

ARMSTRONG INSTITUTE
FOR PATIENT SAFETY AND QUALITY



JOHNS HOPKINS
BLOOMBERG SCHOOL
of PUBLIC HEALTH

Patient Safety in an Aging World

Patient Safety in Aging Society

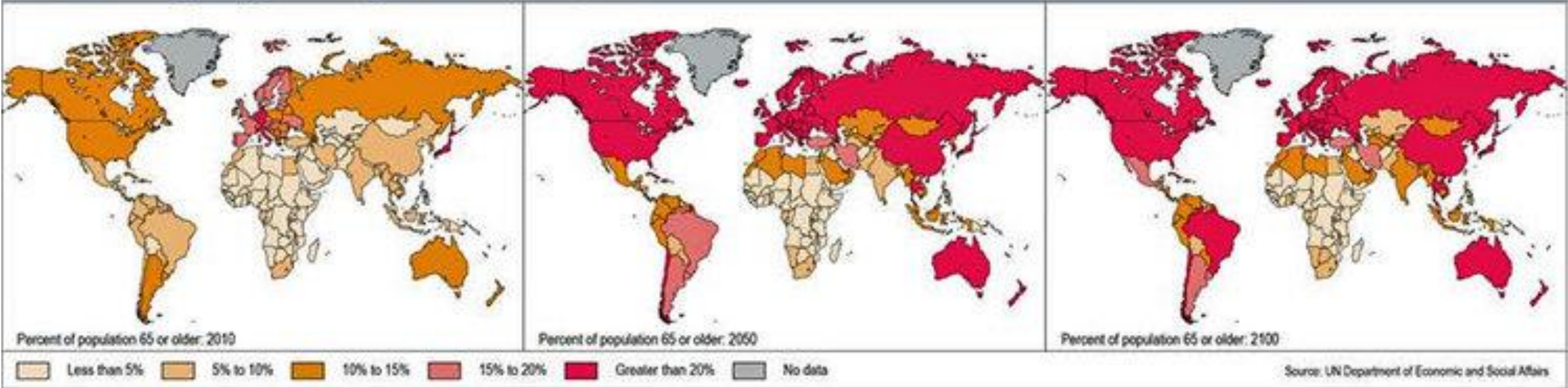
Tokyo, 13 April 2018

Albert W. Wu, MD, MPH

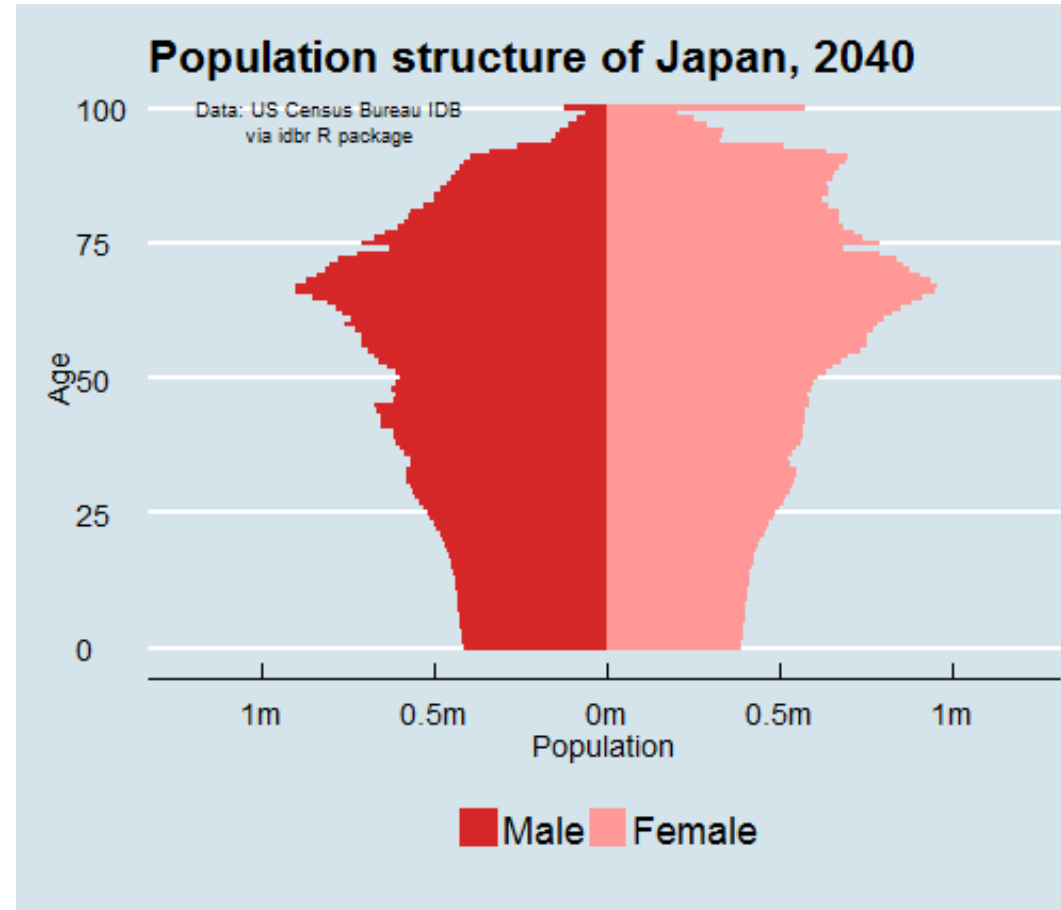
Professor, Johns Hopkins University

The World is Aging

Chart 2: Percentage of population aged 65+: 2010, 2050, 2100

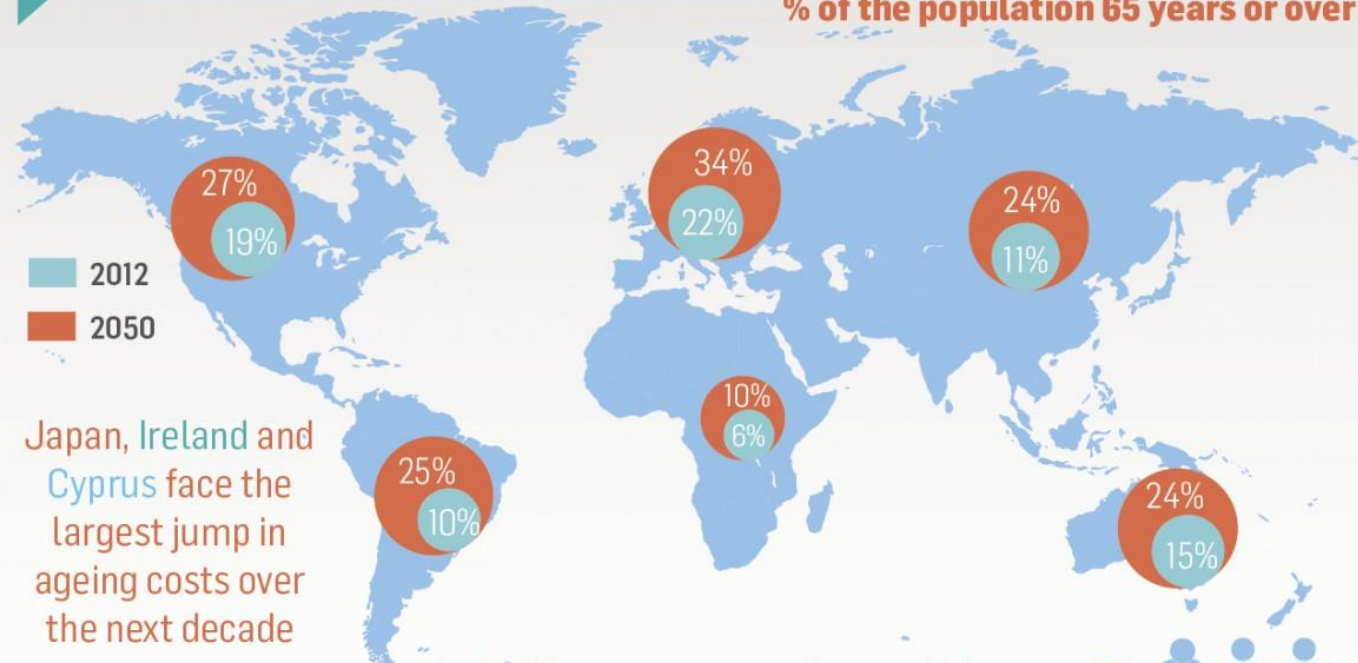


Population structure of Japan



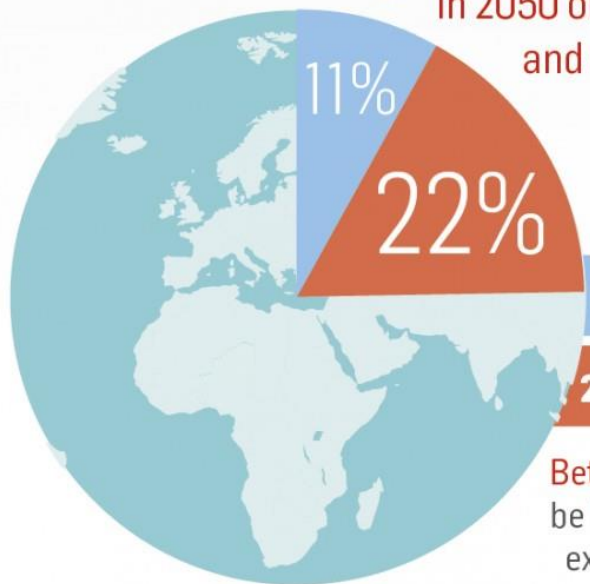
THE WORLD'S AGEING POPULATION

