Physical Disorders Associated with Aging

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Physical Disorders of Older Persons

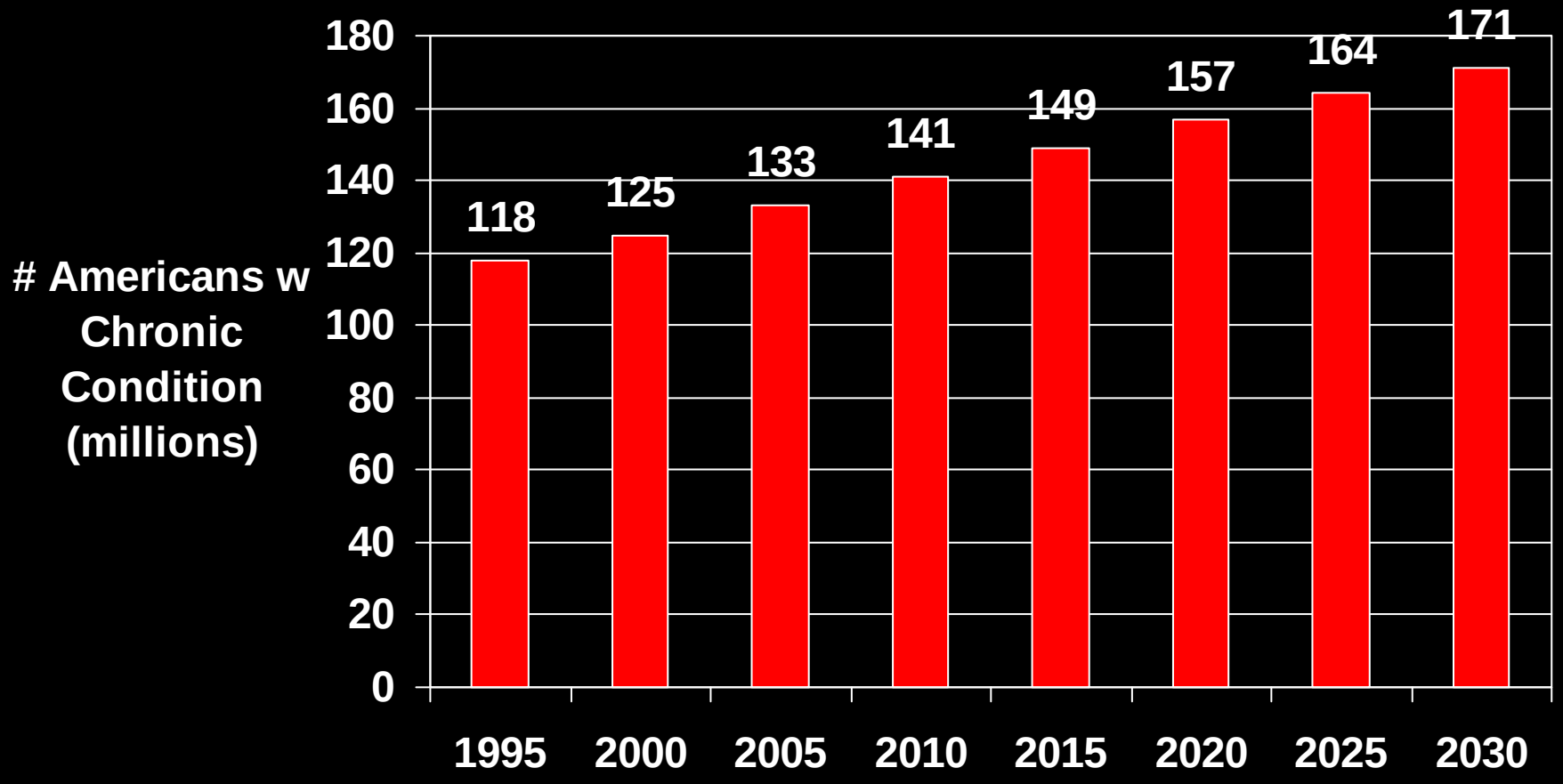
- Chronic conditions
- Medical issues related to chronic conditions
- Policy implications

Chronic Condition

- Long term disease
- Injury with long sequelae
- Onset -before birth to late life

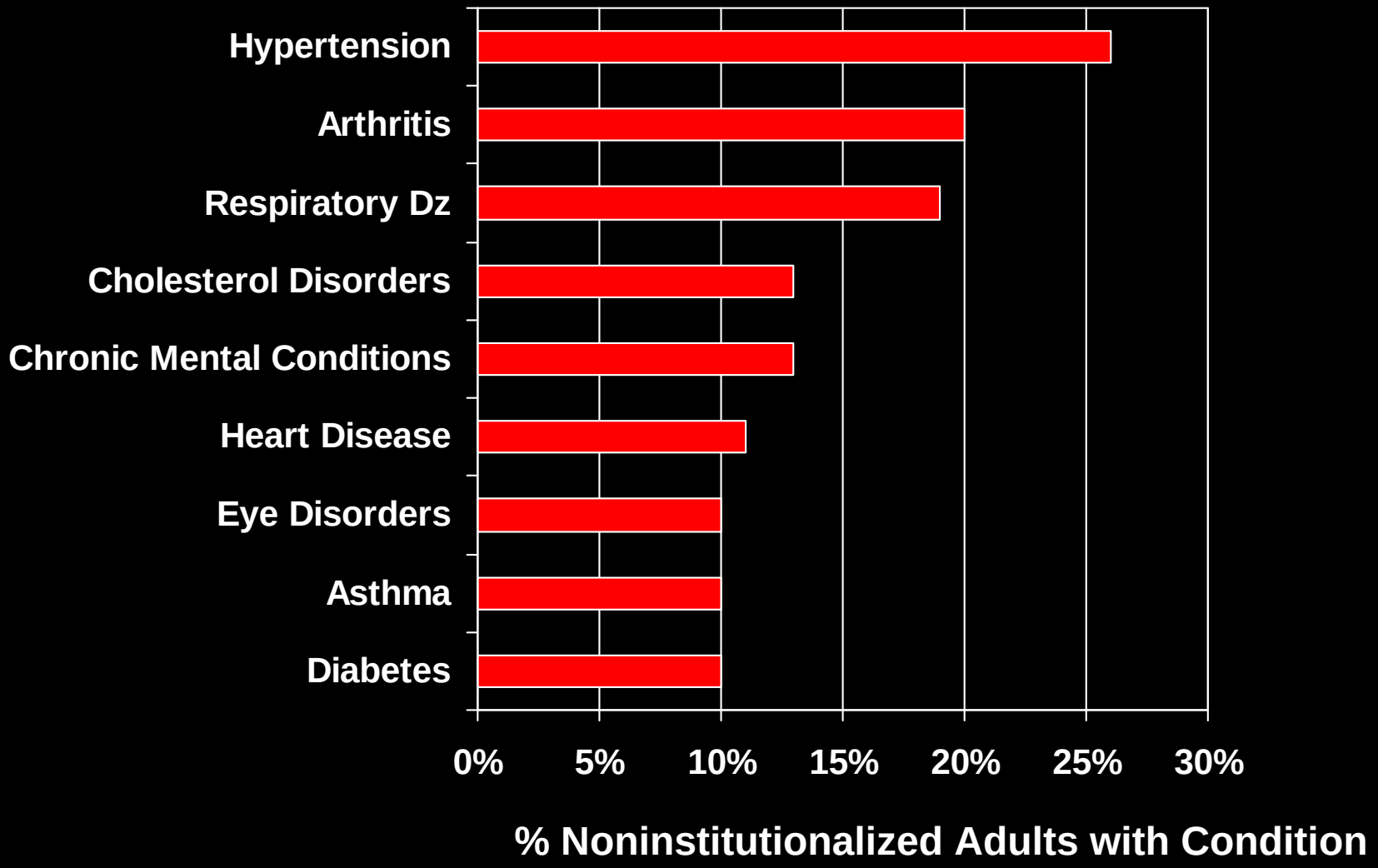
- **Defining aspects**:
  - **Duration** - permanent feature for remainder of life
  - **Perhaps controllable, not curable**

