

Chronic Care, Chronic Disease Care, and Primary Care: One and the Same, or Different?

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The purpose of this presentation is to explore the concepts of “disease” and “chronic disease” and to show why a more appropriate focus is on a continuum of care (“primary care”) for all people and populations rather than on care for targeted diseases.

Diseases

- are professional constructs
- can be and are artificially created to suit special interests; the sum of deaths attributed to diseases exceeds the number of deaths
- do not exist in isolation from other diseases and are, therefore, not an independent representation of illness
- are but one manifestation of ill health

Sources: Chin. The AIDS Pandemic: the Collision of Epidemiology with Political Correctness. Radcliffe Publishing, 2007. De Maeseneer et al. Primary Health Care as a Strategy for Achieving Equitable Care: a Literature Review Commissioned by the Health Systems Knowledge Network. WHO Health Systems Knowledge Network, 2007. Available at: <http://www.wits.ac.za/chp/kn/De%20Maeseneer%202007%20PHC%20as%20strategy.pdf>. Mangin et al, BMJ 2007; 335:285-7. Murray et al, BMJ 2004; 329:1096-1100. Tinetti & Fried, Am J Med 2004; 116:179-85. Walker et al, Lancet 2007; 369:956-63.

Are diseases really discrete
categorizations of pathology?

Everyone knows that cardiovascular disease is the leading cause of death, but what is it?

It is “hypertensive DISEASES, ischemic heart DISEASES, rheumatic fever, pulmonary heart disease and DISEASES of the pulmonary circulation, OTHER FORMS of heart disease, cerebrovascular DISEASES or stroke, DISEASES of veins, lymphatic vessels, and lymph nodes, OTHER AND UNSPECIFIED DISORDERS OF THE CIRCULATORY SYSTEM, AND congenital MALFORMATIONS, or birth defects of the circulatory system.”

What and for whom is there benefit from calling it a disease?

There appear to be many disorders included under the rubric of diabetes: insulin secretion; insulin transport; zinc-binding to insulin; and pancreatic islet beta cell development.

IS DIABETES A DISEASE? DOES IT MAKE SENSE TO ASSUME THAT GUIDELINES FOR THE IDENTIFICATION AND MANAGEMENT OF DIABETES APPLY TO ALL “DIABETICS”?

If the association between obesity and diabetes is absent in people with low concentrations of persistent organic pollutants, and the association becomes stronger as the concentration of these pollutants rises, is obesity a risk factor for diabetes? Is diabetes a single disease?

If a 90-year-old woman dies two months following hip fracture, did she die from an acute disease or a chronic disease?

What is the “cause of death” likely to be coded as?

If oral contraceptives are protective on epithelial and non-epithelial cervical cancer but not on mucinous cervical cancer, is cervical cancer a single disease?

COPD is a chronic systemic inflammatory syndrome with complex chronic comorbidities. Patients with COPD mainly die of non-respiratory disorders such as cardiovascular disease or cancer.

COPD is a heterogeneous disease process.

Although exacerbations of COPD, especially those defined as being infectious, are quite frequent, the number of randomized placebo-controlled trials of antibiotics is surprisingly small.

When occurring in the same individual, BMI greater than 30, systolic blood pressure greater than 140, and blood cholesterol greater than 250 mg/dL are associated with a six-fold increased odds of Alzheimers disease.

What type of disease is Alzheimers?
What is the disease?

Hypothyroidism is three times more likely in women with rheumatoid arthritis than in the general population. Women with both conditions have a fourfold higher risk of cardiovascular disease than euthyroid women with arthritis, independent of conventional risk factors. Inflammation and autoimmunity are implicated in vulnerability to a wide variety of “chronic” diseases – and they may well be “acute”.

What Is a Chronic Disease?

Generally defined as persistence or recurrence, usually beyond one year

Chronic Disease: Expanded Definition

- Incurable
- Complex “causation”
- Multiple risk factors
- Long latency
- Prolonged course
- Associated with functional impairment or disability

How “chronic” are
chronic diseases?

Persistence of Diagnoses*

	Overall prevalence time 2	Prevalence among those having diagnosis in time 1	
Obesity	69	539	(x 7.8)
Asthma	70	628	(x 9.0)
Autoimmune disorder	18	641	(x 35.6)
Seizures	10	670	(x 67.0)

*per 1000, not adjusted for age

Persistence of Diagnoses*

	Overall prevalence time 2	Prevalence among those having diagnosis in time 1	
UTI	87	350	(x 4.0)
Hypertension	213	879	(x 4.1)
Headache	102	455	(x 4.5)
Lipoid disorders	144	720	(x 5.0)

*per 1000, not adjusted for age

Persistence of Diagnoses*

	Overall prevalence time 2	Prevalence among those having diagnosis in time 1	
URI	357	585	(x 1.6)
Pneumonia, non-bacterial	186	378	(x 2.0)
Sinusitis	231	525	(x 2.3)
Musculoskeletal s/s	190	461	(x 2.4)
Dermatitis, eczema	109	302	(x 2.8)
Abdominal pain	116	326	(x 2.8)
Otitis media	136	452	(x 3.3)

*per 1000, not adjusted for age

Not all chronic diseases are manifested year to year.

Acute diseases sometimes behave as if they were chronic, recurring year to year.