% of the population 65 years or over



2012
2050

Japan, Ireland and Cyprus face the largest jump in ageing costs over the next decade



In 2050 one person in three will be over 65 and one person in ten will be over 80

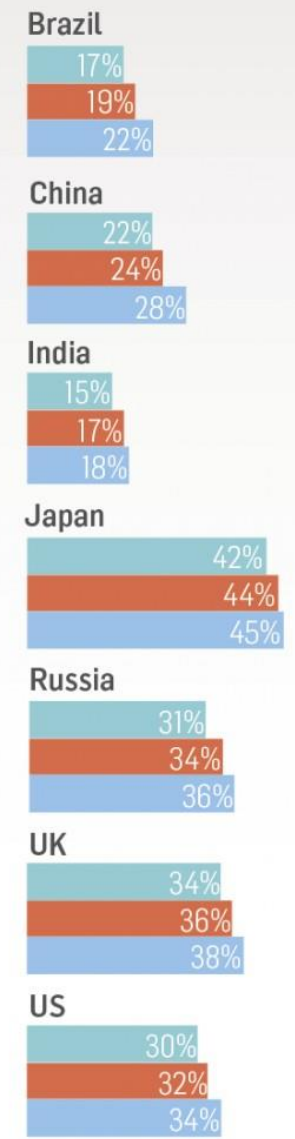


2012 - 11% of the world's 6.9bn people are over 60
2050 - 22% of the world's 9bn people will be over 60

Between now and 2050 the fiscal burden of the crisis will be 10% of the ageing-related costs. The other 90% will be extra spending on pensions, health and long-term care

