



Rethink Aging: Preventive Health Services in Older Adults

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Conflicts of Interest

- I have no conflicts of interest relevant to this presentation.
- I am an Executive Life and Leadership Coach for healthcare leaders who are committed to improving patient care, research, education, quality improvement, and policy initiatives.

Joe's Story

- Joe is age 65. He has been married for 43 years. He has two sons (ages 38 and 35). He has worked for 30 years as an accountant for a large company in the metro area. He describes his health as excellent and plans to work until age 70.
- He has no history of medical illness or hospitalizations.

Joe's Story

- Joe has smoked one pack of cigarettes per day for approximately 40 years. He drinks one to two glasses of wine every evening. He denies use of any other medications or drugs. He goes golfing with friends two to three times per month.

Joe's Family History

- Paternal grandfather died of a stroke (age 55)
- Maternal grandfather died of lung cancer (age 65)
- Both grandmothers died of heart disease (age 80's)
- Father died of a heart attack (age 60)
- Mother (age 90) lives alone; colon cancer 15 years ago
- Brother (age 63) and sister (age 60) - good health

Aging Myth: “The Horse is out of the Barn”

- The Myth: *It's too late to do anything to prevent bad things from happening or to make things better*
- The Truth: Preventive health services matter for older people – perhaps even more than they do for those who are younger

Presentation Goals

- Understand that living longer gives unprecedented opportunities for older adults to do what matters most to them
- Know the modifiable factors that can contribute to increased life expectancy
- Recognize the differences in absolute and relative risk for cardiovascular disease, cancer, disability, and death in younger and older adults
- Learn the preventive health services that increase longevity and may enhance one's ability to carry out day to day activities
- Appreciate the outcomes that matter to older adults and how this knowledge should impact use of preventive health services

Life-Expectancy Has Increased Since 1900

Life Expectancy in the USA by Age Since 1900

Year	Life Expectancy in Years		
	From Birth	From Age 65	From Age 75
1900	?		
1950			
1980			
1990			
2000			
2010	?	?	?

Life-Expectancy Has Increased Since 1900

Life Expectancy in the USA by Age Since 1990

Year	Life Expectancy in Years		
	From Birth	From Age 65	From Age 75
1900	47.3	?	?
1950	68.2	13.9	?
1980	73.7	16.4	10.4
1990	75.4	17.2	10.9
2000	76.8	17.6	11.0
2010	78.7	19.1	12.1

Life-expectancy from birth has increased > 30 years since 1900. What explains this enhanced longevity?

Factors Impacting Longevity

- Sex
- Genetics
- Prenatal and childhood conditions
 - Marital status
 - Socioeconomic status
 - Education
- Ethnicity/Migration status

Public Health Factors Impacting Longevity

- Sanitation
 - Safe water, food, and air
- Work and motor vehicle safety

Life-Style Factors Amendable to Change

- Diet
 - Physical activity
 - Tobacco use
- Excessive alcohol use
 - Risky behaviors

Medical Advances Impacting Longevity

- Preventive Health Services
 - Antibiotics
 - Immunizations/Vaccines
- Medications for Cardiovascular & Other Chronic Diseases
 - Cancer Therapies
- Technological Diagnostic and Treatment Advances

Does Preventive Health Matter After Age 65?

Potential Deaths Prevented Per Year Among 1000 Men at Different Ages with Preventive Interventions Achieving Different Levels of Risk Reduction*

Age	Number of Expected Deaths in one Year	Level of Hypothetical Risk Reduction Achieved with Preventive Intervention		
		10%	20%	30%
45	3	0	1	1
55	8	2	2	2
65	16	2	3	5
75	36	4	7	11
85	97	10	19	29

*Estimates from life expectancy table for men from Social Security Administration, 2016. Deaths were rounded to nearest whole number.