Number of People with Chronic Conditions



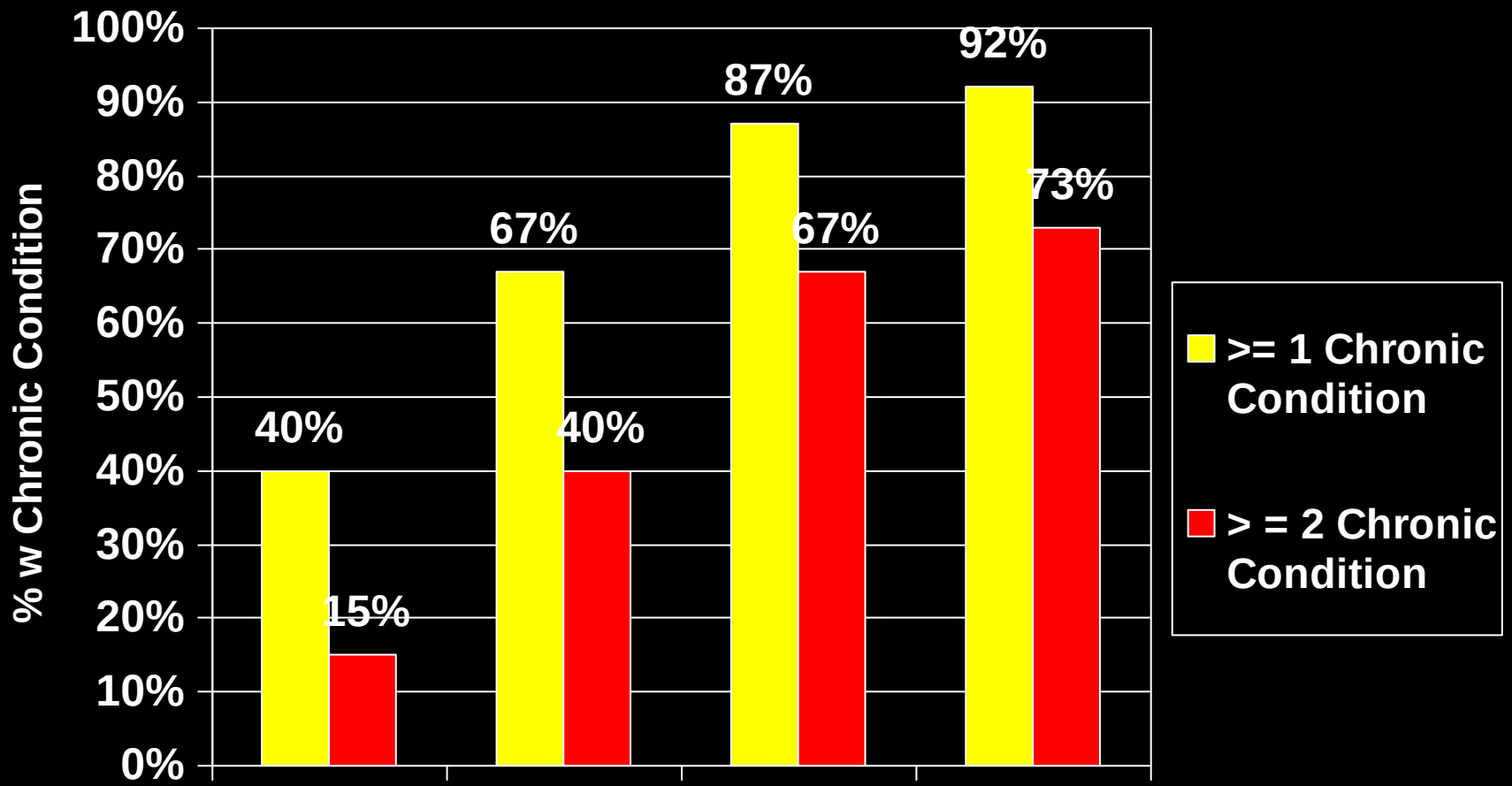
Wu et al. Rand Corp, 2000

Most Common Chronic Conditions



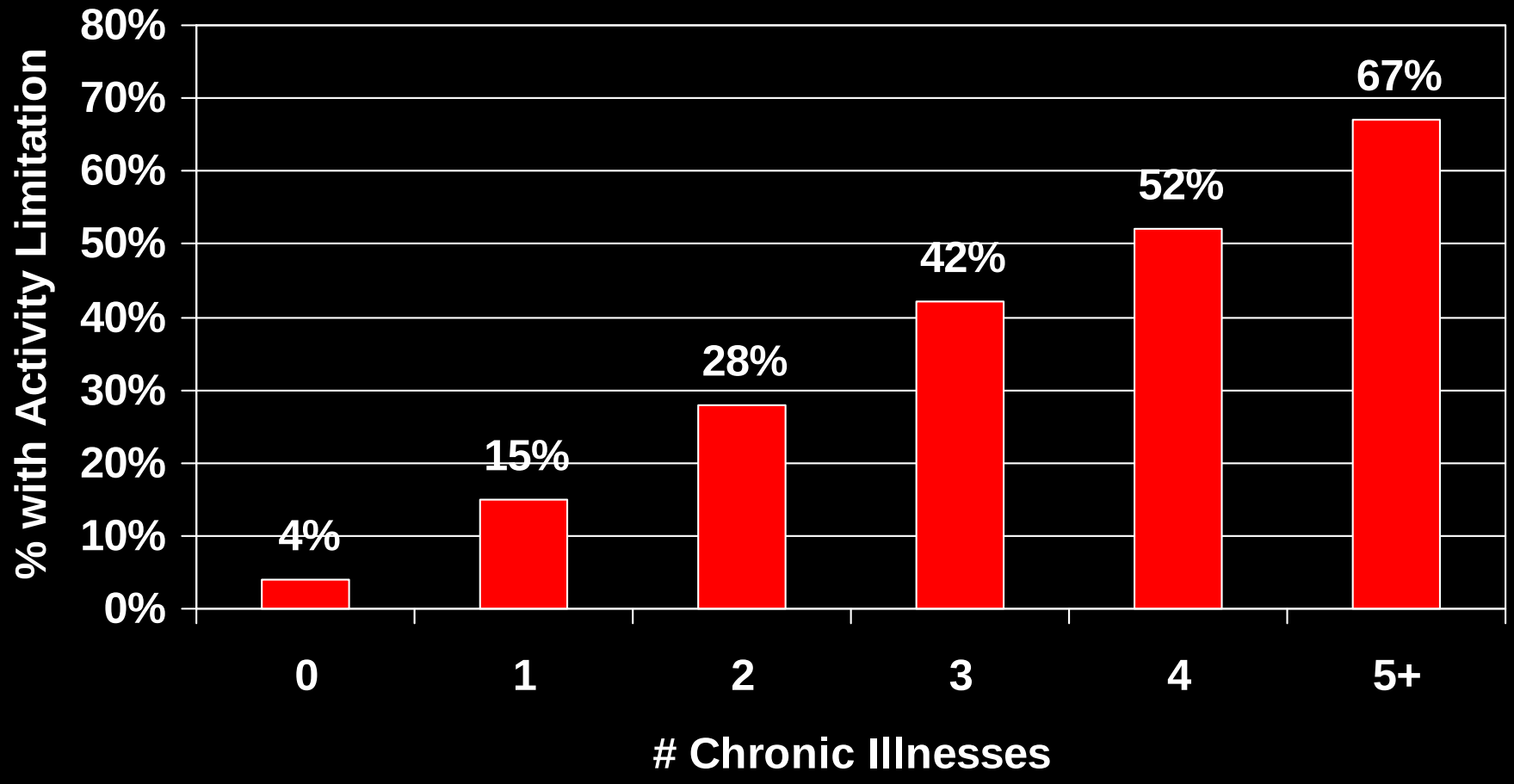
Medicare Expenditure Panel Survey, 2001

Age and Prevalence of Chronic Conditions



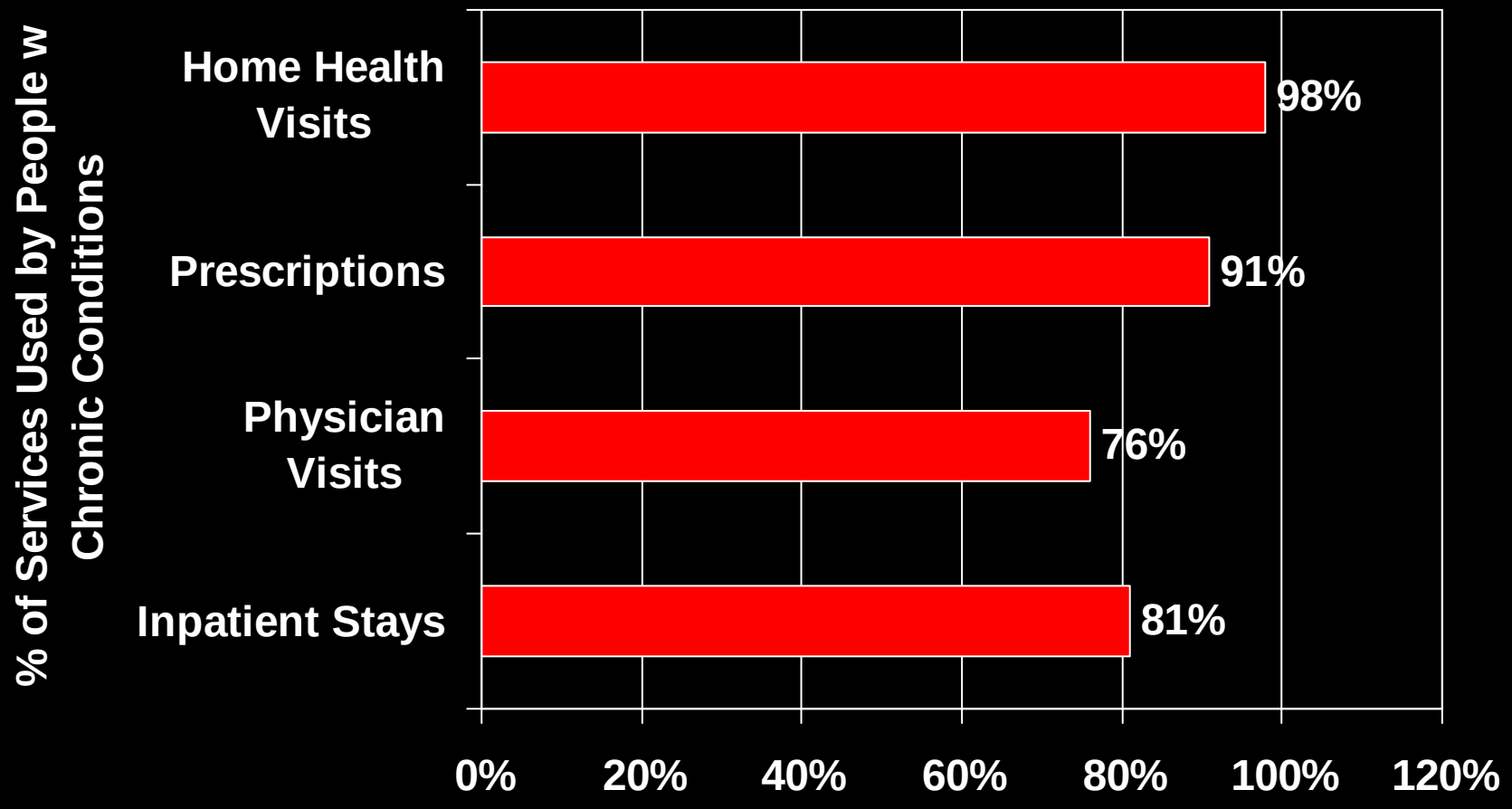
Medicare Expen
Panel Survey, 2001

Activity Limitation and # Chronic Conditions