% of over 50's in overall population

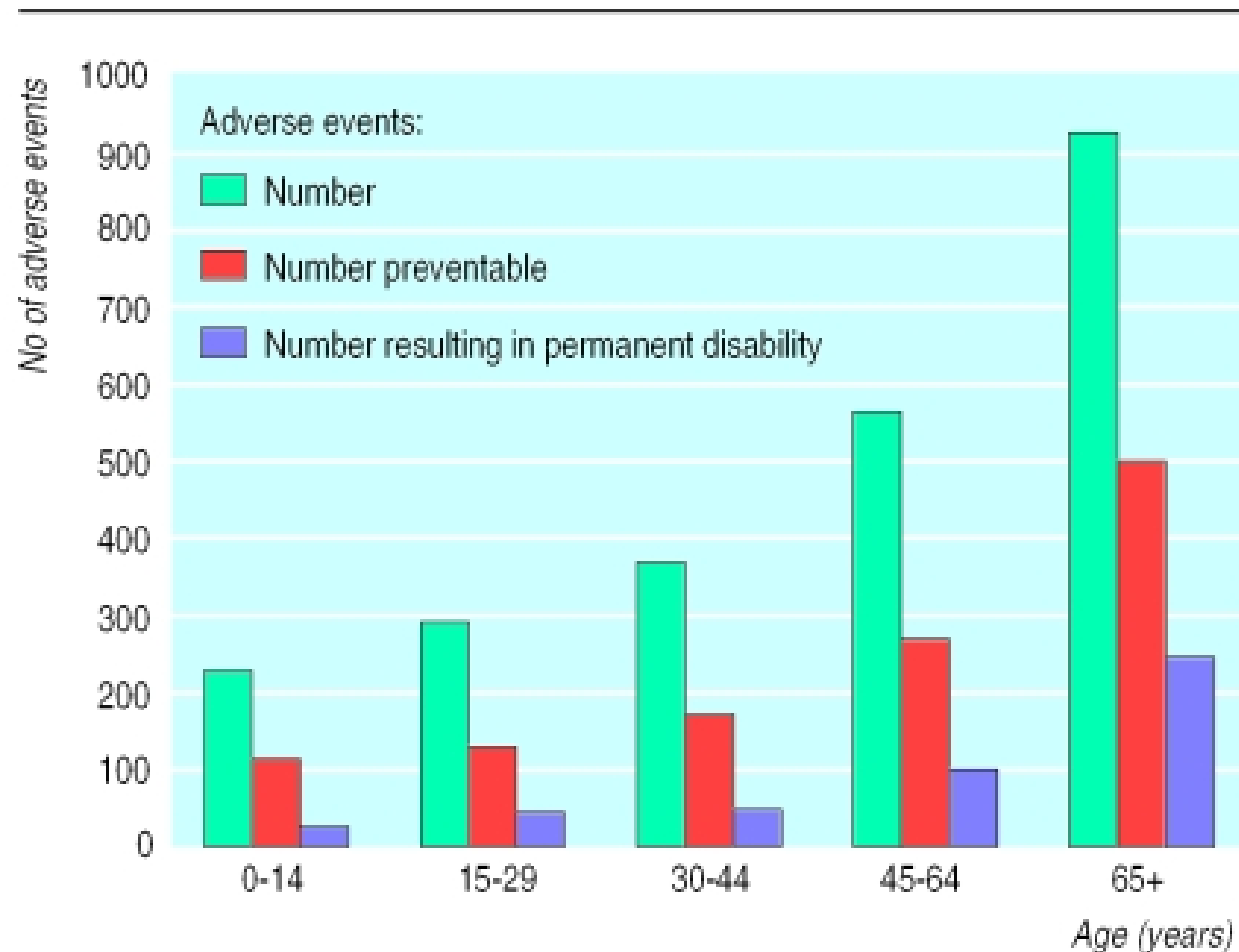
2006 2011 2016



Go Seigen 吳清源 at 100



Number of adverse events, preventable adverse events, and number resulting in permanent disability by age (Adapted from the quality in Australian healthcare study)



Epidemiology of Harm from Medical Care

- 19% of hospital patients age ≥ 65 have at least one adverse event
 - 62% of adverse events in ambulatory care
 - Higher mortality and increased expenditures (Carter 2014)
- Hospital: falls, preventable adverse drug events, procedure events (Thomas 2000, Gurwitz), Delirium, pressure ulcers
- Outpatient: overtreatment, polypharmacy, poor care coordination (Bell 2011), misdiagnosis (Obermeyer 2017)

