



# Compression of Disability for Older Americans, 1992-2002

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# What's the Problem?

- Older Americans are living longer
- Are they healthier?
- Three hypothesis
  - Compression of Morbidity (Fries, 1980)
  - Expansion of Morbidity (Gruenberg, 1977)
  - Dynamic equilibrium (Manton, 1982)

# What We Know So Far

- 1970s: Expansion
- 1980s: Signs of dynamic equilibrium
- 1990s: ?
  - Mortality continues to fall
  - Instrumental Activities of Daily Living (IADL) disability has been falling
  - Activities of Daily Living (ADL) disability has been falling too.

# Framework of Analysis

- Goal: Describe the latest patterns for older Americans
- Data: Medicare Current Beneficiary Survey, 1992-2002
  - Disability=having difficulty with or unable to perform at least one IADL or ADL
  - Three states of functional disability
    - Active: no IADL or ADL limitations
    - Moderate: limitation in 1+ IADLs or 1-2 ADLs
    - Severe: limitation in 3+ ADLs

# The Medicare Current Beneficiary Survey

- Continuous since Fall 1991
- Sample of ~13K Medicare beneficiaries (includes inst.)
- Medicare covers ~96% of US population 65+
- Gathers information on health status, health care use and costs and insurance coverage
- 3 in-person interviews per year
- Rotating panel, respondents in sample for 3.5 years
- Respondents asked about health each Fall over 3 year period=4 health status readings per respondent
- Linked to Medicare data on costs and mortality