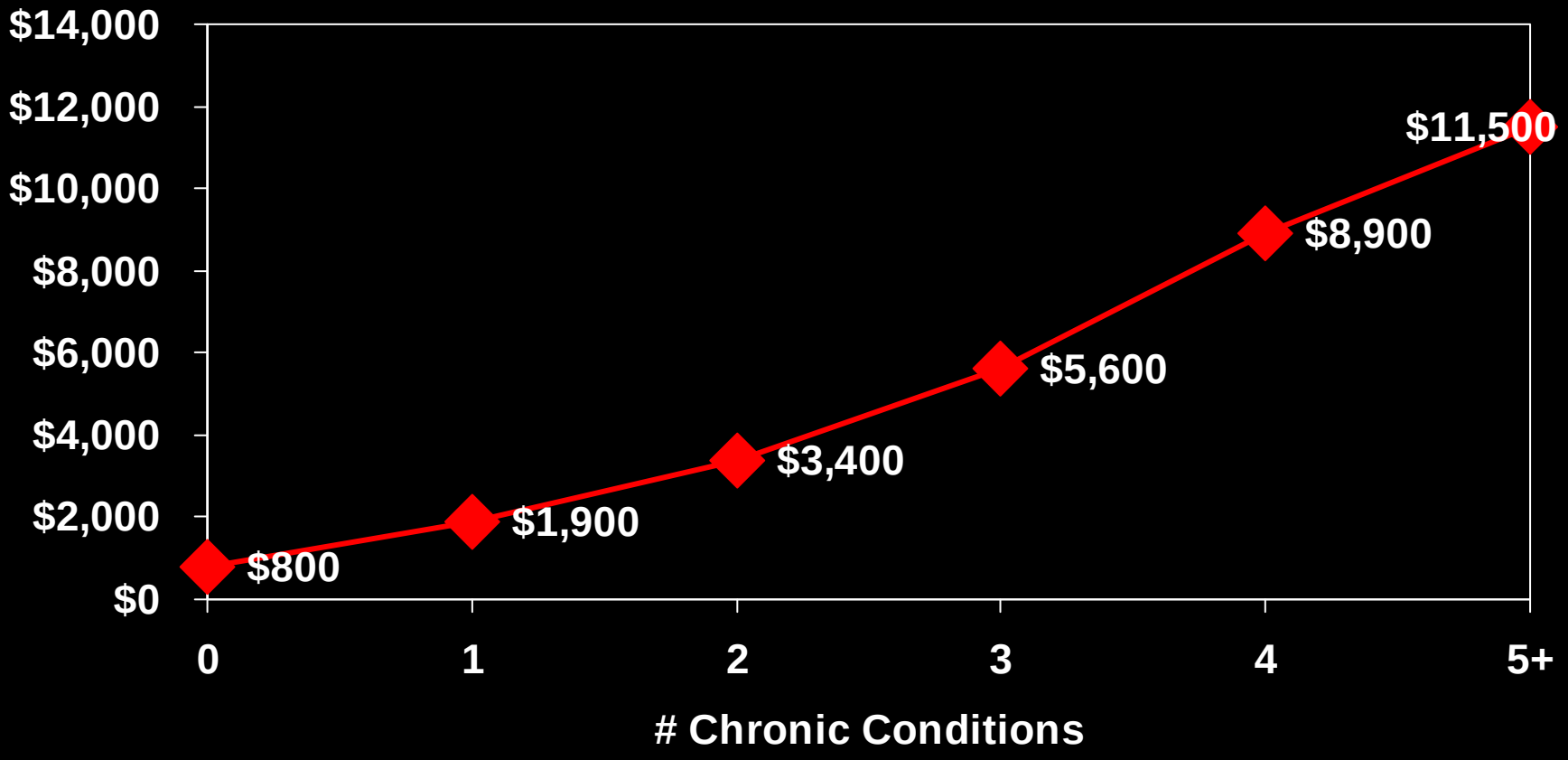
Medicare Expend Panel Survey, 1998

Health Care Utilization



Medicare Expen Panel Survey, 2001

Health Care Spending and Number of Chronic Conditions



Medical Expenditures Panel Survey, 1998

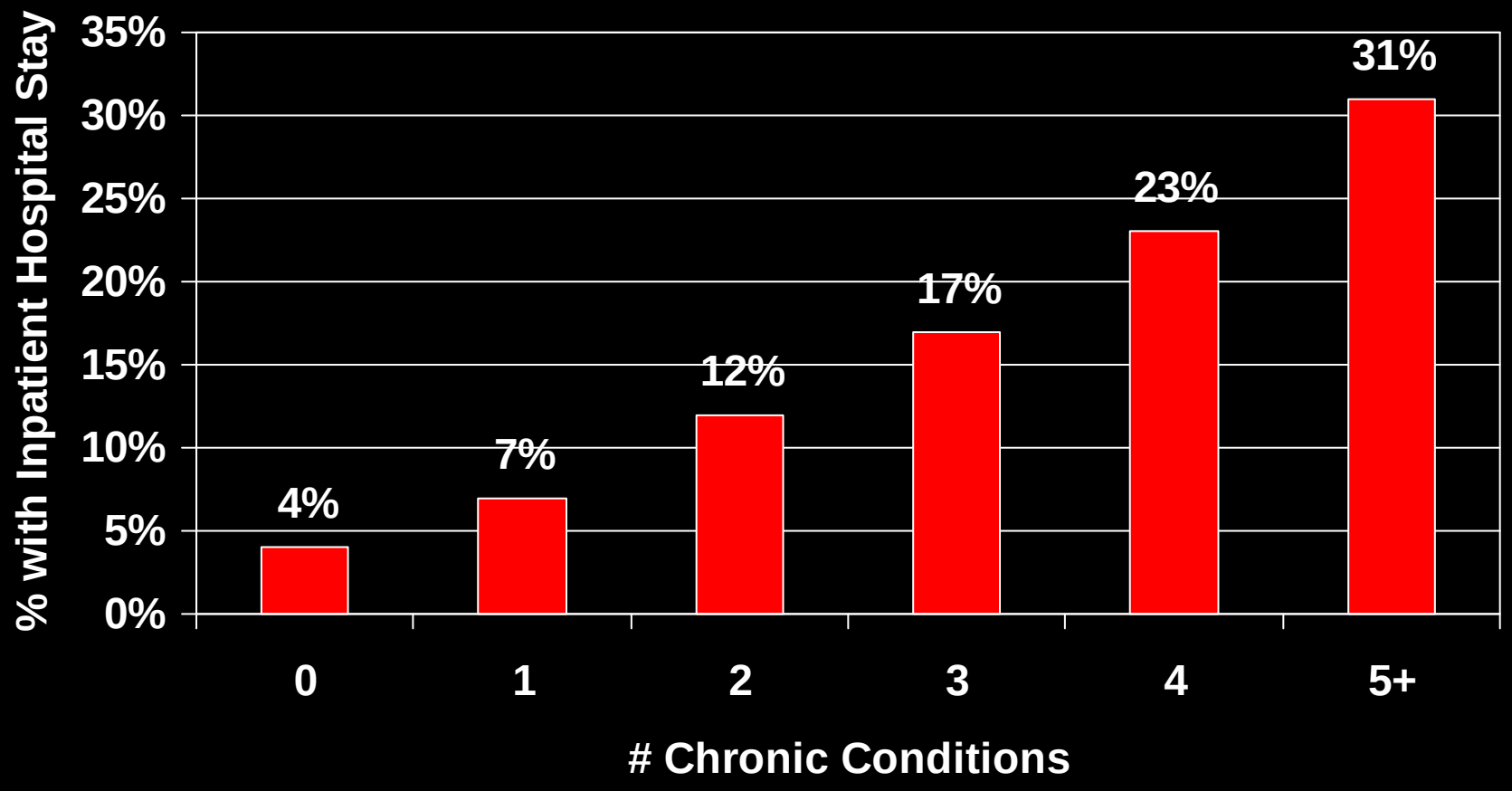
Chronic Conditions and Expenditures to the Medicare Program

Number of Chronic Conditions	Percent of Beneficiaries 65+		Percent Medicare Expenditures	
0	18		1	
1	19		4	
2	21		11	
3	18		18	
4	12		21	
5	7	22%	18	66%
6	3		13	
7+	2		14	

Chronic Conditions and Per Capita Medicare Expenditures

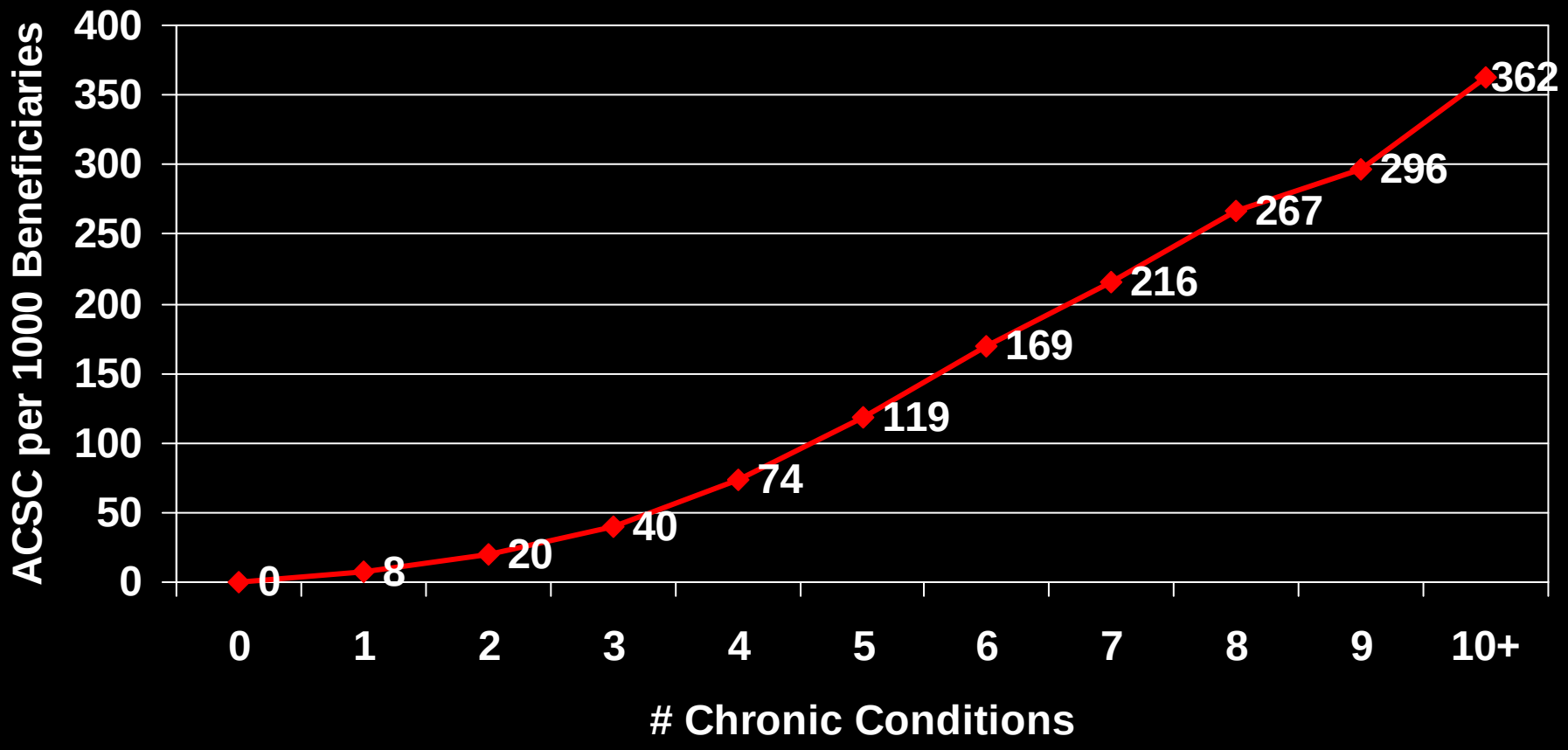
Number of Chronic Conditions	Mean Medicare Expenditures Per Beneficiary
0	$211
1	$1,015
2	$1,870
3	$3,204
4	$5,246
5	$8,159
6	$11,948
7+	$23,825

Chronic Conditions and Hospital Use

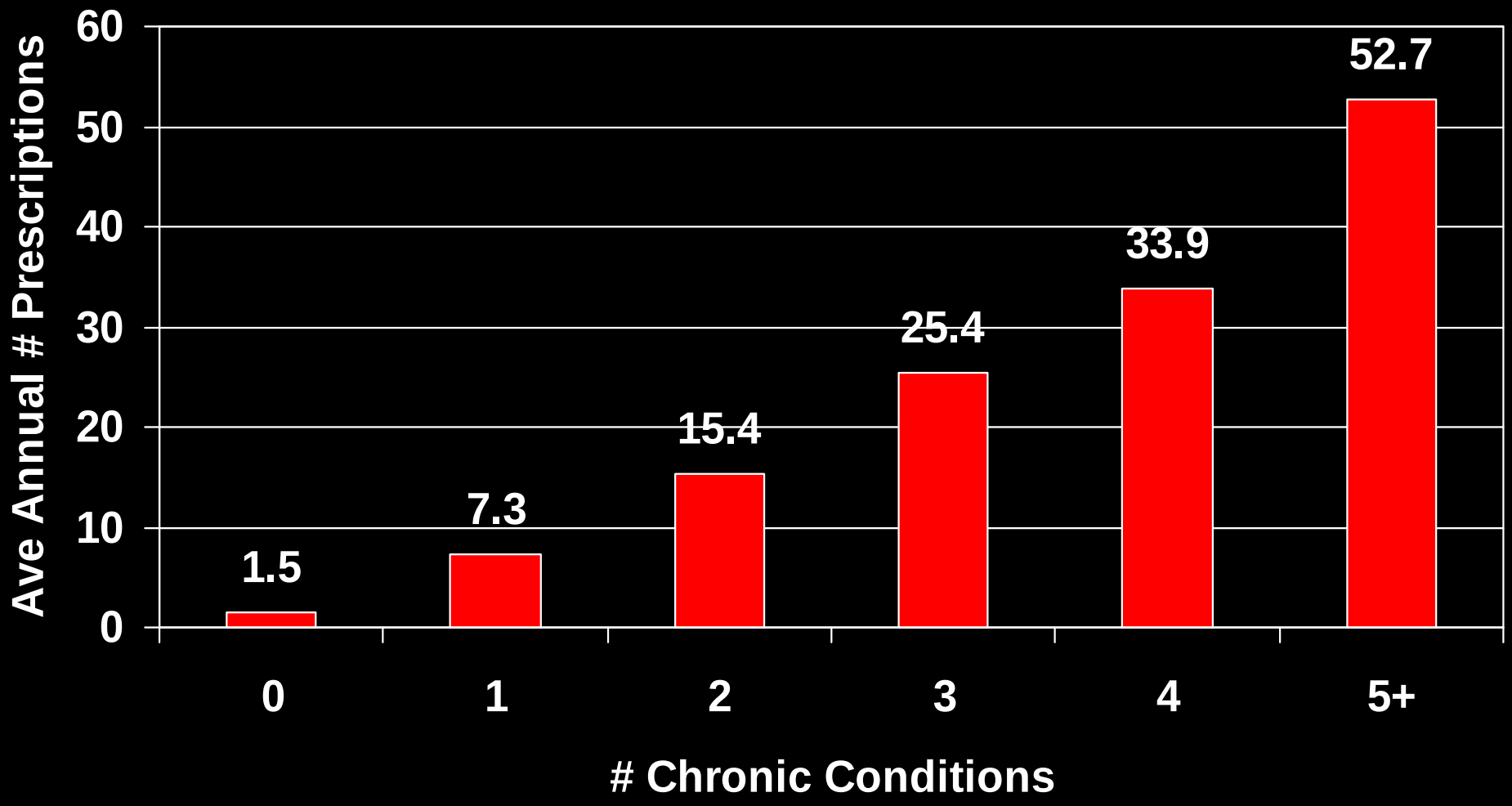


Medicare Expen Panel Survey, 2001

Hospitalizations for ACSC Conditions

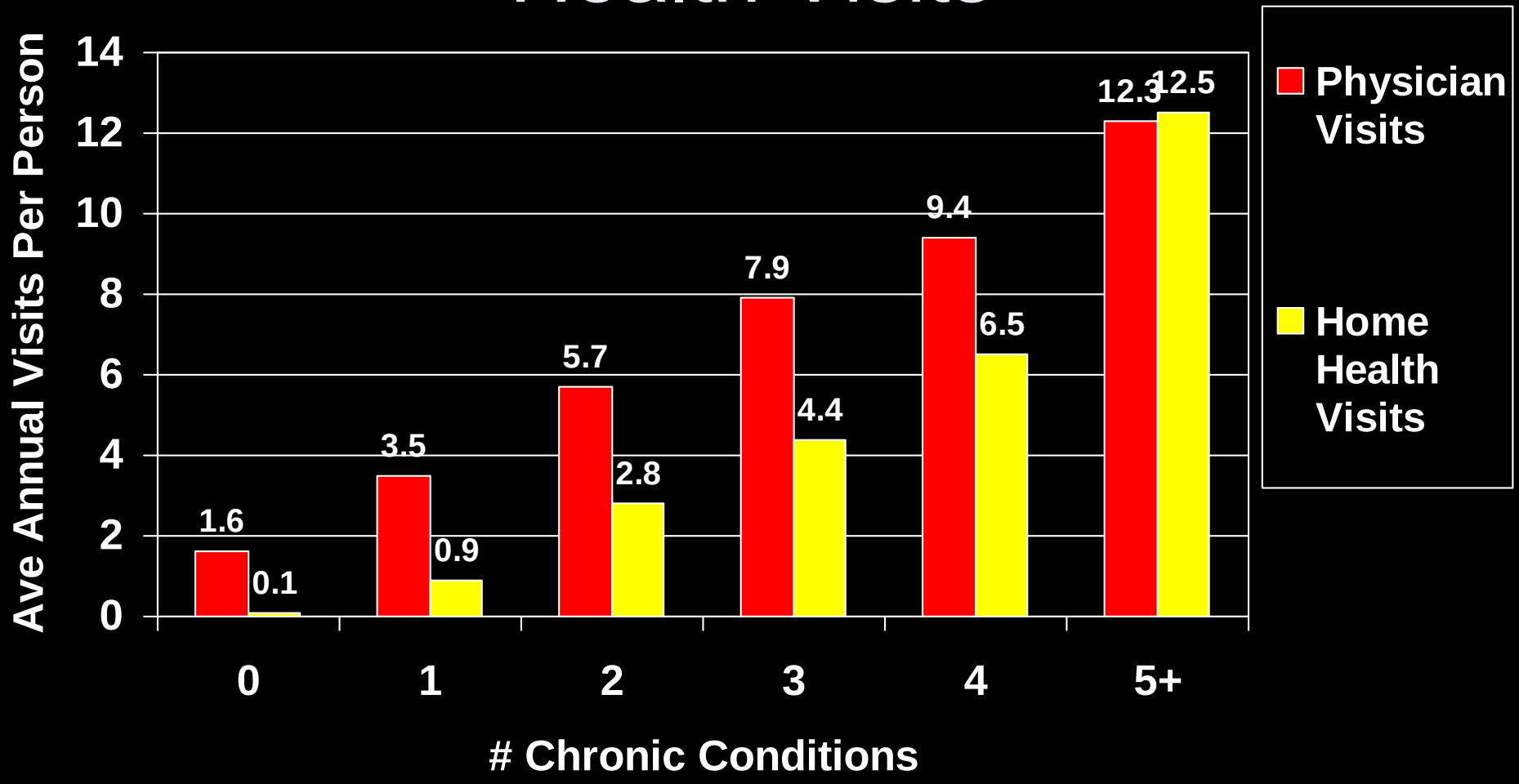


Chronic Conditions and Rx Meds



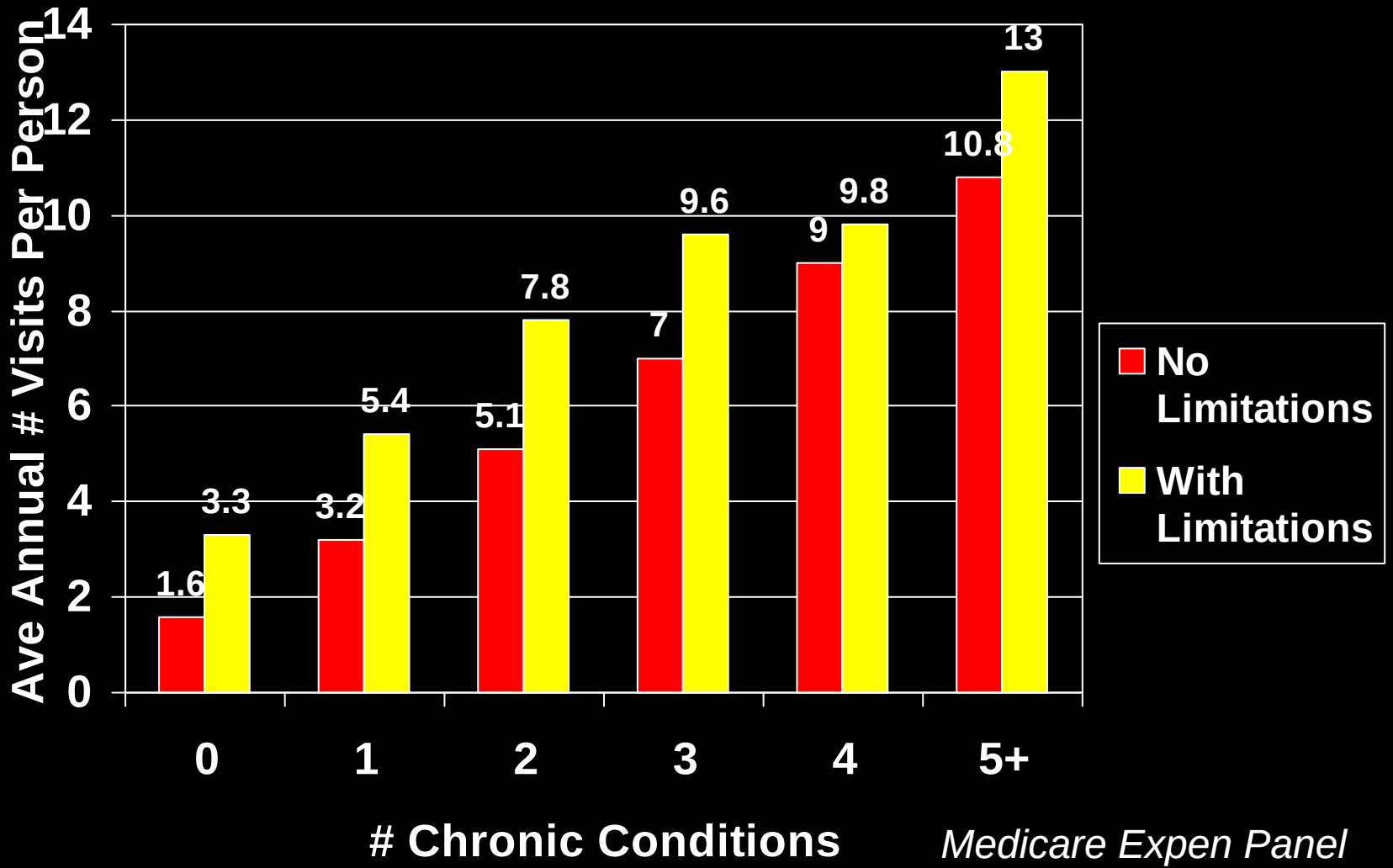
Medicare Expend Panel Survey, 2001

Chronic Conditions, MD and Home Health Visits



Medicare Expen Panel Survey, 2001

Functional Status & Chronic Conditions



Medicare Expen Panel Survey, 2001

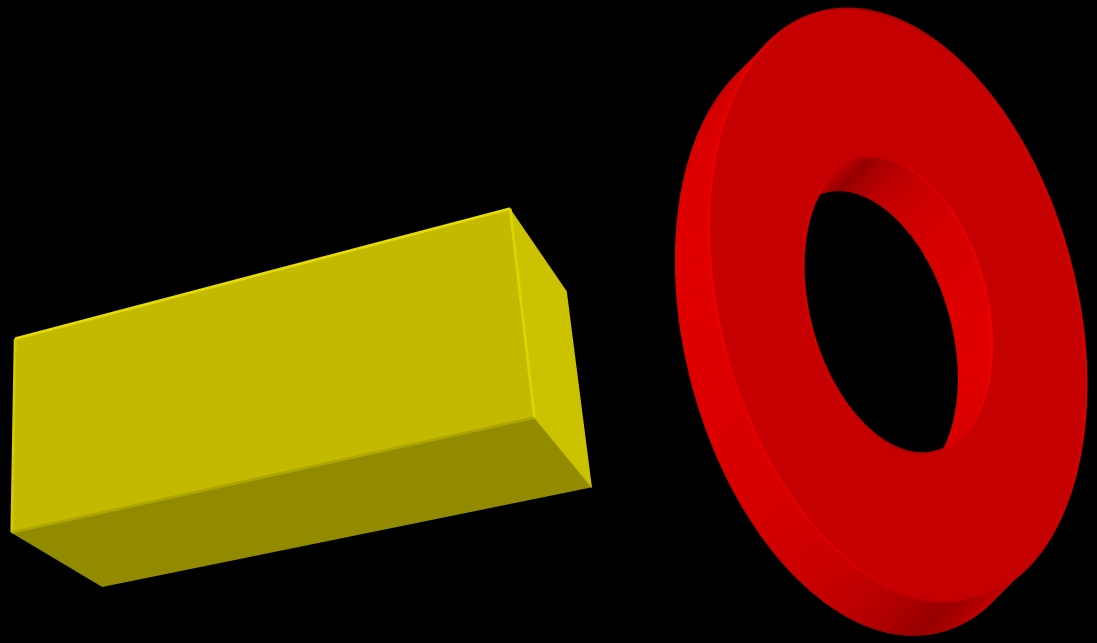
Medical Care of Chronic Conditions

What are the policy implications?

How does Medicare or the health care system deal with this issue of chronic conditions?

Medicare Bill Signed into Law - 1965

“Round Pegs and Square Holes: Medicare and Chronic Care”



April 2002 NASI report
authored by Bruce Vladeck

Courtesy J. Wolff

Barriers to Quality Chronic Care in the Medicare Program

- Orientation toward acute care
- Lack of incentives to provide state-of-the art chronic care.
  - No impetus to coordinate care
- No IT infrastructure
- Inadequate training of health professionals
- Quality not paid for

How Do You Care for These People?

What does quality care for these people look like?

Are evidence-based disease guidelines the answer?

Quality of Life and Patient Preferences Addressed in Guidelines:

Guidelines	Quality of life	Short term quality of life vs. long-term prevention	Incorporation of Patient Prefs into goals of therapy	Time needed to benefit/treat
Diabetes	No	No	Yes	Yes
Hypertension	No	No	No	No
Osteoarthritis	Yes	No	No	No
Osteoporosis	No	No	Yes	No
COPD	Yes	No	No	No
Atrial Fib	Yes	No	Yes	No
CHF	Yes	No	Yes: end-of-life	No
Angina	Yes	No	Yes	No
Lipids	No	No	No	No
No:	4/9	9/9	4/9	8/9

Boyd, JAMA 2005;294(6):716-24.

Time	Medications	Non-pharmacologic Therapy	All Day	Periodic
7 AM	Ipratropium MDI Alendronate 70mg weekly	Check feet Sit upright 30 min. Check blood sugar	Joint protection Energy conservation Exercise (non-weight bearing if foot disease, weight bearing for osteoporosis) Muscle strengthening exercises, Aerobic Exercise ROM exercises Avoid environmental exposures that might exacerbate COPD Wear appropriate footwear Albuterol MDI prn Limit Alcohol	Pneumonia vaccine, Yearly influenza vaccine All provider visits:Evaluate Self-monitoring blood glucose, foot exam and BP check: Quarterly HbA1c, biannual LFTs Yearly creatinine, electrolytes, microalbuminuria, cholesterol <u>Referrals:</u> Pulmonary rehabilitation Physical Therapy DEXA scan every 2 years Yearly eye exam <u>Patient Education:</u> High-risk foot conditions, foot care, foot wear Osteoarthritis COPD medication and delivery system training Diabetes Mellitus
8 AM	Eat Breakfast HCTZ 12.5 mg Lisinopril 40mg Glyburide 10 mg ECASA 81 mg Metformin 850mg Naproxen 250mg Omeprazole 20mg MVI Calcium + Vit D 500mg	2.4gm Na, 90mm K, Adequate Mg, ↓ cholesterol & saturated fat, medical nutrition therapy for diabetes, DASH		
12 PM	Eat Lunch Ipratropium MDI Calcium+ Vit D 500 mg	Diet as above		
5 PM	Eat Dinner	Diet as above		
7 PM	Ipratropium MDI Metformin 850mg Naproxen 250mg Calcium 500mg Lovastatin 40mg	Total Monthly Medication Costs: $ 408		
11 PM	Ipratropium MDI			

Potential Interactions Resulting from Adherence to Multiple Guidelines

	Hypertension	Diabetes	Osteoarthritis	Osteoporosis	COPD
Her meds	HCTZ ACE inhibitor	Sulfonylurea, Metformin, ASA, HMG CoA reductase	NSAID Proton Pump inhibitor	Vit D, Calcium, Bisphosphonates	Albuterol Ipra-tropium
Med-Disease inter-actions	**Diabetes:** 1) Diuretics ↑ glucose & lipids		**HTN:** 1) NSAIDS + COX 2 ↑ BP 2) NSAIDS +HTN ↑ renal risk, 3) COX-2 s and HTN/CAD/ CHF/ CKD interaction?		
Med-Med inter-actions	**Diabetes Meds:** HCTZ may ↓effectiveness of glyburide. **HTN Meds:** HCTZ + ACE may ↓ BP.	**Osteoarthritis Meds:** 1) NSAIDS + ASA ↑ risk of bleeding **Diabetes Medications:** 2) Glyburide and ASA : ↑ Hypoglycemia 3) Aspirin may ↓ effectiveness of lisinopril.	**Diabetes M eds:** 1) NSAIDS+A SA ↑ bleeding risk **HTN Meds:** 2) NSAIDS ↓ diuretic efficacy 3) Rofecoxib may ↓ efficacy of HCTZ & lisinopril	**Diabetes Meds:** 1) Calcium may ↓ efficacy of ASA 2) ASA + Alendronate may lead to GI upset. **Osteoporosis Meds:** 3) Calcium may ↓ serum alendronate	
Med-Food inter-actions		1) Glyburide + ETOH: low sugar, flushing, ↑RR, ↑HR 2) Aspirin + ETOH: ↑ risk of GI bleed 3) Metformin+ ETOH: Extreme weakness, ↑RR 4) Atorvastatin + GF Juice: Muscle weakness, pain 5) Metformin + Food: Decreases amount absorbed		4) Calcium + Oxalic acid (spinach, rhubarb), Phytic (bran & whole cereals) may ↓ Calcium 5) Alendronate + calcium: 2 hours apart from food with calcium and on empty stomach 6) Avoid OJ on alendronate	

Presentation of Disease Patterns

%	ART	CHD	CLRT	DM	CVA
28	X	-	-	-	-
25	-	-	-	-	-
7	X	-	X	-	-

Blue = 2 diseases **Brown = 3 diseases** **Red = 4 diseases**

Prevalence of Disease Patterns, Women Age ≥65

% (95%CI)	ART	CHD	CLRT	DM	CVA
27.9 (25.2-30.6)	X	-	-	-	-
25.4 (22.8-27.9)	-	-	-	-	-
7.3 (5.8-8.8)	X	-	X	-	-
5.4 (4.4-6.3)	X	-	-	X	-
4.3 (3.0-5.6)	X	X	-	-	-
3.7 (2.8-4.6)	-	-	X	-	-
3.0 (2.1-3.9)	-	X	-	-	-
3.0 (2.2-3.8)	-	-	-	X	-
2.3 (1.4-3.2)	X	X	-	X	-
2.3 (1.5-3.1)	X	-	-	-	X
1.9 (1.2-2.6)	X	X	X	-	-
1.9 (1.0-2.8)	X	-	X	X	-
1.3 (0.8-1.8)	-	-	-	-	X
0.98 (0.32-1.7)	X	X	X	X	-
0.82 (0.39-1.3)	X	X	X	-	X
0.75 (0.17-1.3)	-	X	X	-	-
0.70 (0.21-1.2)	X	-	X	-	X
0.69 (0.24-1.2)	-	X	-	X	-
0.63 (0.19-1.1)	X	X	-	X	X
0.62 (0.31-0.92)	X	X	-	-	X
0.50 (0.15-0.86)	X	-	-	X	X
0.50 (0.16-0.84)	-	-	X	X	-

Blue = 2 diseases

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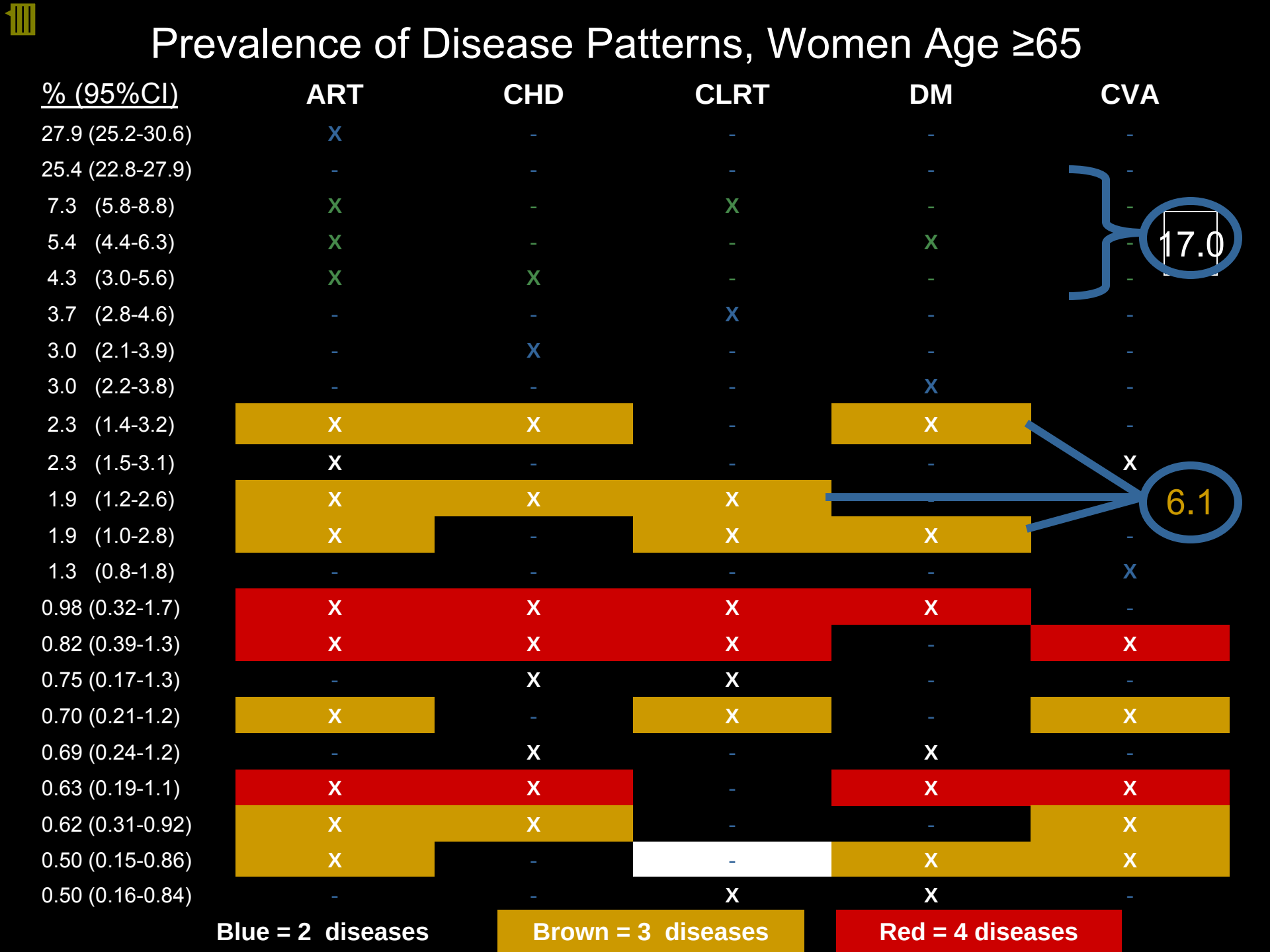
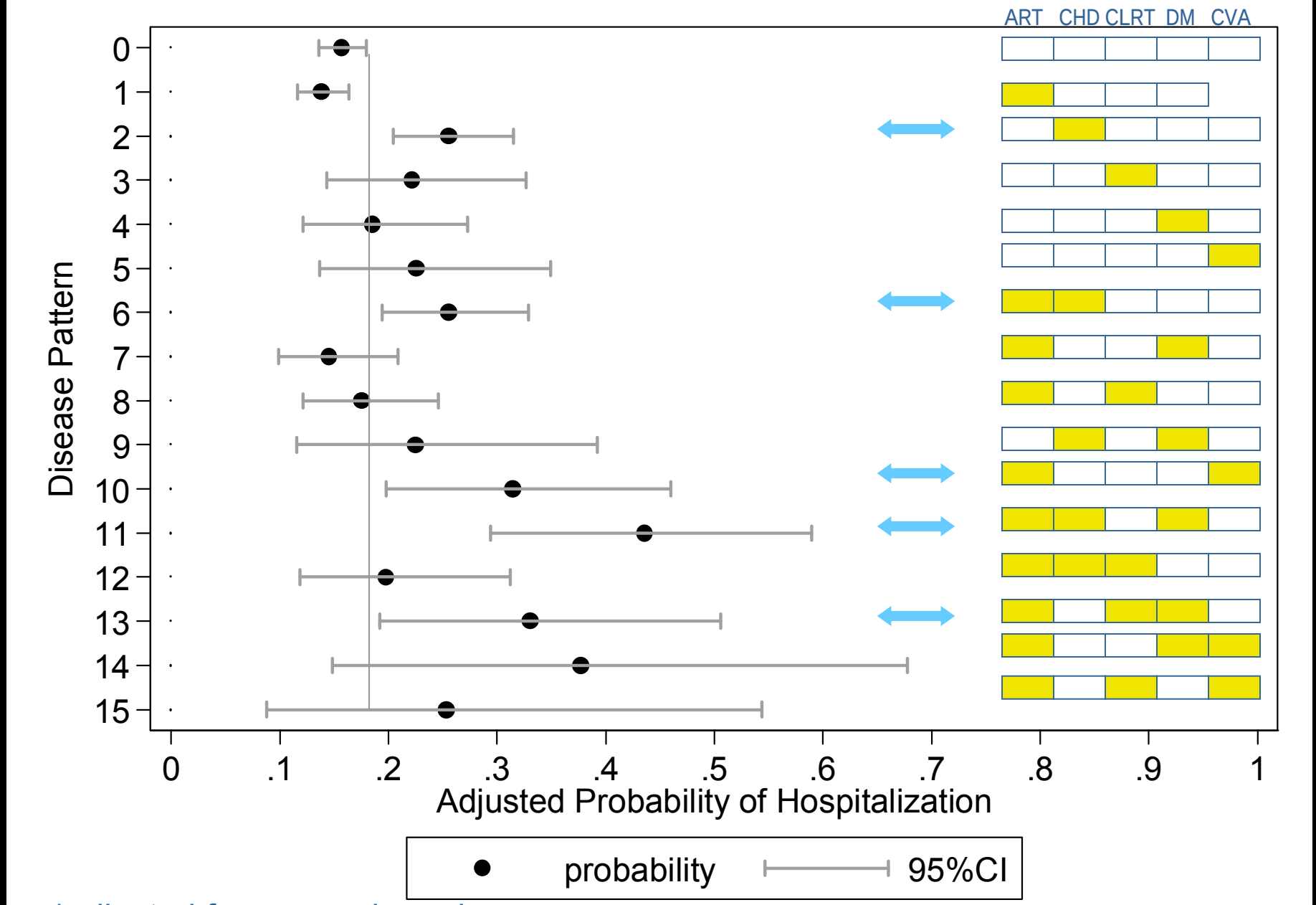
Prevalence of Disease Patterns, Women Age ≥65





*adjusted for age and gender

What is High Quality Chronic Care?

- Accessible
- Continuous/Longitudinal
- Multidisciplinary
- Coordinated and seamless
- Encourages “activated” patient (self management skills and education)
- Engages patients and their families

Source: EH Wagner, “Organizing Care for Patients with Chronic Illness” The Milbank Quarterly 74(4) 1994 and The Chronic Care Model

Approaches to Chronic Care

	Disease Management	**Case Management**
Target Population	Individuals with a specific disease	High risk individuals
Use of evidence-based guidelines/protocols	High reliance	Low to medium reliance
Geographical proximity of contractors & patients	Can be physically distant	Typically local
Provider Integration	Low	Low
Economies of scale	Higher	Lower

Adapted from Chen, "Best Practices in Coordinated Care", Mathematica Policy Research, 2000.
Courtesy of Jennifer Wolff, PhD

"…there is insufficient evidence to conclude that disease management programs can generally reduce overall health spending ... The few studies that report cost savings do so for controlled settings and generally fail to account for all health care costs, including the cost of the intervention. Furthermore, if disease management programs were applied to broader populations … the programs could even raise costs…"

- Cover Letter of 10/2004 CBO Report: "An Analysis of the Literature on Disease Management Programs"

Courtesy of Jennifer Wolff, PhD