Disability + Death due to Adverse Events

Table 2. Disability and death due to preventable adverse events among patients discharged from hospitals in Utah and Colorado in 1992 by age group*

	Patients aged 16–64 years		Patients aged ≥65 years		P value for difference in percentages
	No of events	Percentage (SE) of events	No of events	Percentage (SE) of events	
Temporary disability	4511	89.55 (2.67)	3344	80.89 (3.72)	0.053
Permanent disability	292	5.80 (2.11)	358	8.66 (2.75)	0.383
Death	234	4.65 (1.94)	432	10.44 (2.96)	0.08
All preventable adverse events	5037	100	4134	100	

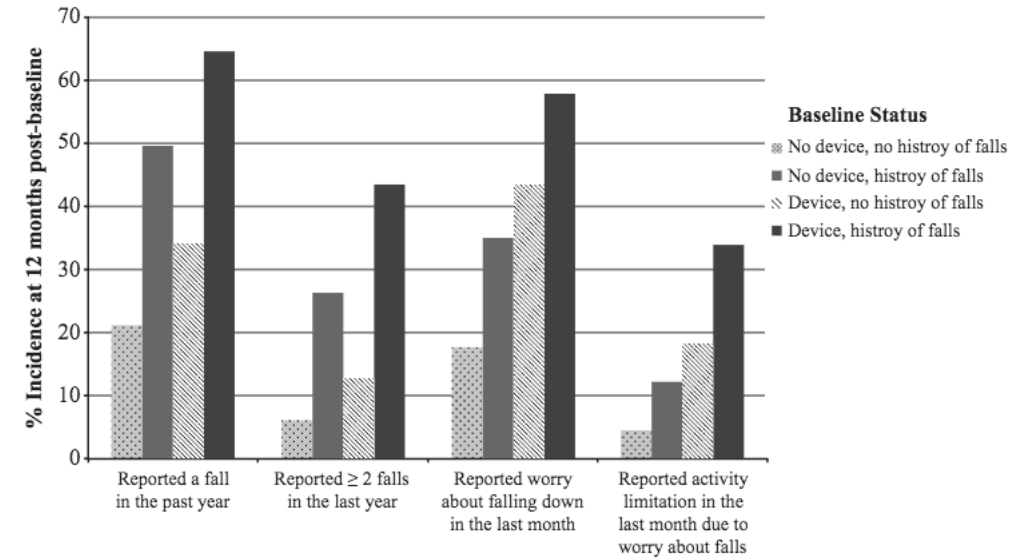
↩ * Results from random sample of 15 000 patient records extrapolated to represent all hospital discharges in Utah and Colorado in 1992.