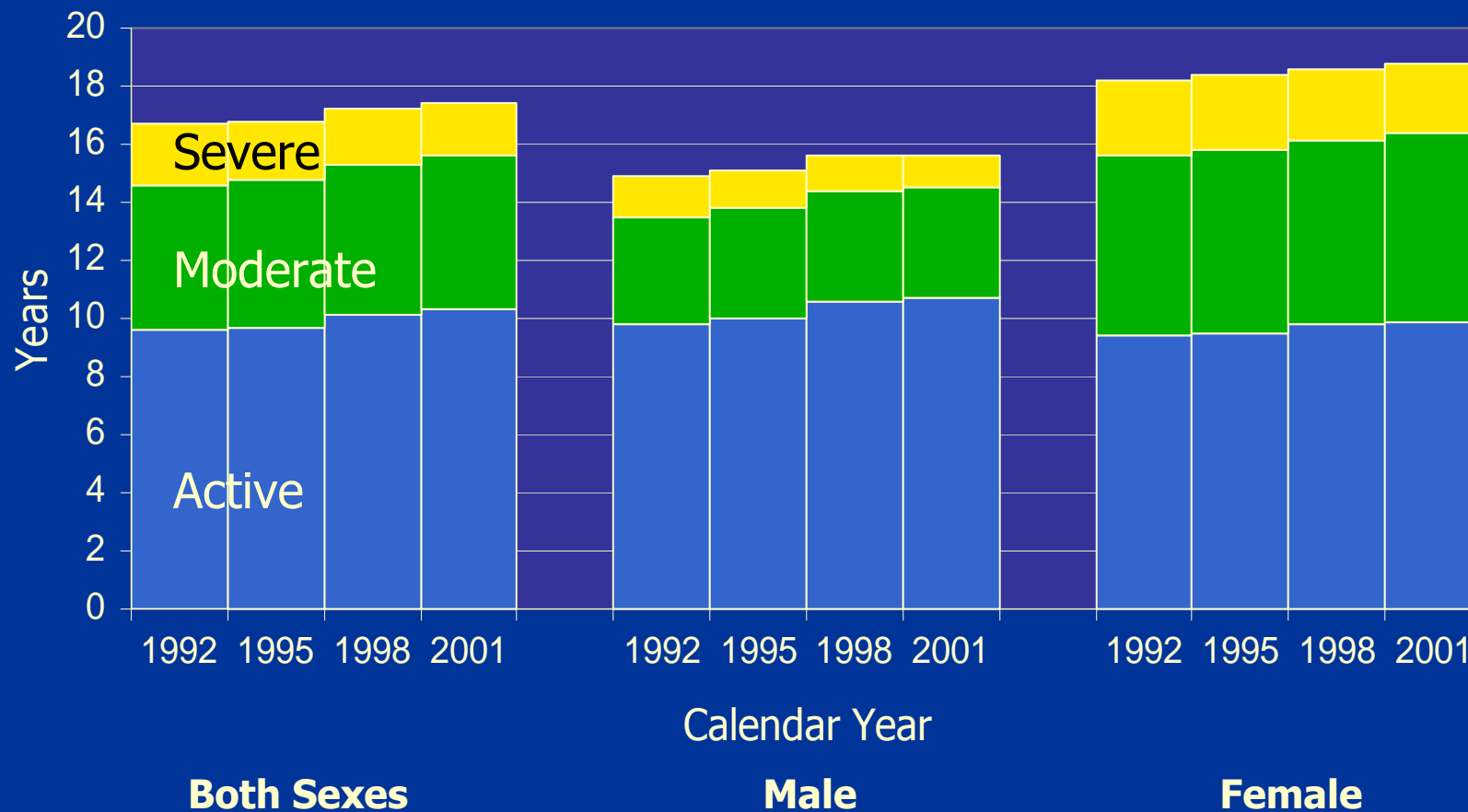
# Statistical Modeling

- Multi-state life table model, built on year to year data on health transitions
- Microsimulation to create individual health histories based on model results
- Estimates
  - Life expectancy: total, active and disabled life expectancy (TLE, ALE and DLE)
  - Age at initial disability onset
  - Recovery

# Sample Characteristics

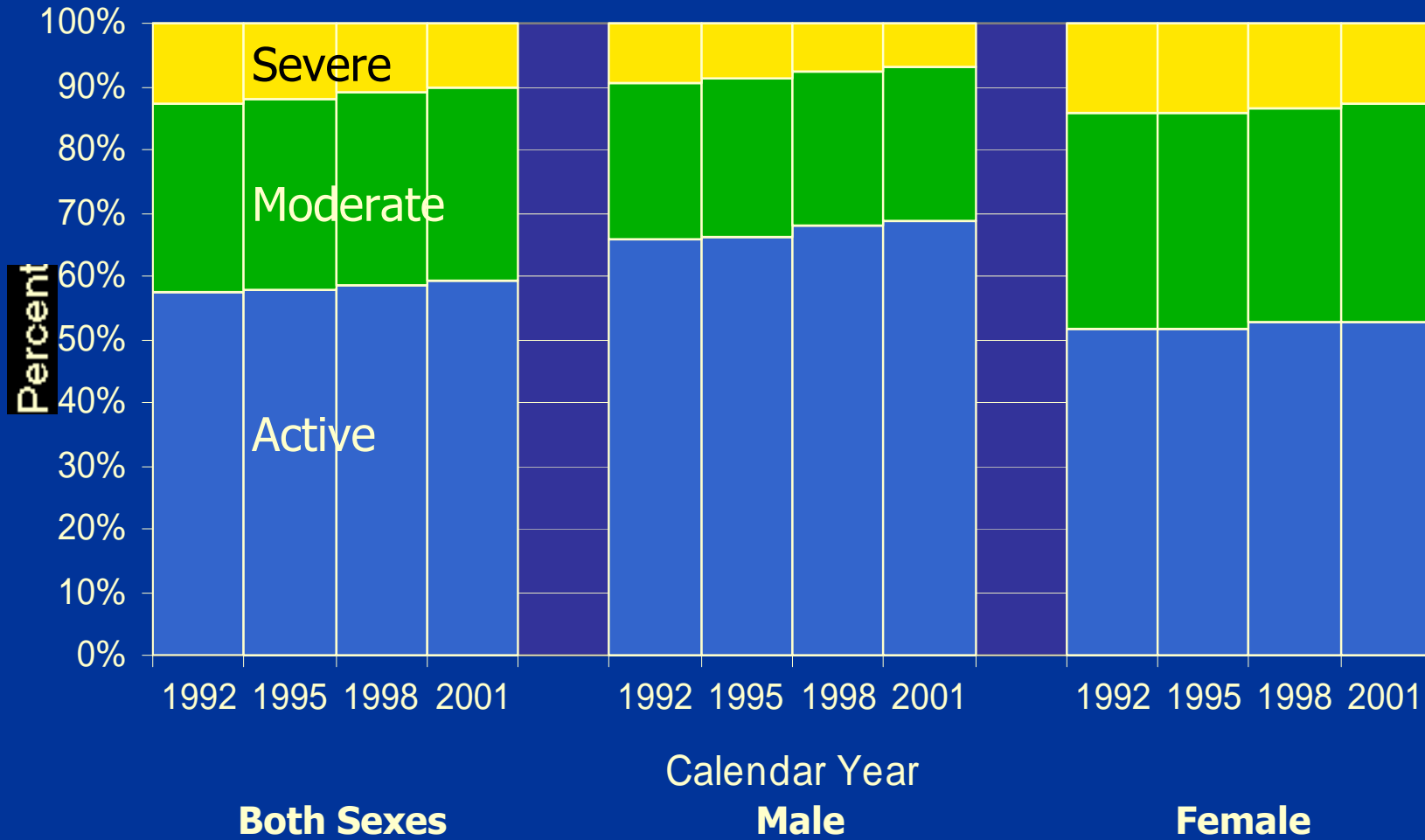
		<i>1992</i>	<i>2001</i>
Sample Size		9,258	9,114
Average Age		76.8	77.9
		(% of sample size)	
Male/Female		39.2/60.8	41.2/58.8
White/Black/Hispanic		84.3/9.1/5.0	81.0/8.5/7.0
Education	0-11 years	46.3	33.4
	High School	29.2	28.8
	College+	24.6	37.8
1+ Chronic Conditions		85.3	91.8
Functional Status	Active	48.1	51.9
	Moderately Disabled	28.2	27.6
	Severely Disabled	23.7	20.6