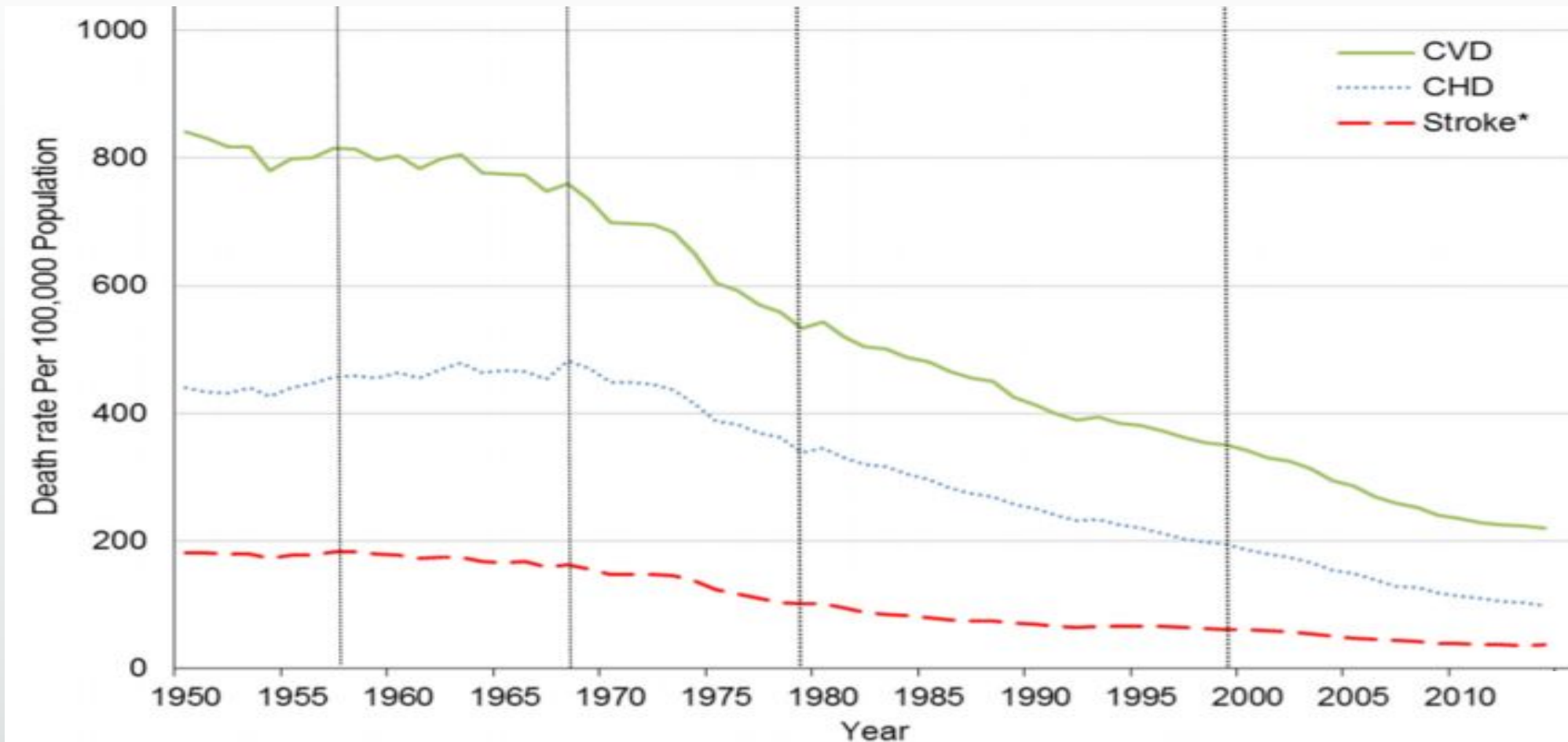
Does Preventive Health Matter After Age 65?

- Effective preventive interventions at any level of risk reduction will generally save more lives among older people than those who are younger
 - For example, a preventive intervention that reduces risk by 30% among all men, regardless of age, will prevent more deaths among older men
 - Age 45 – 1 death prevented
 - Age 55 – 2 deaths prevented
 - Age 65 - 5 deaths prevented
 - Age 75 – 11 deaths prevented
 - Age 85 – 29 deaths prevented

Does Preventive Health Matter After Age 65?

- Even if a preventive intervention is less effective in reducing risk among older people, in many cases it will save more lives than among those who are younger
 - For example, a preventive intervention that reduces risk by 30% among men age 45 will prevent one death annually
 - If the risk reduction is only 10% in older men, the number of deaths prevented remains larger since the baseline risk of death is higher:
 - Age 65 – 2 deaths prevented per year
 - Age 75 – 4 deaths prevented per year
 - Age 85 – 10 deaths prevented per year

Age-Adjusted Cardiovascular Disease Mortality Rates (1950–2014)



Source: CDC/NCHS, National Vital Statistics System, Mortality Multiple-Cause-of-Death.
These data represent underlying cause of death only.