Contributing Factors

- Decreased physiologic reserve
- Cognitive decline
- Multiple chronic conditions + medications, daily doses (McCarthy 2007)
- Inappropriate dosage (Schneitman 1996)
- Poverty
- Abuse/self-abuse
- Therapeutic imperative – patients treated more aggressive care than they would have preferred (Heyland 2013)

Falls and Worry about Falls in Older Adults

Uses Mobility Device	History of Fall	Incidence of Fall
No	No	21.1%
No	Yes	49.6%



Gell, Nancy M., et al. "Mobility device use in older adults and incidence of falls and worry about falling: Findings from the 2011–2012 National Health and Aging Trends Study." *Journal of the American Geriatrics Society* 63.5 (2015): 853-859.

Medication Associated Adverse Events

- Overall incidence of drug reactions in geriatric patients is estimated to be at least twice that in the younger population (Gupta, 2013)
- ~30% of hospital admissions in older patients from drug-related problems (Gupta, 2013)
- Systematic review of 19 studies, median rate of inappropriate medication prescriptions to older patients was 20.5% (Opondo, 2012)
- Use of unnecessary medications in older adults with limited life expectancy in 40-50% (Tjia, 2013)
- In nursing homes, 15 errors per 100 doses (Barker, 2002)

Over Use

- 14% of Medicare beneficiaries experienced at least 1 overuse event in 2008 (Segal, 2014)
- In an examination of 11 choosing wisely-identified low value services, annual prevalence of overuse ranged from 1.2% to 46.5% from 2006-2011 (Colla, 2014)
- 25-42% of Medicare beneficiaries received at least 1 low-value service in 2009 (Schwartz, 2014)

Evidence-Based Solutions: Common Elements

- Increased physical activity
- Increased social contact
- Improved design of tools, environment
- Care using well-coordinated multidisciplinary teams
- Discontinuing unnecessary treatments
- Removing known risks
- Using evidence-based guidelines
- Patient/family engagement: share information and preferences

Patient Centredness

“Providing care that is respectful of, and responsive to, individual patient preferences, needs and values, and ensuring that patient values guide all clinical decisions” (Institute of Medicine)

The doctor is the expert in the condition, the patient knows best what is important to them personally

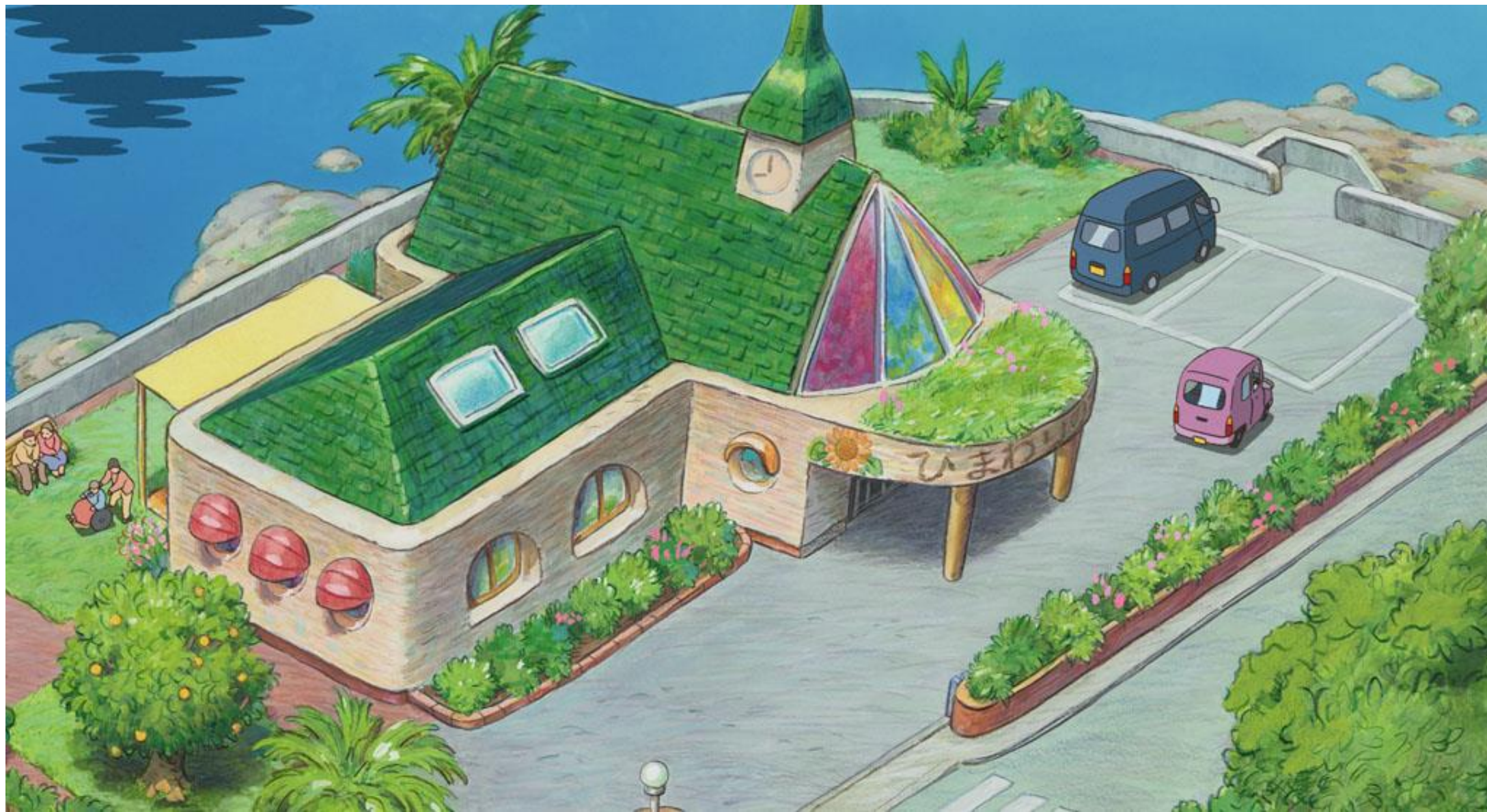


**NOTHING ABOUT ME
WITHOUT ME**

Re-Engineering Discharge (Project RED)

- Multidisciplinary effort
- 11 components for effective hospital discharge transitions including:
 - Educate patient throughout the hospitalization.
 - Organize and schedule post-discharge appointments.
 - Written discharge plan including what to do
 - Communicate with primary care physician on day of discharge
 - Discharge summary to PCP
 - Troubleshoot by telephone 2-3 days post discharge
 - Give patient discharge summary, ask to bring to next appointment

Skilled Nursing Facilities (from Ponyo)



Aging Physician Workforce

- Australian National dataset of 12,878 notifications to medical regulators (2011-2014)
- Older doctors had higher rates of notifications (91 v 66 /1000 practitioner-years)
 - Higher risk for notifications re physical or cognitive impairment, records & reports, prescribing, disruptive behavior, treatment
 - Lower risk for mental illness or substance misuse
- Incorporating knowledge of these patterns into regulatory practices, workplace adjustments and continuing education/assessment could enhance patient care

Thomas LA et al. Health, performance and conduct concerns among older doctors: A retrospective cohort study of notifications received by medical regulators in Australia. JPSRM 2018:23(2) 54-62.

Shigeaki Hinohara (1911-18 July 2017)



Summary

- The world's population is aging
- Older people use a disproportionate amount of health care and are at increased risk for adverse events such as falls, adverse drug events, and procedural complications
- In the US 1 in 5 hospital patient has at least one adverse event
- Contributing factors at multiple levels of the system include patient factors, health care factors like polypharmacy, medication errors, overly aggressive treatment, poor communication with patients and families, and lack of coordination within the healthcare team. Societal factors include poverty, isolation, and inadequate long term care.
- The most successful interventions tend to be multidisciplinary and multifactorial, aiming at different levels of the healthcare system. Design, simplification, communication and patient centeredness are key.
- The healthcare workforce is also ageing and a related issue is what are the best ways to support ageing health professionals to prolong their working life.

Juliana Koo on her 111th Birthday



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