Where will the puck be- the future of geriatric medicine

Meeting the Challenges of Safe Transportation in an Aging Society Symposium
September 14, 2016

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"I skate to where the puck is going to be, not where it has been."
-- Wayne Gretzky
The *Silver Tsunami*: Percentage of older adults (65+) by country, 2000 and 2050
Michigan

- **Size:** 23rd largest state
- **Population:** 9th largest state
- **Age:** 10th ‘oldest’ state
- 70-154% increase in minority elders between 2000-10 in southeastern counties
- In 2040, 23% of population will be 65+ years
Age as a healthcare utilization driver

Individuals Without Regular Healthcare Provider

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-44</td>
<td>23.7%</td>
</tr>
<tr>
<td>45-64</td>
<td>11.9%</td>
</tr>
<tr>
<td>65+</td>
<td>3.3%</td>
</tr>
</tbody>
</table>

Source: Centers for Disease Control and Prevention (CDC) Summary Health Statistics for U.S. Adults: National Health Interview Survey, 2012
Age as a healthcare utilization driver

Source: Centers for Disease Control and Prevention (CDC)
In 2011, Medicare per capita spending peaked at age 83 for physician and outpatient services, but at older ages for inpatient care (89), home health (96), skilled nursing facility (98), and hospice (104).

*Peaks in Medicare per capita spending by type of service for traditional Medicare beneficiaries over age 65, 2011*

**NOTE:** Analysis excludes beneficiaries with Medicare Advantage. *Analysis excludes people age 65 because some of these beneficiaries are enrolled for less than a full year; therefore, a full year of Medicare spending data is not available for all people at this year of age.**

**SOURCE:** Kaiser Family Foundation analysis of a 5 percent sample of Medicare claims from the Chronic Conditions Data Warehouse, 2011.
University of Michigan adult primary care clinics

“Young old” 65-74 years
“Middle-old” 75-84 years
“Old-old” Over 85 years

Average age of patients

- Family medicine 40 years
- Internal Medicine 60 years
- Geriatric Medicine 80 years

Not every older adult needs a geriatrician!
State of Geriatric Medicine Workforce in the USA in 2016

- **7,500** geriatricians currently in the U.S.
- **17,000** geriatricians are needed **now**.
- **30,000** geriatricians will be needed by 2030
The Graying of the Physician Workforce

• Physician workforce is aging…even more so than the rest of us

• 28% physician population in the US is 60 years of age or older*

* Association of American Medical Colleges (AAMC) 2013 State Physician Workforce Data Book
Geriatric Medicine – the three-legged stool

Geriatrics syndromes

- Brain
- Dementias
- Delirium
- Depression
- Elder abuse
- Falls and mobility issues
- Frailty
- GI problems
- GU problems
- Malnutrition
- Pressure ulcers/wound care
- Sarcopenia/sarcopenic obesity
- Sensory changes
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Alzheimer’s Dementia
Alzheimer’s cases expected to rise

The number of Americans with Alzheimer’s disease and other dementia is likely to grow each year as the proportion of the population over age 65 increases. The number should escalate rapidly in coming years as the baby boom generation ages.

<table>
<thead>
<tr>
<th>Americans age 65 and over with Alzheimer’s disease</th>
<th>Changes in selected causes of death, 2000-2008 U.S. cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 million</td>
<td>Alzheimer’s disease 66%</td>
</tr>
<tr>
<td>13.2 million</td>
<td>HIV -29</td>
</tr>
<tr>
<td>Projected</td>
<td>Stroke -20</td>
</tr>
<tr>
<td></td>
<td>Heart disease -13</td>
</tr>
<tr>
<td></td>
<td>Prostate cancer -8</td>
</tr>
<tr>
<td></td>
<td>Breast cancer -3</td>
</tr>
</tbody>
</table>

SOURCE: Alzheimer’s Association

AP
Geriatric Medicine – the three-legged stool

- 2016 federal budget allocated an additional $350 million for Alzheimer’s research, a 60 percent boost that will bring total funding to $936 million
- Focus on early and ‘preclinical’ disease
Geriatric Medicine – the three-legged stool

Geriatrics syndromes

Intersection with Medical Specialties
- BP goal
- HbA1C target
- End-of-life care
- Immunization
- Effects of co-morbid conditions
- Age and disease presentation
- Age and treatment complications
Geriatric Medicine – the three-legged stool

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Original Investigation

Intensive vs Standard Blood Pressure Control and Cardiovascular Disease Outcomes in Adults Aged ≥75 Years: A Randomized Clinical Trial

Jeff D. Williamson, MD, MHS; Mark A. Supiano, MD; William B. Applegate, MD, MPH; Dan R. Berlowitz, MD; Ruth C. Campbell, MD, MSPH; Glenn M. Chertow, MD; Larry J. Fine, MD; William E. Haley, MD; Amret T. Hawfield, MD; Joachim H. Ix, MD, MAS; Dalane W. Kitzman, MD; John B. Kostis, MD; Marie A. Krousel-Wood, MD; Lenore J. Launer, PhD; Suzanne Oparil, MD; Carlos J. Rodriguez, MD, MPH; Christianne L. Roumie, MD, MPH; Ronald J. Shorr, MD, MS; Kaycoee M. Sink, MD, MAS; Virginia G. Wadley, PhD; Paul K. Whelton, MD; Jeffrey Whittle, MD, Nancy F. Woolard, Jackson T. Wright, Jr, MD, PhD; Nicholas M. Pajevski, PhD; for the SPRINT Research Group
Geriatric Medicine – the three-legged stool

System of care for older adults
- Medicare and Long Term Care Insurance
- Nursing homes and rehabilitation centers
- Acute Care for Elders (ACE) Units
- Geriatric Resources for Assessment and Care of Elders (GRACE)
- Program for All-inclusive Care of the elderly (PACE)
- Post-hospital and transitional care
- Care managers

Geriatrics syndromes

Intersection with Medical Specialties
Geriatric Medicine – the three-legged stool

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Goals: improve outcomes and reduce the cost of care
“The Big 3”
of the Future of Geriatric Medicine

Hyper-efficiency

Personalized Medicine

Technology-Assisted Medicine
Hyper-eﬃciency

*Increase efficiency in a high-cost healthcare system*

% GDP

18
16
14
12
10
8
6
4
2
0

OCED Health Statistics 2015

USA  Japan

Private expenditure

Public expenditure
U.S. healthcare system waste estimated between $505 to $850 billion per year

-Thomson Reuters, 2014-
Hyper-efficiency

*Increase efficiency in a high-cost healthcare system*

- Monetary incentives to drive behaviors
- Non-traditional office hours
- Outsourcing functions e.g. NPs, PA
- Technology driven care
- Consolidation/new alliances
- Care-setting-based specialists: hospitalist, SNFist
- Publically available cost data
- Reduce ‘waste’
Hyper-efficiency

- Cost reduction is balanced by pressure to measure quality/performance
  - Hospital length of stay
  - Readmission rate
  - Hospital-acquired infection/complication
  - Patient satisfaction/experience
Hyper-efficiency

- Payment system beyond ‘point-of-care’ silos (Population Health)
  - Transitional care
  - Observation vs. admittance
  - Post-acute care: subacute care facilities (SNF); home health agencies (HHAs); long-term acute-care hospitals (LTACHs); in-patient rehabilitation facilities (IRFs)
Other consequences:

– More out-patient procedures
– Sicker patients at SNFs
– Discharges to home instead of SNFs
– Reducing cost of in-patient care while increasing cost of out-of-hospital care
– Shifting cost of care from insurance companies to patients
Personalized (Precision) Medicine

- Genetically-based drivers of disease
- U.S. Precision Medicine Initiative (PMI) launched in January 2015
  - Make health data more portable
  - Ensure patients can easily access and share their own health information, including contributing it for research
  - Rigorously protect patient privacy, security and choice
  - Support new research platforms connecting researcher and participants as partners
Home-based Technology-Assisted Geriatric Medicine

- Elderly often have few transportation options
- Rural America has the highest % elderly
- Monitoring home situation, rather than relying on interactions in the artificial clinic setting
- Blood tests, telemetry, stethoscope, auroscope, spirometer, sensors (actigraphy, falls, sleep pattern, medication compliance, food intake)
- Home-based rehabilitation
- Autonomous cars
- Technology is way ahead of payment models!
Aging Research: Biggest Bang For the Buck?

- Just Like Today - average 50 year old woman lives to 81
- Cure Cancer Today
- Cure Heart Disease Today
- Cure Cancer and Heart Disease Today
- Slow Down Aging

[Cancer, Heart Disease, Stroke, Diabetes
[The amount diet restriction produces in rats; first published in 1935]

Years of Life Left at Age 50

30 40 50 60 70 80
• NIH/NIA: R24 Geroscience Network
• NIH/NIA: Intervention Testing Program
• Targeting/Taming Aging With Metformin (TAME)
• Will the U.S. Food and Drug Administration (FDA) approve ‘aging’ as an indication (similar to diseases), and therefore a target for drug intervention?

Science, September 16, 2015
Older adults are not all the same!
Older adults are not all the same!