What Explained Most of the Reduction in Cardiovascular Mortality?

- **Reductions in major, modifiable risk factors explain 79% of the years of life gained between 1980-2000**
 - Total cholesterol, blood pressure levels, smoking, and physical inactivity
- Other contributory factors
 - Initial treatments for heart attacks and unstable angina
 - Management of heart failure
 - Bypass graft surgery and angioplasty
- **Preventive health services can improve health outcomes for older adults!**

Source: Circ Res. 2017 January 20; 120(2): 366–380.

What Preventive Health Screenings Should Joe Obtain from his Primary Care Doctor?

- Blood pressure measurement
- Blood glucose level
- Height and weight/calculated body mass index
- Colorectal cancer screening
- Assessment for depression
- Assessment of alcohol use
- Lipid measurements (cholesterol & triglyceride levels)
- Fall risk assessment

What Preventive Health Counseling Should Joe Obtain from his Primary Care Doctor?

- Smoking cessation
- Safe use of alcohol and other drugs
- Healthy diet
- Regular physical activity
- Seat belts, motorcycle and bicycle helmets
- Avoid high risk sexual behavior; use condoms
- Smoke detector
- Set hot water heater < 120-130 degrees Fahrenheit
- CPR training for household
- Regular visits to dental provider
- Floss, brush with fluoride toothpaste daily
- Safe storage of firearms

What Immunizations Should Joe Obtain?

- Influenza every year
- Tetanus, diphtheria (Td) or with pertussis (Tdap) every 10 years
- Pneumococcal vaccine (age 65)
- Zoster vaccine (age 60)
- COVID19

What Preventive Medications Should Joe Use?

- Statins for adults aged 40-75 with no history of cardiovascular disease, one or more risk factor, and a 10-year risk of ≥ 10 percent
- Individualized approach age 60-69 when risk ≥ 10 percent

Joe's 10-Year Risk for Cardiovascular Disease (CVD) Events

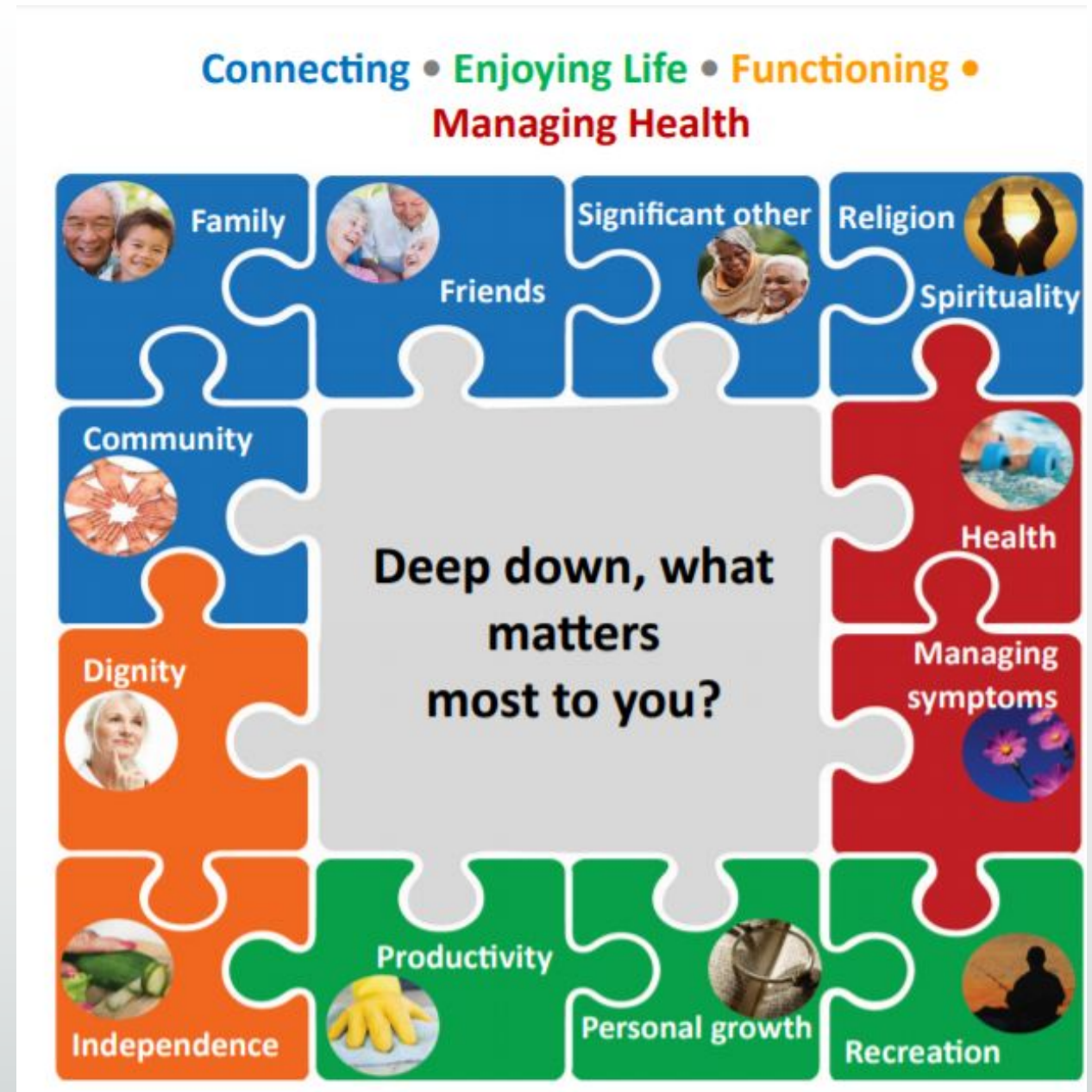
- Age (Years) – 65
- Gender – Male
- Race (African American or Other) – Other
- Total Cholesterol (mg/dL) – 188
- HDL Cholesterol (mg/dL) – 48
- Systolic blood pressure (mmHg) 133
- Diastolic blood pressure (mmHg) 69
- Treated for high blood pressure (yes or no) – No
- Diabetes (yes or no) – No
- Joe's 10-year risk for a CVD event (heart attack or stroke) is 18.2%
- Based on heart risk calculator at www.cvriskcalculator.com
- Assumes no previous heart attack or stroke

Joe's 10-Year Risk Other Possible Outcomes

- Death – 36.5% (life-time risk is 100%)
- Nursing home – 5%/year (life-time risk after age 50 is > 60%, with average stay more than 200 days)
- Hospitalization – 31.6% per year
- Needing help with Instrumental Activities of Daily Living (IADLs) – 18.8% @ age 75
 - Household chores, doing necessary business, shopping, or getting around for other purposes
- Needing help with Activities of Daily Living (ADLs) – 10.6% at age 75; 85% sometime before death
 - Personal care needs such as eating, bathing, dressing, or getting around inside his home

What Matters to Older Adults?

J Amer Geriatr Soc. 2016 Mar;64(3):625-31 and <https://patientprioritiescare.org>



What About This Scenario?

- Joe does not stop smoking
- The doctor learns that he is drinking four or more glasses of wine every night and more on the weekends
- He refuses to take a cholesterol-lowering medication
- Repeat annual blood pressure measurements go up over the next 3 years reaching 160/80
- Joe does not regularly take his blood pressure medication
- His fasting blood sugar increases to 150

What Happens to Joe?

- Stroke at age 68 with loss of use of right arm and leg and loss of ability to talk and to walk without assistance
- Nursing home admission for rehabilitation
- Joe regains some function permitting him to return home with a personal care assistant 12 hours per day
- Joe has a heart attack at age 69 and is found to have lung cancer during his hospitalization
- Hospice is called and Joe dies within one week of hospital discharge

Rethinking Joe's Outcome in the Context of Preventive Health Services

- Joe stops smoking with support from his doctor and using nicotine replacement patch
- He reduces his use of alcohol to a safe level
- He starts taking a cholesterol-lowering medication – a statin
- By avoiding excess alcohol his repeat annual blood pressure measurements and his blood glucose levels remain normal
- He gets an annual flu vaccine and other immunizations

Rethinking Joe's Outcome in the Context of Preventive Health Services

- Joe decides he will start working part-time at age 68 and fully retire at age 70 to spend more time with family and travel
- He increases his physical activity level by participating in weekly ball-room dance classes with his wife
- He starts attending church with his wife and they spend more time with grandchildren, other family members, and traveling together
- Joe experiences a heart attack at age 74, but recovers quickly and returns to his baseline level of function
- He and his family celebrate his 75th birthday together during a family vacation

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