



INTERNATIONAL LONGEVITY CENTER-USA

Robert N. Butler, MD
President and CEO
International Longevity Center

The Longevity Revolution
March 8, 2008

JEFFERSON MEDICAL COLLEGE OF
PHILADELPHIA

MAY 19, 2008





{ THE LONGEVITY REVOLUTION }

THE BENEFITS AND CHALLENGES
OF LIVING A LONG LIFE

ROBERT N. BUTLER, M.D.

WINNER OF THE PULITZER PRIZE AND
FOUNDER OF THE INTERNATIONAL LONGEVITY CENTER



WHY I WROTE THE LONGEVITY REVOLUTION

1) Status Report

After 50 years

Social-Economic, Medical, Political, Cultural Aspects

2) Address Paradox

3) Deal with: Misinformation, misunderstanding and myths.

4) Offer Solutions: Genuine Challenges

5) Agenda for Action

6) Sourcebook/Textbook/Public Education

Population Aging and Advancing Longevity Has Not Reached “Tipping Point.”



THE LONGEVITY REVOLUTION

30 Years



Advantage

↓ Disabilities

↑ Quality of Life

17% of Increase: 65+





Arno
Roh



Extending your own life expectancy is the most selfish motive imaginable for doing anything. Do it, by all means.

THE LONGEVITY REVOLUTION

Great Human Achievement

But

Grave Concerns of Some
Economists, Policy-Makers,
Politicians and Pundits



CONCERNS

- Can't Afford Old People
- Economic Stagnation
- Intergenerational Conflicts



SOME SPECIFIC CHALLENGES

- ❖ Chronic Illness (The New Longevity 65+)
- ❖ Entitlements
- ❖ Ageism



BIGGEST CHALLENGE OF ALL

Denial

Getting Attention of:

Policy-Makers and Politicians

Public

Baby Boomers

The “Tipping Point”



SELECTED TOPICS

COVERED



DISORDERS OF LONGEVITY

Barker's Hypothesis

Lifespan Perspective

Diseases of Old Age Begin Early

Genes

Environment



DISORDERS OF LONGEVITY

- ❖ Fetal, Infant, and Childhood Origins—Genetic, Environmental, and Behavioral (such as low birth weight)
- ❖ Polygenic Disorders, such as coronary heart disease.
- ❖ Medicated and Surgical Survival and Success of Neonatology
- ❖ Lifelong Exposure to Environmental and Behavioral Factors
- ❖ Poor Lifestyle and “Wear and Tear”



DISORDERS OF LONGEVITY

- ❖ Accumulation of Deleterious Genetic Components Through Natural Selection
- ❖ Gompertz/Aging as Risk Factor/Declining “Defense” and “Repair” Mechanisms
- ❖ Prions (misfolded proteins) incubate for long periods of time.
- ❖ Conversion of some acute diseases to chronic diseases, (such as AIDS and some cancers)
- ❖ Late-Life Adverse Events, such as pneumonia.



EXAMPLES

Osteoporosis

Atherosclerosis



SUICIDE RATES PER 100,000 BY AGE 2002, UNITED STATES

Older People (Ages 65+)	15.6 per 100,000 persons
Young People (Ages 15-24)	9.9 per 100,000 persons
All Ages	11 per 100,000 persons

Source: Office of Statistics and Programming, National Center for Injury Prevention and Control, Centers for Disease Control and Prevention (CDC) Data Source: NCHS Vital Statistics System for Number of Deaths, Bureau of Census for Population Estimates. 2005. Suicide Injury Deaths and Rates per 100,000. Atlanta: Centers for Disease Control and Prevention.



LACK OF PUBLIC KNOWLEDGE ABOUT SOCIAL SECURITY

THE RESULTS:

- Only half of all adults know that Social Security guarantees payment for life.
- Only a quarter of adults know that Social Security guarantees protection against inflation.
- Only about half of all adults know that Social Security provides life and disability coverage for spouses or children of workers who die or are disabled.
- Only about one adult in every six know that Social Security has lower administrative costs than private pension and retirement plans.
- Almost half of adults do not know that Social Security has never failed to pay benefits.

Source: Harris Poll with International Longevity Center (2005)



SOCIAL SECURITY

Ceiling on Wage Base

97,000 → 150,000

↓ 60% Social Security Shortfall



PRODUCTIVE ENGAGEMENT

Live Longer



Work Longer



LIVING LONGER, WORKING LONGER

RETIRING BABY BOOMERS

GEPHARDT AND STOCKMAN

PILOTS – STERNS



IMPACT OF RETIREMENT OF THE BABY BOOMERS

- About 50% of 1.6 million federal workers are eligible to retire by 2008.
- Nuclear power industry expects 28% of 58,000 workers to retire within 5 years; another 18% of young employees leave.
- By 2010, more than 40% of RNs will be over age 50; 50% of nurses will retire within 15 years.
- Record low number of students in petroleum engineering programs even as 60% of employees retire by 2010.
- Retirement of executive and managerial talent.

Source: David W. DeLong
Lost Knowledge, 2004



HEALTHCARE

THE BIG ISSUE



INADEQUATE ATTENTION

Structural Reform

Trained Workforce

Health Promotion and Disease Prevention

Research and Development



HEALTH CARE EXPENDITURES PER CAPITA IN SELECTED COUNTRIES, 2002

USA	\$5,267*
Canada	\$2,931
Germany	\$2,817
U.K.	\$2,161

* The U.S has the highest expenditures but the lowest life expectancy and highest infant mortality compared with these 3 countries.



THE QUALITY OF MEDICAL SERVICES VARIES WIDELY

- 3% of hospital patients hurt by medical error.
- 1 in 300 patients die from such mistakes
- 90,000 people die from such mistakes.
- 180,000 elderly outpatients die or harmed by drug toxicity.
- 7,000 patients die annually from drug errors each year.
- 554 errors in four months were found at one six-bed intensive care unit – 147 were potentially serious or life-threatening.



THE QUALITY OF MEDICAL SERVICES VARIES WIDELY

- 55% of recommended care actually gets administered.
- \$2,000 annual cost to employers per insured worker, due to poor quality care.

Compiled by *Forbes* magazine, Sources Lucian Leape, *New England Journal of Medicine*, CDC; *Forbes*, *Journal of the American Medical Association*, Institute of Medicine, Quality and Safety in Health Care, RAND, Midwest Business Group on Health.

2006 Mercer Health & Benefits LLC, all rights reserved.

Presentation by Alexander Domaszewicz, Health Care Consumerism and Account-Based Strategies Symposium, Envisioning the Future, MetLife/ILC, Washington, DC, April 3, 2006.



ACTUAL CAUSES OF DEATH IN THE UNITED STATES IN 1990 AND 2000

Actual Cause	No. (%) in 1990*	No. (%) in 2000**
Tobacco	400,000 (19)	435,000 (18.1)
Poor Diet and Physical Activity	300,000 (14)	400,000 (16.6)
Alcohol Consumption	100,000 (5)	85,000 (3.5)
Microbial Agents	90,000 (4)	75,000 (3.1)
Toxic Agents	60,000 (3)	55,000 (2.3)
Motor Vehicle	25,000 (1)	43,000 (1.8)
Firearms	35,000 (2)	29,000 (1.2)
Sexual Behavior	30,000 (1)	20,000 (0.8)
Illicit Drug Use	20,000 (>1)	17,000 (0.7)
Total	1,060,000 (50)	1,159,000 (48.2)

* MCGINNIS, J. MICHAEL, AND FOEGE, WILLIAM H., ACTUAL CAUSES OF DEATH IN THE UNITED STATES. *JAMA* 270 (1993):2207-12.

** MOKDAD, ALI H., MARKS, JAMES S., STROUP, DONNA F., AND GERBERDING, JULIE L., 2004.



AMOUNT SPENT ON FEDERAL LOBBYING IN 2004, IN MILLIONS OF DOLLARS

Health Care	\$325
Communications, Technology	\$283
Finance, Insurance	\$279
Business, Retail, Services	\$165
Transportation	\$162
Energy, Natural Resources	\$157



AMOUNT SPENT ON FEDERAL LOBBYING IN 2004, IN MILLIONS OF DOLLARS

Defense	\$ 93
Single-Issue Groups*	\$ 90
Manufacturing	\$ 88
Agriculture	\$ 79

Sources: *Political Money Line*; Secretary of the Senate; Clerk of the House

* Includes abortion, environment and gun control groups.



TRAINED WORKFORCE

PEOPLE WANT TO STAY AT HOME AS LONG AS POSSIBLE

Paid Home Health Aides



Nursing Shortages



STRUCTURAL REFORMS

From

Health Promotion and Disease Prevention

To

Long Term Care

To

End of Life Care



ADMINISTRATIVE COSTS

Medicare – 2%

Private Health Insurance:

Up to 20%



PRIVATE HEALTH INSURANCE

Marketing

Advertising

Selling

Profits

Medicare Advantage – Costs 12% More



Redesigning Healthcare for All Americans
And An Older America

Not Really On
The Political Agenda



RESEARCH AND DEVELOPMENT

New Paradigm



Basic Biology of Aging



AGEISM

No Minimum Wage for Home Health Aides

9 of 10 Nursing Homes – Do Not Meet Federal Standards for Personnel

Clinical Trials – No FDA Requirement to Include Older Persons

Post-Marketing – Drug Safety



ALZHEIMER'S DISEASE

LITTLE PROGRESS

CENTURY OF THE BRAIN



QUALITY OF LIFE

CAUTIONS



INEQUALITY OF LONGEVITY

GLOBAL ECONOMY

DANGER TO US



THREATS

Shortgevity

Africa

USSR

Avian Flu



CALL TO ACTION

Chronic Diseases

Surpassed

Infectious Diseases



CALL TO ACTION

Worldwide

Millennial Goals

6 Vaccine-Preventable Diseases

Micronutrients

Mosquito Netting



CAN WE AFFORD OLD AGE

Health and Longevity

→ Wealth

vs.

Economic Stagnation



HEALTH → WEALTH

1. Follow the Individual Through Life
2. Silver Industries



“SILVER INDUSTRIES” OR THE MATURE MARKET

Financial Services

Legal Services

Healthcare Services

Housing and Living Arrangements

Travel and Hospitality



INTERGENERATIONAL CONFLICTS

None

U.S.

and

France



**DEPENDENCY RATIO”: COMPARISON OF NUMBERS OF
PERSONS UNDER 18 AND OVER 65
(THE “DEPENDENTS”) TO THE MIDDLE GENERATIONS
(THE “WORKERS”)**

Year	Number of Persons Under age 18 per 100 Persons Age 18 to 64	Number of Persons Age 65+ Per 100 Persons Age 18 to 64	Total Number of “Dependents” Per 100 “Workers”
Estimates:			
1900	72.6	7.3	79.9
1910	65.7	7.5	73.2
1920	64.0	8.0	72.0
1930	58.6	9.1	67.7
1940	48.8	10.9	59.7
1950	51.1	13.4	64.5
1960	65.3	16.9	82.2
1970	61.1	17.6	78.7
1980	46.2	18.7	64.9
1990	41.7	20.3	62.0
1995	42.7	20.9	63.6
2000	41.3	20.4	61.7



**DEPENDENCY RATIO”: COMPARISON OF NUMBERS OF
PERSONS UNDER 18 AND OVER 65
(THE “DEPENDENTS”) TO THE MIDDLE GENERATIONS
(THE “WORKERS”)**

	Number of Persons Under age 18 per 100 Persons Age 18 to 64	Number of Persons Age 65+ Per 100 Persons Age 18 to 64	Total Number of “Dependents” Per 100 “Workers”
--	--	---	---

Projections:

2005	39.8	20.2	60.0
2010	38.3	21.1	59.4
2020	39.8	27.7	67.5
2030	42.1	35.6	77.7
2040	42.1	36.5	78.6
2050	39.0	33.4	72.4



FOCUS IN USA

Medicine, Nursing and Social Work

GACA

Medicare

Gerontology

Interdisciplinary
Extraordinarily Important

Need for Visionary Leadership



2006 OFFICIAL POVERTY DATA

For All People Over 65
Per Individual

Poverty Line for 65+ Percentage of the 65+ population below the poverty line 9.42%:

\$9,669/Year or Less
About \$185/Week or Less
About \$26/Day or Less

Poverty: Percentage of the 65+ Population below 125% of Poverty line: 16.65%:

\$12,086/Year or Less
About \$232/Week or Less
About \$33/Day or Less

Poverty: Percentage of the 65+ Population below 150% the poverty line: 22.35%

\$14,503/Year or Less
About \$279/Week or Less
About \$39/Day or Less



THE SOCIAL SECURITY VANISHING ACT

WHAT THE 2006 COST-OF-LIVING ADJUSTMENT IS UP AGAINST

Social Security

Cost-of-Living
adjustment: up 4.1%.

Average monthly
benefit in 2005; \$963.

Average monthly
benefit in 2006: \$1,002

Medicare Part B

Monthly premium: \$88.50 (up
\$10.30 from 2005)

Part D: (Drug Benefit)

Average monthly premium:
\$32.

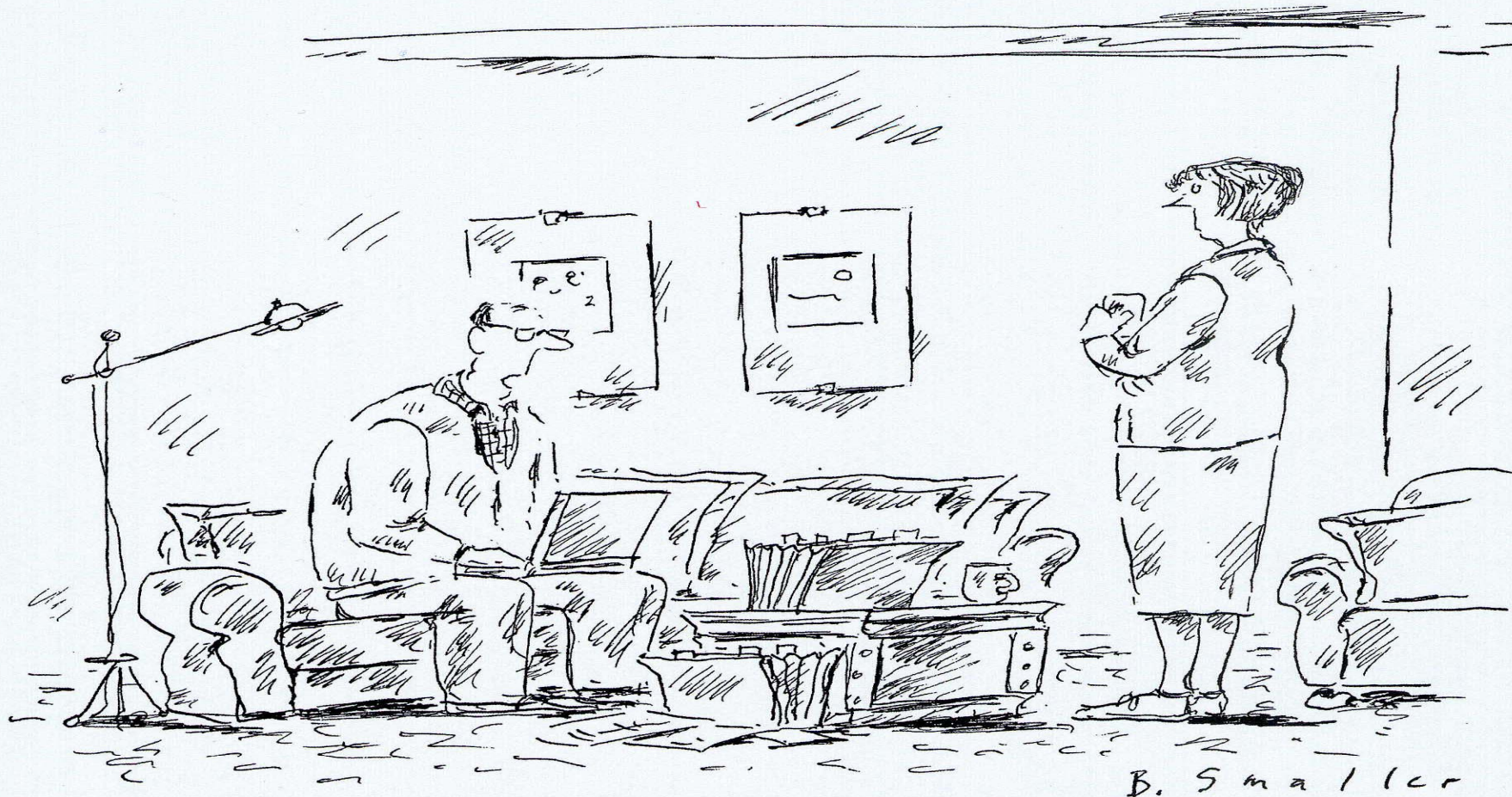
Inflation (9 months
since Jan. 1, 2005):
up 5.1%

Energy Prices: up 42.5%

Food Prices: up 2.1%

Medical Care Costs:
up 4%





"If we take a late retirement and an early death, we'll just squeak by."

Brain Health or Cognitive Vitality

Physical Activity

Intellectual Stimulation



Computers

Language

Musical Instruments



Vascular Risk Factors

Hypertension

Diabetes

Heart Disease

Middle-Aged Spread (Obesity)



Life Review

Coming to Terms



Geriatric Psychiatry

Leadership re Aging in America

Reimbursement Parity



Drug Safety

FDA/Clinical Trials

FDA/Post-Marketing Surveillance





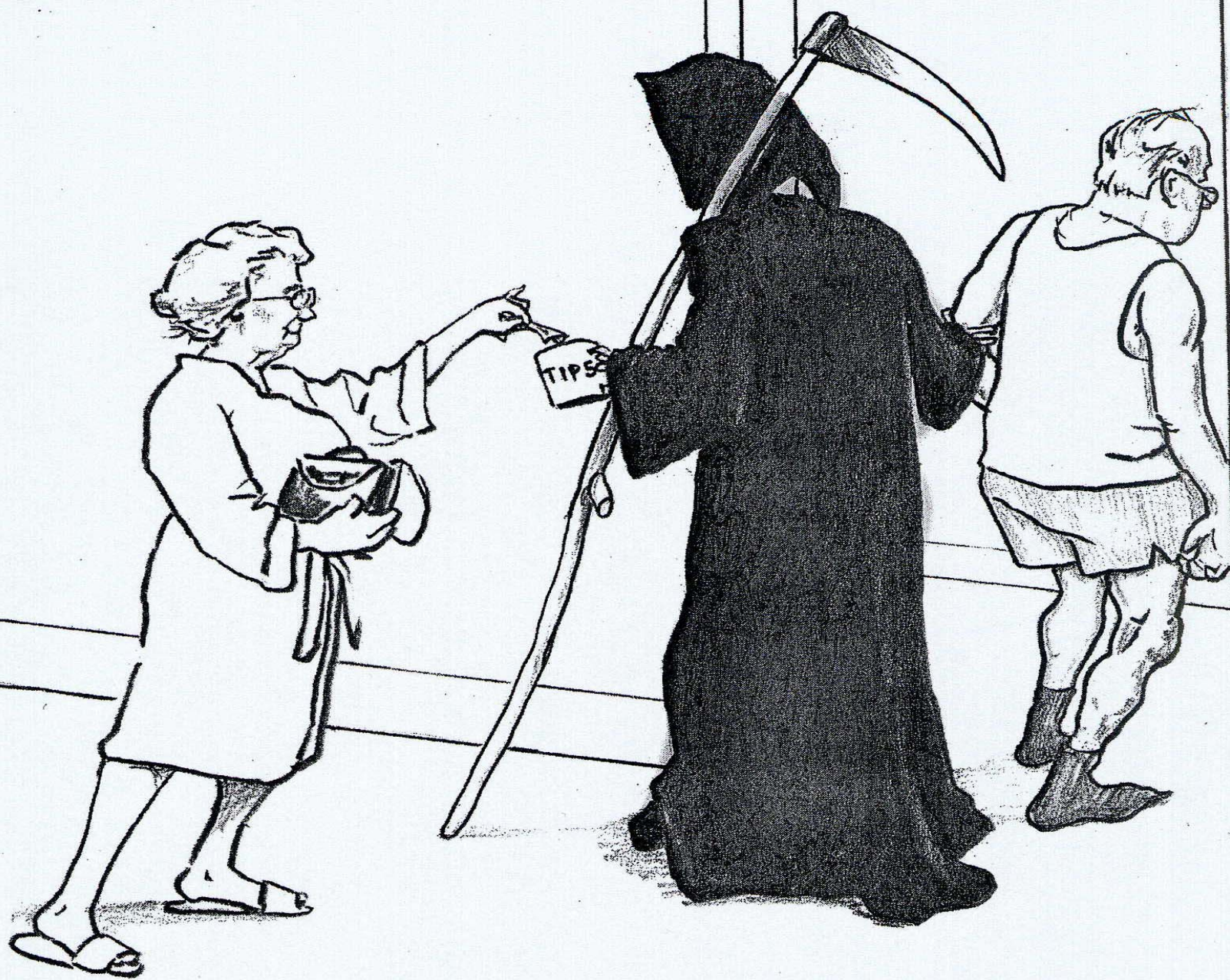
"This will lighten your mood, Dick—every few minutes, a baby boomer turns fifty."

THE FUTURE

BOOMERS: TRANSFORMATIVE BUT AT RISK

GENOMICS AND REGENERATIVE MEDICINE





INTERNATIONAL LONGEVITY CENTER

www.ilcusa.org
60 East 86 Street
New York, NY 10028

The screenshot shows the homepage of the International Longevity Center (ILC). At the top left is the ILC logo with the tagline "Addressing The Impact of Longevity on Society". To the right of the logo is a search bar with a "Go" button. Below the logo is a navigation menu with links for "Home", "Contact Us", "Newsletter", and "Donate". A banner image below the navigation menu shows a diverse group of people's faces. Below the banner is a horizontal menu with categories: "ABOUT ILC", "Our Partners", "Publications", "Projects", "Events", and "Get Involved". The "ABOUT ILC" section is expanded, showing sub-links for "President & CEO", "Governance", "Staff", "Fund Raising", and "ILC Partnerships". Under "Our Mission", there is a paragraph describing the center's history and purpose, and a small image of two women. To the right of the "ABOUT ILC" section are two columns: "ILC News" with a list of recent news items and a "Read More..." link, and "Get Involved" with a list of fundraising and shop options.

ILC Addressing The Impact of Longevity on Society

Home | Contact Us | Newsletter | Donate

ABOUT ILC **Our Partners** **Publications** **Projects** **Events** **Get Involved**

About ILC

[President & CEO](#) - [Governance](#) - [Staff](#) - [Fund Raising](#) - [ILC Partnerships](#)

Our Mission

Organized in 1990 by Robert N. Butler, M.D., Professor of Geriatrics at Mount Sinai School of Medicine, The International Longevity Center-USA (ILC-USA) is a not-for-profit, nonpartisan research, policy and education organization whose mission is to help societies address the issues of population aging and longevity in positive and constructive ways and to highlight older people's productivity and contributions to their families and to society as a whole. The ILC-USA is an independent affiliate of Mount Sinai School of Medicine and is incorporated as a tax-exempt 501(c)(3) entity. The center has been located at 60 East 86th Street in New York City since 1999.



The ILC-USA is the first private, nonpartisan, international center devoted to science-based policy development on the aging of populations. It is organized in four programs -- Center Research, Communications, Partnerships, and Visiting Scholars. Our overseas partners, the ILCs of Japan, United Kingdom, France, Dominican Republic, India, Sub-Saharan Africa Argentina and the Netherlands work both independently and collaboratively with the ILC-USA.

All activities are intergenerational or life span in perspective; international, in that they draw on comparative data; and interdisciplinary, in that they bring together experts in a variety of fields to address specific questions.

ILC News

- Geriatrics Lags in Age of High - Tech Medicine
- A Conversation with Robert N. Butler
- Looking ahead to when boomers need care
- Boomers Leap the 60 Hurdle
- Dr. Butler Interview

[Read More...](#)

Get Involved

- Fundraising for ILC
- ILC Fundraising
- ILC Shop
- Fundraising for ILC

