004. Quality reporting for long-term care hospitals, inpatient rehabilitation hospitals, and hospice programs.
Sec. 3005. Quality reporting for PPS-exempt cancer hospitals.
Sec. 3006. Plans for a Value-Based purchasing program for skilled nursing facilities and home health agencies.
Sec. 3007. Value-based payment modifier under the physician fee schedule.
Sec. 3008. Payment adjustment for conditions acquired in hospitals.

PART II—NATIONAL STRATEGY TO IMPROVE HEALTH CARE QUALITY

Sec. 3011. National strategy.
Sec. 3012. Interagency Working Group on Health Care Quality.
Sec. 3013. Quality measure development.
Sec. 3014. Quality measurement.
Sec. 3015. Data collection; public reporting.

PART III—ENCOURAGING DEVELOPMENT OF NEW PATIENT CARE MODELS

Sec. 3021. Establishment of Center for Medicare and Medicaid Innovation within CMS.
Sec. 3022. Medicare shared savings program.
Sec. 3023. National pilot program on payment bundling.
Sec. 3024. Independence at home demonstration program.
Sec. 3025. Hospital readmissions reduction program.
PART III—ENCOURAGING DEVELOPMENT OF NEW PATIENT CARE MODELS

SEC. 3021. ESTABLISHMENT OF CENTER FOR MEDICARE AND MEDICAID INNOVATION WITHIN CMS.

(a) IN GENERAL.—Title XI of the Social Security Act is amended by inserting after section 1115 the following new section:

“CENTER FOR MEDICARE AND MEDICAID INNOVATION

“SEC. 1115A. (a) CENTER FOR MEDICARE AND MEDICAID INNOVATION ESTABLISHED.—

“(1) IN GENERAL.—There is created within the Centers for Medicare & Medicaid Services a Center for Medicare and Medicaid Innovation (in this section referred to as the ‘CMI’) to carry out the duties described in this section. The purpose of the CMI is to test innovative payment and service delivery models to reduce program expenditures under the applicable titles while preserving or enhancing the quality of care furnished to individuals under such titles. In selecting such models, the Secretary shall give preference to models that also improve the coordination, quality, and efficiency of health care services furnished to applicable individuals defined in paragraph (4)(A).
“(b) TESTING OF MODELS (PHASE I).—

“(1) IN GENERAL.—The CMI shall test payment and service delivery models in accordance with selection criteria under paragraph (2) to determine the effect of applying such models under the applicable title (as defined in subsection (a)(4)(B)) on program expenditures under such titles and the quality of care received by individuals receiving benefits under such title.

“(2) SELECTION OF MODELS TO BE TESTED.—

“(A) IN GENERAL.—The Secretary shall select models to be tested from models where the Secretary determines that there is evidence that the model addresses a defined population for which there are deficits in care leading to poor clinical outcomes or potentially avoidable expenditures. The models selected under the preceding sentence may include the models described in subparagraph (B).

“(B) OPPORTUNITIES.—The models described in this subparagraph are the following models:

“(i) Promoting broad payment and practice reform in primary care, including patient-centered medical home models for high-need applicable individuals, medical homes that address women’s unique health care needs, and models that transition primary care practices away from fee-for-service based reimbursement and toward comprehensive payment or salary-based payment.

“(ii) Contracting directly with groups of providers of services and suppliers to promote innovative care delivery models, such as through risk-based comprehensive payment or salary-based payment.

“(iii) Utilizing geriatric assessments and comprehensive care plans to coordinate the care (including through interdisciplinary teams) of applicable individuals with multiple chronic conditions and at least one of the following:

“(I) An inability to perform 2 or more activities of daily living.

“(II) Cognitive impairment, including dementia.

“(iv) Promoting care coordination between providers of services and suppliers that transition health care providers away from fee-for-service based reimbursement and toward salary-based payment.

“(v) Supporting care coordination for chronically-ill applicable individuals at high risk of hospitalization through a health information technology-enabled provider network that includes care coordinators, a chronic disease registry, and home tele-health technology.

“(vi) Varying payment to physicians who order advanced diagnostic imaging services (as defined in section 1834(e)(1)(B)) according to the physician’s adherence to appropriateness criteria for the ordering of such services, as determined in consultation with physician specialty groups and other relevant stakeholders.
“(vii) Utilizing medication therapy management services, such as those described in section 935 of the Public Health Service Act.

“(viii) Establishing community-based health teams to support small-practice medical homes by assisting the primary care practitioner in chronic care management, including patient self-management activities.

“(ix) Assisting applicable individuals in making informed health care choices by paying providers of services and suppliers for using patient decision-support tools, including tools that meet the standards developed and identified under section 936(e)(2)(A) of the Public Health Service Act, that improve applicable individual and caregiver understanding of medical treatment options.

“(x) Allowing States to test and evaluate fully integrating care for dual eligible individuals in the State, including the management and oversight of all funds under the applicable titles with respect to such individuals.

“(xi) Allowing States to test and evaluate systems of all-payer payment reform for the medical care of residents of the State, including dual eligible individuals.

“(xii) Aligning nationally recognized, evidence-based guidelines of cancer care with payment incentives under title XVIII in the areas of treatment planning and follow-up care planning for applicable individuals described in clause (i) or (iii) of subsection (a)(4)(A) with cancer, including the identification of gaps in applicable quality measures.

“(xiii) Improving post-acute care through continuing care hospitals that offer inpatient rehabilitation, long-term care hospitals, and home health or skilled nursing care during an inpatient stay and the 30 days immediately following discharge.

“(xiv) Funding home health providers who offer chronic care management services to applicable individuals in cooperation with interdisciplinary teams.

“(xv) Promoting improved quality and reduced cost by developing a collaborative of high-quality, low-cost health care institutions that is responsible for—

“(I) developing, documenting, and disseminating best practices and proven care methods;

“(II) implementing such best practices and proven care methods within such institutions to demonstrate further improvements in quality and efficiency; and

“(III) providing assistance to other health care institutions on how best to employ such best practices and proven care methods to improve health care quality and lower costs.

“(xvi) Facilitate inpatient care, including intensive care, of hospitalized applicable individuals at their local hospital through the use of electronic monitoring by specialists, including intensivists and critical care specialists, based at integrated health systems.
Take Home Point #5

Every discovery counts.
Thank You