Only a minority of common chronic diseases or conditions are currently candidates for the vast majority of chronic disease management programs.

Acute and chronic conditions share a characteristic: inflammation.

Of all global deaths in 2005, 60% were because of chronic diseases, principally cardiovascular diseases (32%), cancers (13%), and chronic respiratory diseases (7%). Data such as these are used to argue that chronic diseases are of growing and epidemic importance as causes of death.

Question: What is the appropriate target for the percentage of deaths in the world that are attributable to chronic diseases? Isn't there a case to be made that perhaps ALL deaths should be due to chronic diseases, with acute illnesses falling towards zero percentage?

There is more variability in disease manifestations and persistence within diseases than across diseases because:

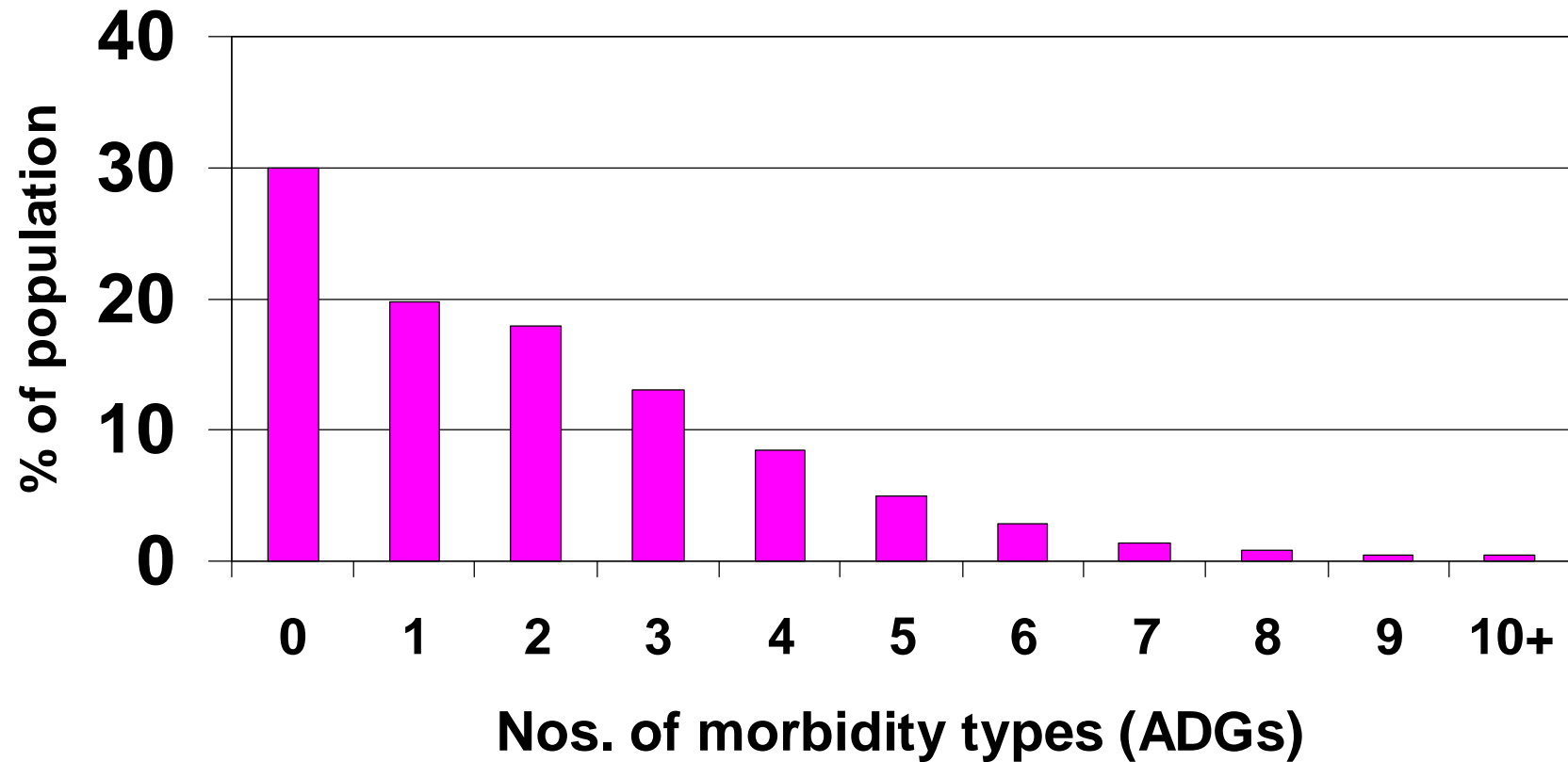
- diseases are not necessarily unique pathophysiological entities
- variability in diagnostic styles and practices
- presence of co-morbidity

Co- and Multi-morbidity (Morbidity Burden)

Co-morbidity is the concurrent existence of one or more unrelated conditions in an individual with any given condition. Multi-morbidity is the co-occurrence of biologically unrelated illnesses.

For convenience and by common terminology, we use co-morbidity to represent both co- and multi-morbidity.

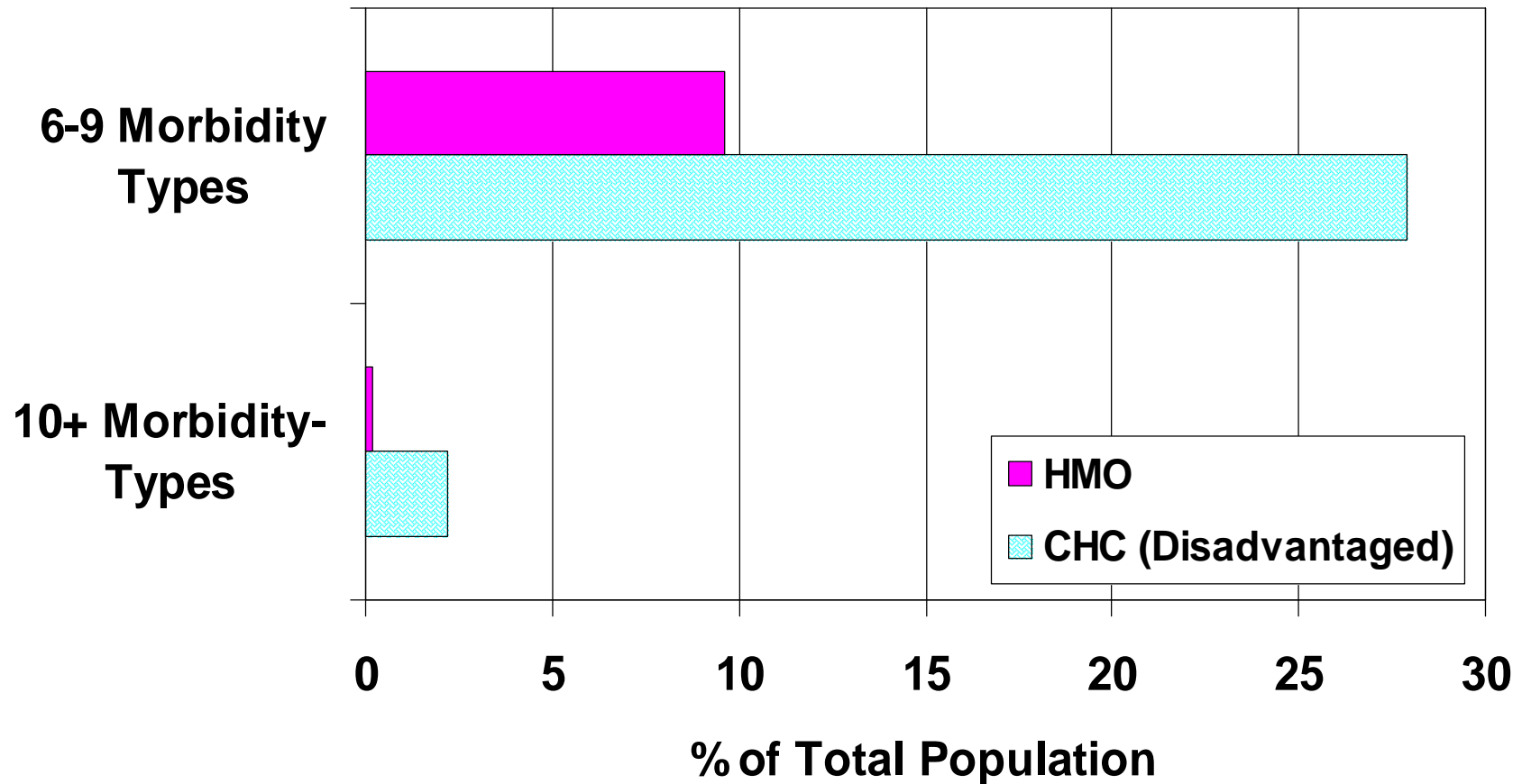
Distribution of Morbidity in a Non-Elderly Insured Population: 1 Year Experience (US)



Source: HMO health plan with 500K members.

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Morbidity Burdens of Socially Disadvantaged and Socially Advantaged People



The high frequency of

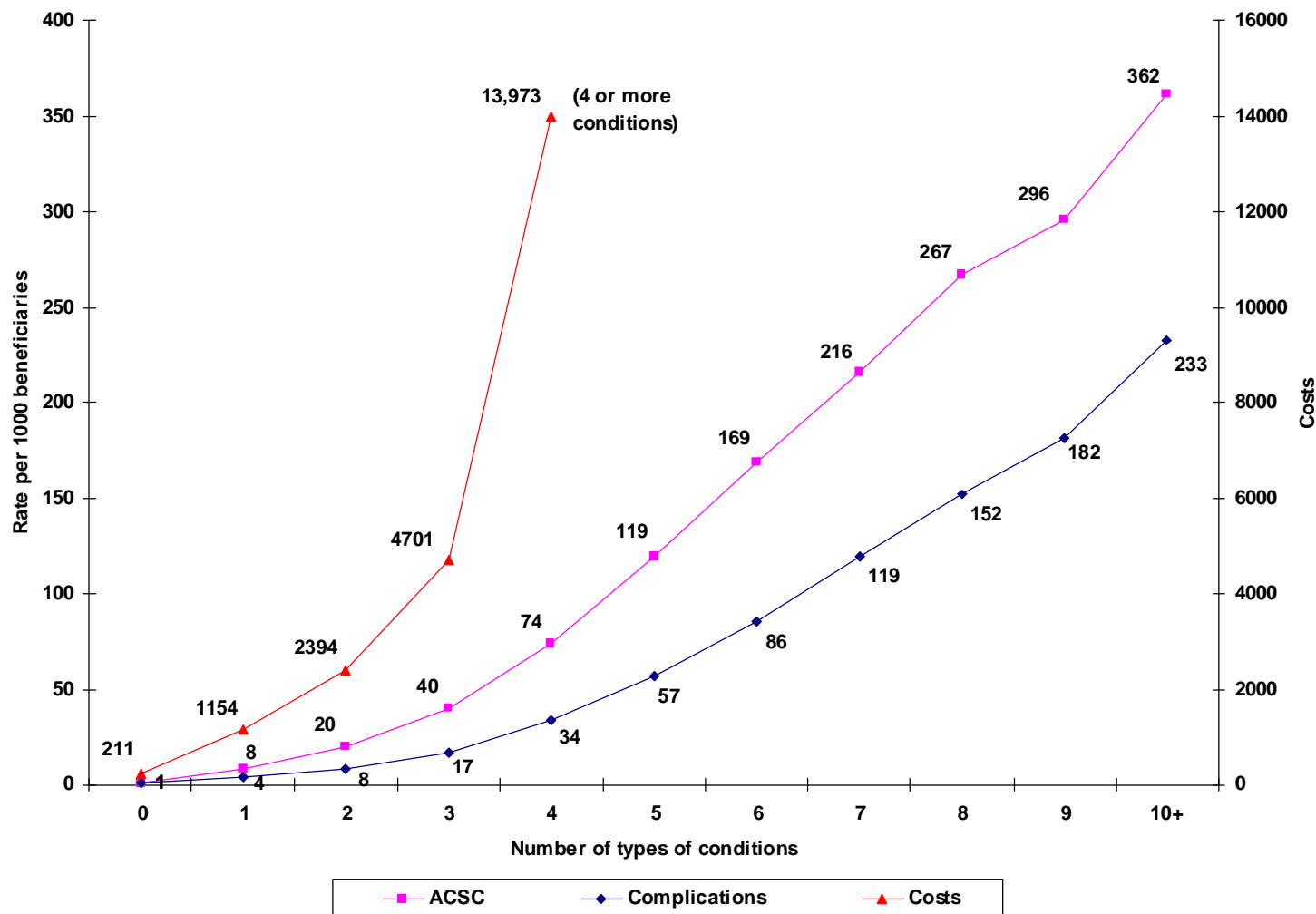
Co-morbidity

Multi-morbidity

Morbidity burden

makes it inappropriate to focus
on single diseases

Co-morbidity, Inpatient Hospitalization, Avoidable Events, and Costs*



Source: Wolff et al, Arch Intern Med 2002; 162:2269-76.

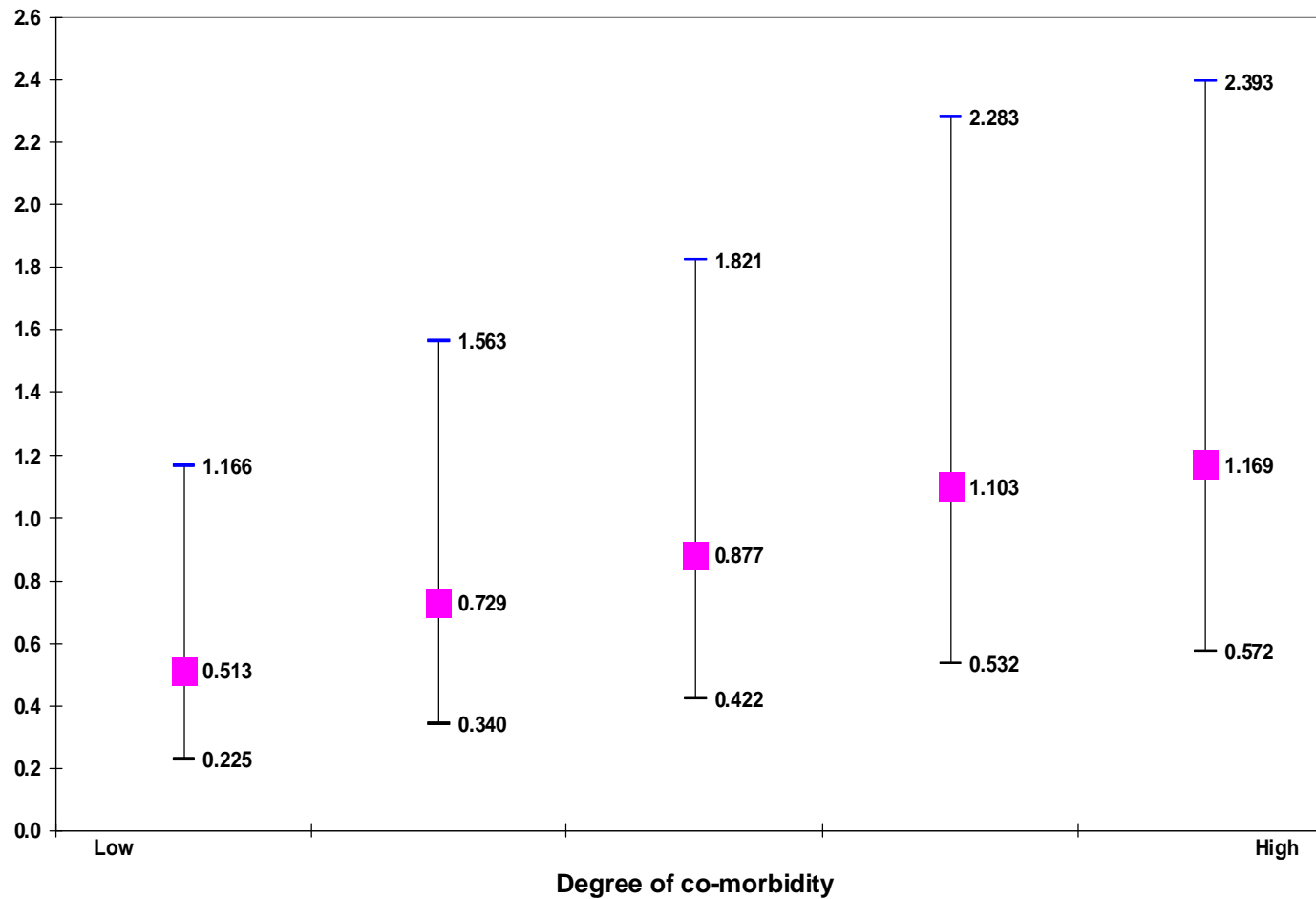
*ages 65+, chronic conditions only

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The greater the morbidity burden,
the greater the persistence of any
given diagnosis.

That is, with high co-morbidity,
even acute diseases are more
likely to persist.

Odds Ratios and Confidence Intervals for Persistence* by Degree of Co-morbidity: Urinary Tract Infection



*controlled for age and sex

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Expected Resource Use (Relative to Adult Population Average) by Level of Co-Morbidity, British Columbia, 1997-98

	None	Low	Medium	High	Very High
Acute conditions only	0.1	0.4	1.2	3.3	9.5
Chronic condition	0.2	0.5	1.3	3.5	9.8
High impact chronic condition	0.2	0.5	1.3	3.6	9.9

Thus, it is co-morbidity, rather than presence or impact of chronic conditions, that generates resource use.

Increase in Treated Prevalence: Selected Conditions, US, People with Private Insurance, 1987-2002

	<u>Treated Prevalence Percentage Change, 1987-2002</u>
Hyperlipidemia	437
(Heart disease	9)
Bone disorders	227
Upper GI problems	169
Cerebrovascular disease	161
Mental problems	136
Diabetes	64
Endocrine disorders	24
Hypertension	17
Bronchitis	13

As thresholds for diagnosing disease are lowered over time, the variability within “diseases” will increase even further, as will the prevalence of multiple simultaneous or sequential diseases.

What is needed is
person-focused care
over time, NOT
disease-focused care.

Top Ten Health Conditions and Impact on Costs

	Medical and Rx costs	Lost productivity costs	Total costs
1	Other cancer	Fatigue	Back/neck pain
2	Back/neck pain	Depression	Depression
3	Coronary heart disease	Back/neck pain	Fatigue
4	Other chronic pain	Sleeping problem	Other chronic pain
5	High cholesterol	Other chronic pain	Sleeping problem
6	Gastroesophageal reflux disease	Arthritis	High cholesterol
7	Diabetes	Hypertension	Arthritis
8	Sleeping problem	Obesity	Hypertension
9	Hypertension	High cholesterol	Obesity
10	Arthritis	Anxiety	Anxiety

When people (not diseases) are the focus of attention

- Outcomes are better
- Side effects are fewer
- Costs are lower
- Population health is greater

What Is the Appropriate Care Model?

- Primary care that meets primary care (not disease-specific) standards*
- Specialty referrals that are appropriate, i.e., evidence-based**
- Specialty care that meets specialty care standards**

*exist

**do not exist

Resource Use, Controlling for Morbidity Burden*

- More DIFFERENT specialists seen: higher total costs, medical costs, diagnostic tests and interventions, and types of medication
- More DIFFERENT generalists seen: higher total costs, medical costs, diagnostic tests and interventions
- More generalists seen (LESS CONTINUITY): more DIFFERENT specialists seen. The effect is independent of the number of generalist visits.

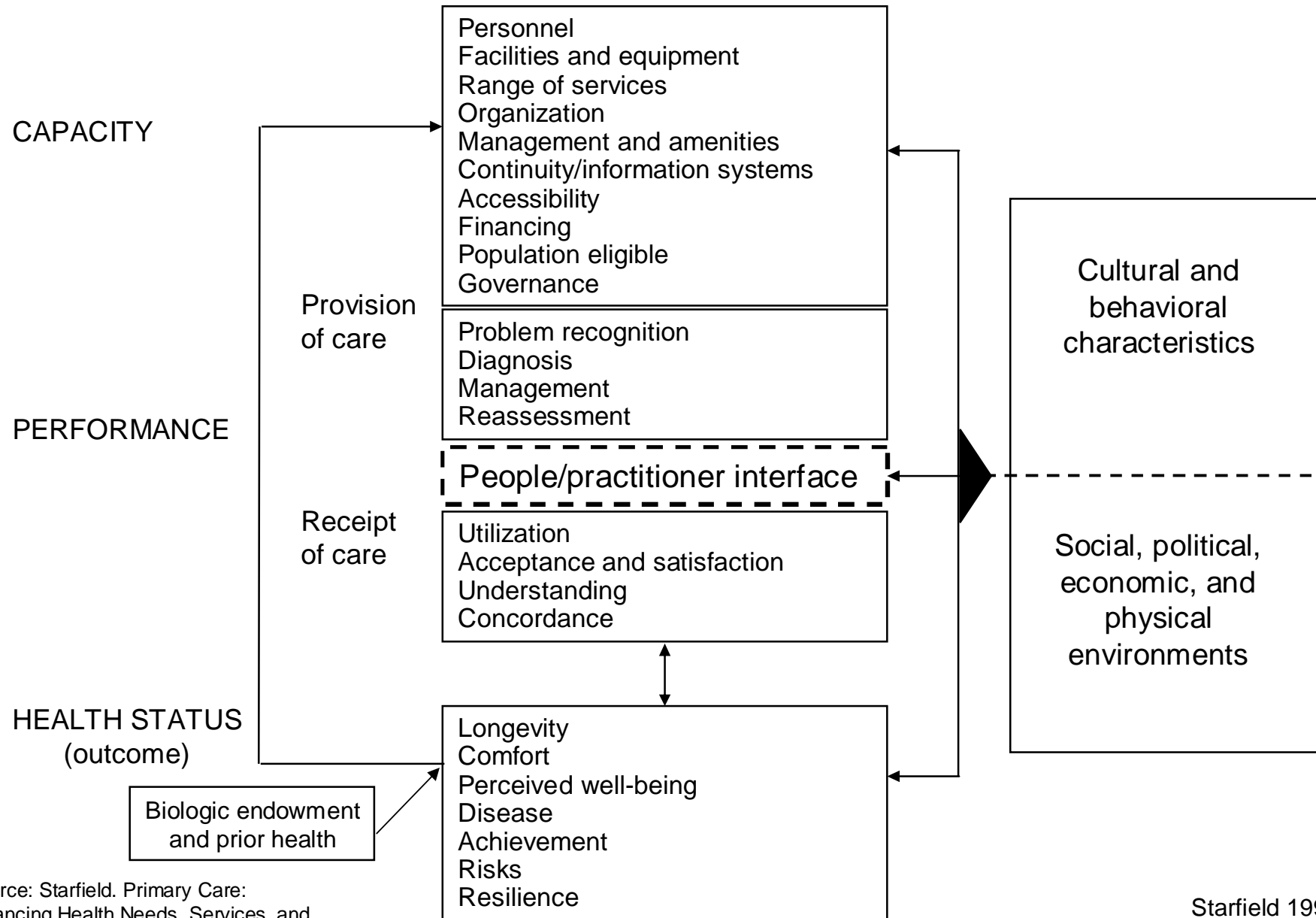
*Using the Johns Hopkins Adjusted Clinical Groups (ACGs)

Source: Starfield et al, Ambulatory specialist use by patients in US health plans: correlates and consequences. Submitted 2008.

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Primary care “works” because it has defined functions that include structural and process features of health services that are known to improve outcomes of care.

The Health Services System



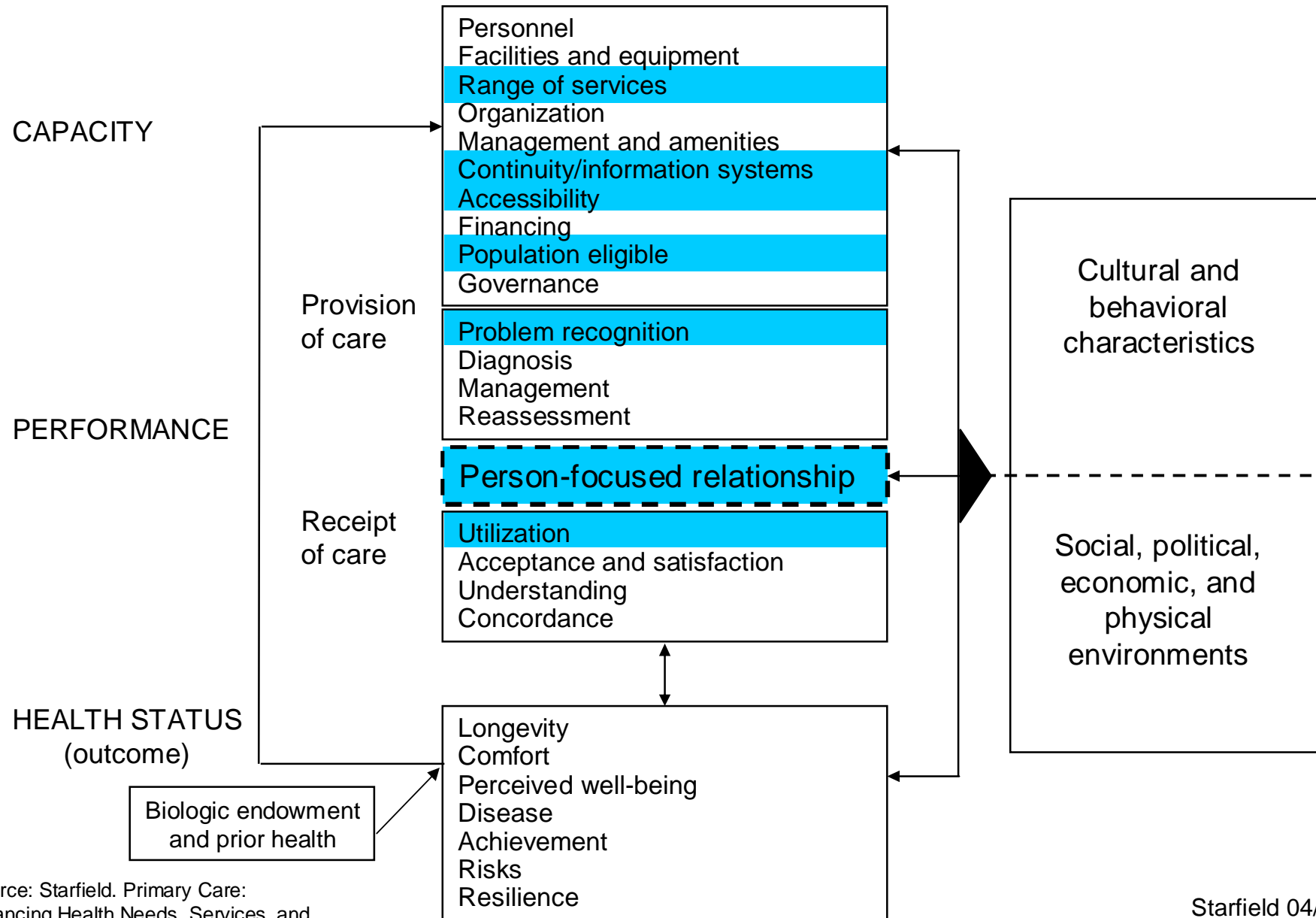
Source: Starfield. Primary Care: Balancing Health Needs, Services, and Technology. Oxford U. Press, 1998.

Starfield 1997
HS 1064 n

Primary Care

First Contact	<ul style="list-style-type: none">• Accessibility• Use by people for each new problem
Longitudinal	<ul style="list-style-type: none">• Relationship between a facility and its population• Use by people over time regardless of the type of problem; person-focused character of provider/patient relationship
Comprehensive	<ul style="list-style-type: none">• Broad range of services• Recognition of situations where services are needed
Coordination	<ul style="list-style-type: none">• Mechanism for achieving continuity• Recognition of problems that require follow-up

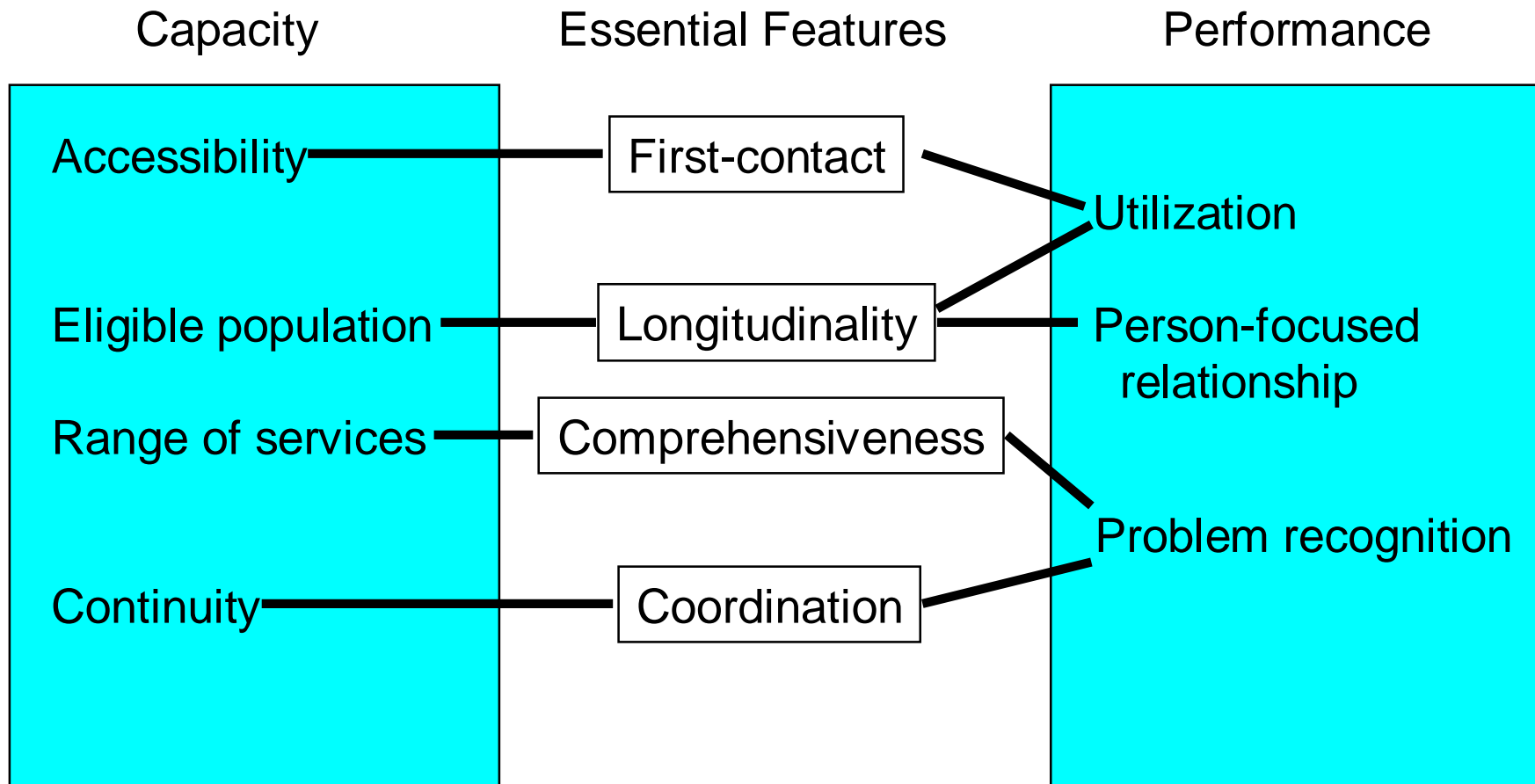
Primary Care Oriented Health Services



Source: Starfield. Primary Care: Balancing Health Needs, Services, and Technology. Oxford U. Press, 1998.

Starfield 04/08
HS 4009 n

Structural and Process Elements of the Essential Features of Primary Care



There is no formal quality assessment approach that includes the critical feature of problem-recognition, despite the evidence that patients are more likely to improve when they and their practitioner agree on what their problem is.

Is chronic care management the same as or pursuant to primary care?

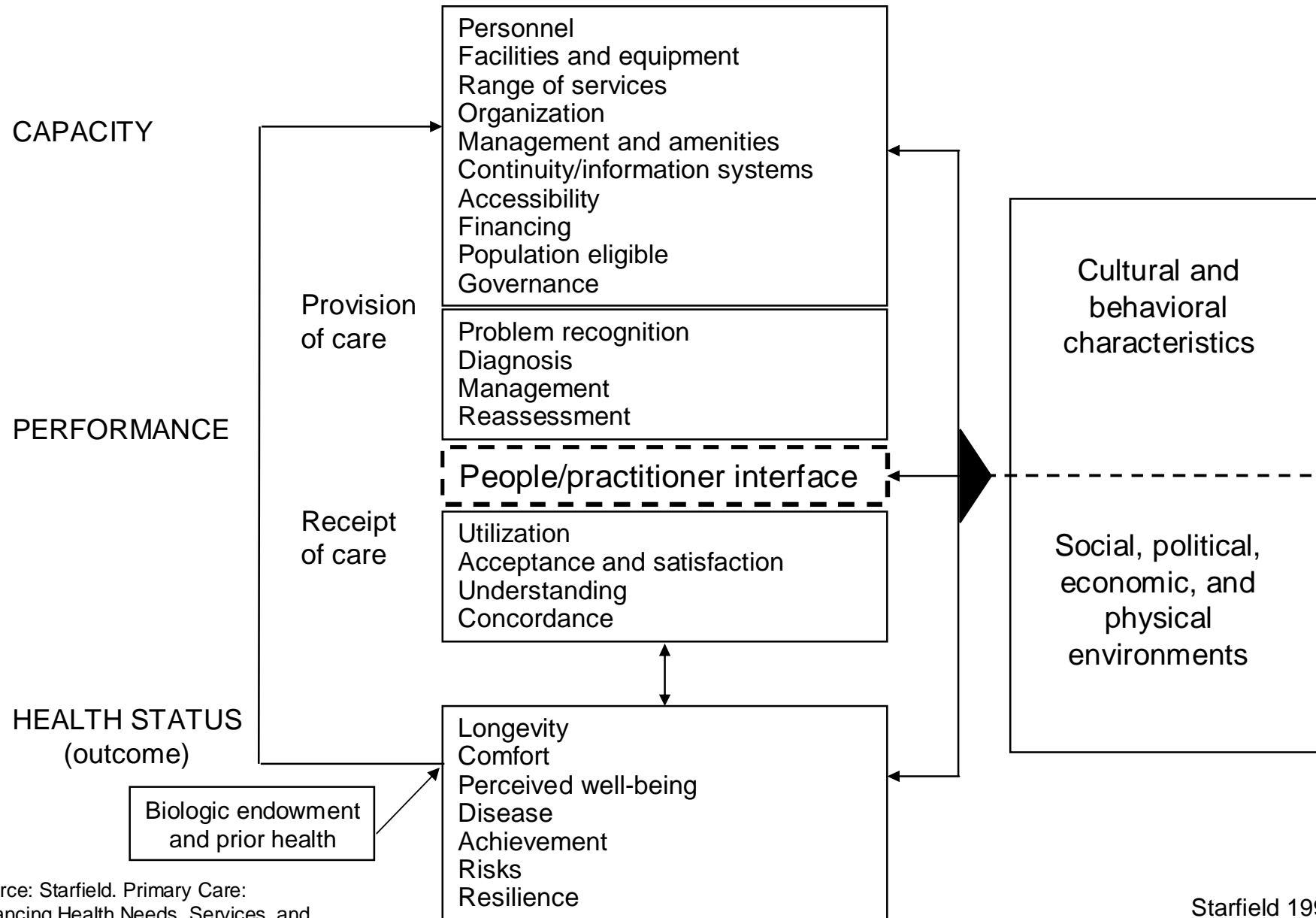
- