Managing Chronic Conditions to Achieve Positive Health Outcomes

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Objective:
1. Describe the impact of multiple chronic conditions on individual patients and on the health care system.

2. Discuss the contributions of the interdisciplinary health care team members in the management of chronic disease.

Overview
- Clinical aspects of living with multiple chronic conditions
- Prevalence of living with multiple chronic conditions
- Research and health care

“Treating an Illness Is One Thing. What About a Patient With Many?”

New York Times, March 31, 2009
Image: Brendan Smialowski for the New York Times
It’s Not Easy Living with Multimorbidity

<table>
<thead>
<tr>
<th>Time</th>
<th>Medications</th>
<th>Non-pharmacologic Therapy</th>
<th>All Day</th>
<th>Periodic</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 AM</td>
<td>Ipratropium MDI</td>
<td>Check feet</td>
<td>All Day: Alendronate 70mg weekly; Check feet 5 AM upright 30 min, Check blood sugar</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Alendronate 70mg weekly</td>
<td>Periodic: Ipratropium MDI, Albuterol MDI, prn, Ipratropium plus budesonide, Combination metered-dose inhalers for COPD</td>
<td></td>
<td>Pneumonia vaccine, Yearly influenza vaccine</td>
</tr>
<tr>
<td></td>
<td>7 AM Ipratropium MDI</td>
<td>Joint protection</td>
<td></td>
<td>All provider visits: Evaluate Self-monitoring blood glucose, foot exam and BP</td>
</tr>
<tr>
<td>8 AM</td>
<td>Alendronate 70mg weekly</td>
<td>Energy conservation</td>
<td></td>
<td>Quarterly HbA1c, biannual LFTs</td>
</tr>
<tr>
<td></td>
<td>Lisinopril 40mg</td>
<td>Exercise (non-weight bearing if severe foot disease, weight bearing for osteoporosis)</td>
<td></td>
<td>Yearly creatinine, electrolytes, microalbuminuria, cholesterol</td>
</tr>
<tr>
<td></td>
<td>HCTZ 12.5 mg, Glyburide 40mg, Calcium + Vit D 500mg</td>
<td>Muscle strengthening exercises, Aerobic Exercise ROM exercises</td>
<td></td>
<td>Referrals: Pulmonary rehabilitation, Physical Therapy</td>
</tr>
<tr>
<td>12 PM</td>
<td>Ipratropium MDI</td>
<td>Avoid environmental exposures that might exacerbate COPD</td>
<td></td>
<td>Yearly eye exam</td>
</tr>
<tr>
<td></td>
<td>Calcium + Vit D 500mg</td>
<td>Wear appropriate footwear</td>
<td></td>
<td>Medical nutrition therapy</td>
</tr>
<tr>
<td>5 PM</td>
<td>Ipratropium MDI</td>
<td>Abuterol MDI pm</td>
<td></td>
<td>Patient Education; High-risk foot conditions, foot care, foot wear</td>
</tr>
<tr>
<td></td>
<td>Calcium 500mg</td>
<td>Limit Alcohol</td>
<td></td>
<td>Osteoarthritis, COPD medication and delivery system training</td>
</tr>
<tr>
<td></td>
<td>Lovastatin 40mg</td>
<td>Maintain normal body weight</td>
<td></td>
<td>Diabetes Mellitus</td>
</tr>
</tbody>
</table>

Care Maps

BMJ Aug 2009 May C et al.

http://durgastoolbox.com/2012/08/18/durga-tool-9-my-care-map-or-the-picture-that-tells-a-thousand-words/
How do older adults manage their health?
National Health and Aging Trend Survey

- 69.4% Self-Manage
- 19.6% Co-Manage
- 11% Delegate

Wolff JL and Boyd CM JGIM 2015. DOI: 10.1007/s11606-015-3359-6

Defining Treatment Burden in Chronic Disease

Treatment burden: aggregate weight of all the actions and resources patients and caregivers devote to health care, including effort, time, and out-of-pocket costs spent on health care management tasks such as taking medications, adhering to dietary recommendations, self-monitoring and management, exercising, or visiting health care providers.

A manifestation of how complex health status is experienced by patients (and caregivers)
- aggregate influence of the morbidity of diseases in combination with care
- will vary based on patient factors

How much treatment burden?
National Health and Aging Trend Survey

<table>
<thead>
<tr>
<th>Experience of Treatment Burden</th>
<th>Total</th>
<th>Self-Manage</th>
<th>Co-Manage</th>
<th>Delegate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hard for you</td>
<td>24%</td>
<td>22%</td>
<td>31%</td>
<td>25%</td>
</tr>
<tr>
<td>Hard for your family/close friends</td>
<td>7%</td>
<td>0%</td>
<td>20%</td>
<td>28%</td>
</tr>
<tr>
<td>Get delayed or not get done</td>
<td>22%</td>
<td>22%</td>
<td>20%</td>
<td>23%</td>
</tr>
<tr>
<td>Asked to do too much</td>
<td>12%</td>
<td>12%</td>
<td>13%</td>
<td>13%</td>
</tr>
<tr>
<td>Treatment burden – any 1 of above</td>
<td>38%</td>
<td>34%</td>
<td>42%</td>
<td>54%</td>
</tr>
</tbody>
</table>

Wolff JL and Boyd CM JGIM 2015. DOI: 10.1007/s11606-015-3359-6
Role of Family/Friends: *Hidden in Plain Sight*

- 40% of older adults are routinely accompanied to medical visits
- Accompanied older adults are older, sicker, less educated, use more health services
- Companions are mainly family members who participate in logistics and visit communication
- Visit companion: same person over time

Wolff JL and Roter DL. *Social Science and Medicine, 72*(6) 823-31. 2011.

Opportunities

- Companions assume varied behaviors that can help or hinder communication
- Most physicians struggle to adequately build a productive patient-family-provider partnership
  - Barriers include training, time and reimbursement, concerns about patient privacy
- Best methods to incorporate family in health care for chronic conditions are not known
- Patient-centered medical home

Scholle SP. AHRQ, 2010.
Wolff JL and Roter DL. *Social Science and Medicine, 72*(6) 823-31. 2011.

Self care vs. Neurological health care

To manage her Parkinson’s disease, Sara Riggare spends 1 hour in neurological healthcare and 8,765 hours in selfcare per year.

www.riggare.se

Multiple Chronic Conditions is common

Percentage of Major Chronic Disease in Isolation Among Women Aged 65 or Older: NHANES, 1999-2004

<table>
<thead>
<tr>
<th>Disease</th>
<th>Arthritis</th>
<th>Coronary Heart Disease</th>
<th>Chronic Lower Respiratory Tract Disease</th>
<th>Diabetes</th>
<th>Stroke</th>
</tr>
</thead>
<tbody>
<tr>
<td>% with only 1 disease of 5 possible diseases</td>
<td>47%</td>
<td>17%</td>
<td>19%</td>
<td>17%</td>
<td>15%</td>
</tr>
</tbody>
</table>

Weiss CO et al. *JAMA 2007;298*:1160-1162
Prevalence of multimorbidity as a function of age, stratifying on socioeconomic status

On socioeconomic status scale, 1=most affluent and 10=most deprived. From Barnett et al, Lancet 2012, 380(9836): 37-43

Co-occurrence of mental and physical conditions

On socioeconomic status scale, 1=most affluent and 10=most deprived. From Barnett et al, Lancet 2012, 380(9836): 37-43

Living with MCCs

- Patients with multiple chronic conditions (MCCs) represent a growing segment of the population, and currently include over one quarter of the U.S. population
- The presence of MCCs negatively affects quality of life, functional status, ability to get a job and work, and life expectancy
- Individuals with MCCs receive care that is fragmented, incomplete, inefficient, and ineffective
- MCCs are associated with higher healthcare costs and utilization rates

(Chronic Conditions among Medicare Beneficiaries, CMS Chartbook 2012)

Health Care Expenditures for Adults With Multiple Treated Chronic Conditions:
Estimates From the Medical Expenditure Panel Survey

On socioeconomic status scale, 1=most affluent and 10=most deprived. From Barnett et al, Lancet 2012, 380(9836): 37-43
Most of Costliest 5% have Functional Limitations

Prevalence of Comorbidities in Adults with Coronary Heart Disease Aged ≥ 45 in NHANES, 1999-2004

Framework for Considering Comorbid Conditions

Clinically dominant comorbid conditions:
- so complex or serious that they eclipse the management of other health problems
  - end-stage, severely symptomatic, recently diagnosed

Concordant conditions:
- represent parts of the same overall pathophysiologic risk profile and are more likely to be the focus of the same disease management plan (may include ‘complicating’)

Discordant conditions:
- not directly related in either their pathogenesis or management and do not share an underlying predisposing factor

Piette JD and Kerr EA Diabetes Care 29:725-731, 2006

Conceptual Framework

Boyd, CM, Fortin M. Public Health Reviews, 2011.
Overarching Goals
1. Foster health care and public health system changes
2. Maximize the use of proven self-care management and other services
3. Provide better tools and information to health care, public health, and social services workers
4. Facilitate research to fill knowledge gaps

Goal 4: Facilitate research to fill knowledge gaps

Objectives
A. Increase the external validity of trials
B. Understand the epidemiology of MCC
C. Increase clinical, community, and patient-centered health research
D. Address disparities in MCC populations

HHS Multiple Chronic Conditions Strategic Framework, 2010

What Do Clinicians Need to Best Care for the People with Multimorbidity?

• Maximize use of therapies likely to benefit patients with multimorbidity
• Minimize use of therapies unlikely to benefit or likely to harm patients with multimorbidity
• Incorporate patient preferences and values regarding burdens, risks, and benefits

How Applicable are Clinical Practice Guidelines (CPGs) for People with Multimorbidity?

• Reviewed 9 CPGs for chronic conditions
• Most single disease CPGs fail to give adequate guidance for older patients with multimorbidity

<table>
<thead>
<tr>
<th>Issue</th>
<th>Is Criteria Addressed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attention</td>
<td>Limited</td>
</tr>
<tr>
<td>Quality of evidence</td>
<td>Limited</td>
</tr>
<tr>
<td>Specific recommendations</td>
<td>Most address treatment of index disease in presence of single other conditions</td>
</tr>
<tr>
<td>Time needed to treat</td>
<td>Limited</td>
</tr>
<tr>
<td>Quality of life</td>
<td>Limited</td>
</tr>
<tr>
<td>Trade-offs in goals of therapy</td>
<td>Not at all</td>
</tr>
<tr>
<td>Patient preference</td>
<td>Limited</td>
</tr>
<tr>
<td>Burden</td>
<td>Limited</td>
</tr>
</tbody>
</table>

Boyd CM May 2013

Boyd et al. JAMA 2005;294:716-724
Development of a Preliminary Framework for Guidelines That Are More Applicable to People with Multiple Chronic Conditions

Three Domains:
- **Stakeholders:** e.g., guideline developers, methodologists, clinicians, multimorbidity, government
- **Ultimate Goal:** Prioritization within, and across, diseases for what is most likely to benefit an individual patient
  
  AHRQ, NIA

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Personalized Decisions

- **Do Screen**
  - Likelihood of Benefit
  - Patient Preferences
    - (moveable fulcrum)

- **Don’t Screen**
  - Likelihood of Harm

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Multiple Chronic Conditions in Context

Moving from “What is the matter?” to “What Matters to You?”

*Key contextual factors:* public policy, community, health care systems, family, and person, to sub-personal cellular and molecular levels (where most medical knowledge currently is generated)

*New knowledge needed* involves moving from a predominant disease focus toward a person-driven, goal-directed research agenda

NIH/PCORI Meeting on Multiple Chronic Conditions in Context, Feb. 2013

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Approach to the Evaluation and Management of Older Adults with Multimorbidity: Guiding Principles

- Patient Preferences
- Interpreting the Evidence
- Prognosis
- Treatment Complexity and Feasibility
- Optimizing Therapies and Care Plans

http://www.americangeriatrics.org/health_care_professionals/clinical_practice/multimorbidity
American Geriatrics Society’s Guiding Principles for the Care of Older Adults with Multimorbidity

1. Elicit and incorporate patient preferences into medical decision-making for older adults with multimorbidity.

2. Recognizing the limitations of the evidence base, interpret and apply the medical literature specifically to older adults with multimorbidity.

3. Frame clinical management decisions within the context of risks, burdens, benefits, and prognosis (e.g., remaining life expectancy, functional status, quality of life) for older adults with multimorbidity.

4. Consider treatment complexity and feasibility when making clinical management decisions for older adults with multimorbidity.

5. Use strategies for choosing therapies that optimize benefit, minimize harm, and enhance quality of life for older adults with multimorbidity.


Need for Effective, Interdisciplinary Team

- Implementing the guiding principles requires an effective healthcare team:
  - interdisciplinary clinicians;
  - family, friends, paid caregivers across sites of care, including the home;
  - adequate training;
  - reimbursement structures that reward patient-centered medical care;
  - evidence base relevant to people with multimorbidity

Walter Altman

79 year old widower
Retired teacher, lives alone
Income: small pension
Daughter lives 10 miles away, has three teenagers
Five chronic conditions
Eight medications

In the past year, Walter has had...

- 22 scripts
- 8 meds
- 6 community referrals
- 2 home care agencies
- 5 months homecare
- 2 nursing homes
- 6 weeks sub-acute care
- 19 outpatient visits
- 3 hospital admissions
Interdisciplinary Teams

- What do patients and families want?
  - e.g., function, mobility, quality of life, comfort, safety, less burden

Guided Care: Comprehensive Care for Persons with Chronic Conditions

Specially trained RNs based in primary physicians’ offices

GCNs collaborate with 3-4 physicians in caring for 50-60 high-risk older patients with chronic conditions and complex health care needs

Nurse/physician team

Assesses needs and preferences

Creates an evidence-based “care guide” and a patient-friendly “action plan”

Monitors the patient proactively

Supports chronic disease self-management

Smoother transitions between care sites

Communicates with providers in EDs, hospitals, specialty clinics, rehab facilities, home care agencies, hospice programs, and social service agencies in the community

Educates and supports caregivers

Facilitates access to community services

Boyd C et al. Gerontologist, 2007

Intensive Primary Care Programs

PACE (Program of All-Inclusive Care for the Elderly):
- Uses a free-standing clinic approach
- Team of interdisciplinary staff: primary care physicians, nurse practitioners, onsite and home health nurses, social workers, pharmacists, occupational/physical therapists, dietitians, health workers, recreation therapists, and transportation workers
- Statistically significantly reduced two-year hospital use

GRACE (Geriatric Resources for Assessment and Care of Elders):
- Statistically significantly reduced ER visits
- Team: an advanced practice nurse and social worker who collaborate with the primary care physician and interdisciplinary team
- Develop and implement individualized care plans

Evidence Brief: Effectiveness of Intensive Primary Care Programs. Peterson K et al. VA Evidence-based Synthesis Program Evidence Briefs [Internet]. Washington (DC): Department of Veterans Affairs (US); 2011-2013 Feb.
Principles of Interdisciplinary Team-Based Health Care

- Shared goals
- Clear roles
- Mutual trust
- Effective communication
- Measurable processes and outcomes

https://www.nationalahec.org/pdfs/VSRT-Team-Based-Care-Principles-Values.pdf

“A driving force behind health care practitioners’ transition from being soloists to members of an orchestra is the complexity of modern health care, which is evolving at a breakneck pace.”

Summary

- Optimal care for people with multimorbidity
- Considering Evidence
- Thinking beyond individual diseases
- Incorporating the view and context of the patient (and family)
- Building effective interdisciplinary teams

Boyd CM, May 2013
Thanks to Funders

- Paul Beeson Career Development Award Program (National Institute on Aging 1K23AG032910, AFAR, The John A. Hartford Foundation, The Atlantic Philanthropies, The Starr Foundation and an anonymous donor)
- AHRQ R21 “Improving Clinical Practice Guidelines for Complex Patients” HS018597-01

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