# Total and Disabled Life Exp. at 65 by Gender





# Percent Distribution of Total Life Exp at 65 by Disability Status and Gender



## Total and Disabled Life Exp. by Functional Status at 65

	<b>Active</b>		<b>Moderately Disabled</b>		<b>Severely Disabled</b>	
	<i>1992</i>	<i>2001</i>	<i>1992</i>	<i>2001</i>	<i>1992</i>	<i>2001</i>
TLE	17.1	17.8	16.2	16.9	13.8	14.6
ALE	10.2	11.0	8.1	9.0	5.7	6.7
DLE	6.9	6.8	8.1	7.9	8.1	7.9
Moderate DLE	4.9	5.1	6.0	6.1	4.7	5.0
Severe DLE	2.0	1.7	2.1	1.8	3.4	2.9

# Age at Initial Disability Onset for 65-yr Olds

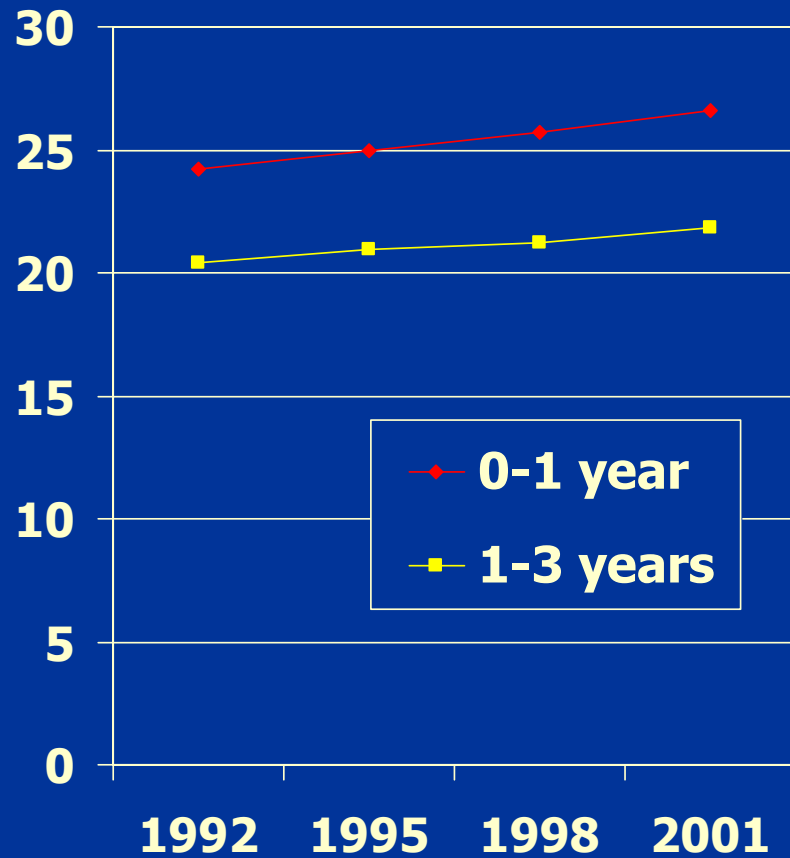
Status at 65	Disability Level	1992	1995	1998	2001
All Persons	Moderate	70.1	69.9	70.2	70.0
	Severe	77.1	76.7	77.5	77.4
Active	Moderate	71.6	71.6	71.6	71.7
	Severe	79.1	79.3	79.6	79.9
Moderately Disabled	Severe	76.6	76.9	77.3	77.8

# Decomposing Estimates of Disabled Life Exp. at Age 65

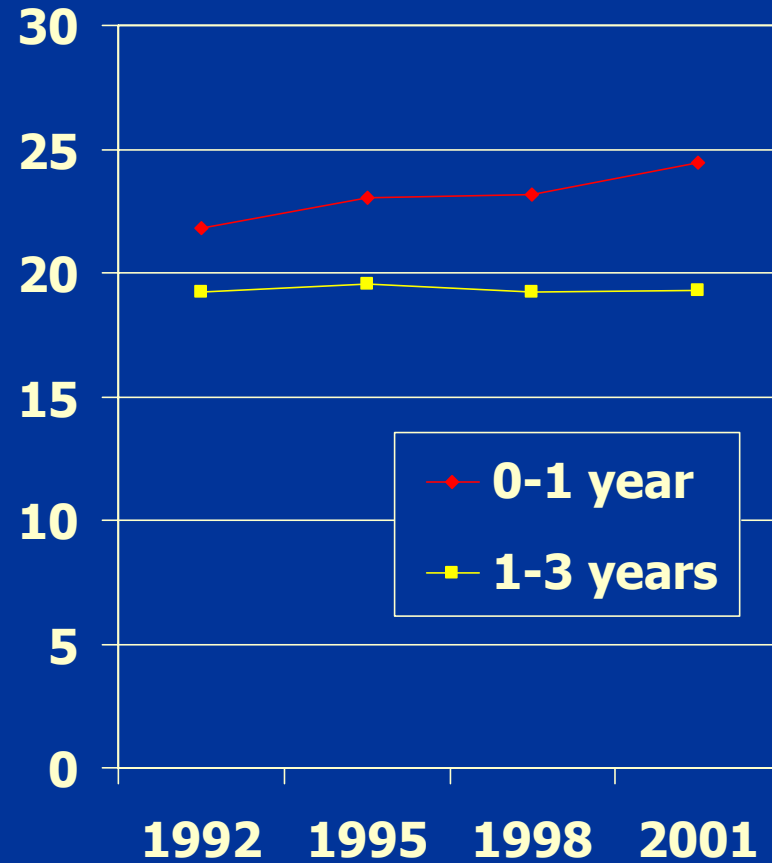
		1992	1995	1998	2001
Moderate DLE	% having an episode	88.5	89.2	89.7	90.5
	# of episodes	2.5	2.5	2.5	2.6
	Average duration	2.3	2.3	2.3	2.2
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Severe DLE	% having an episode	58.5	58.9	57.2	56.9
	# of episodes	1.5	1.5	1.5	1.5
	Average duration	2.3	2.2	2.1	2.1

# Percent Recovering From Disability by Time of Recovery

## From Moderate Disability



## From Severe Disability





# Conclusion

- Recent experience characterized by dynamic equilibrium
- Expansion of moderate disability due to stable onset age and increased incidence
- Compression of severe disability due to delays in onset, lower incidence and shorter duration
- Reason for trends?
- Future trends?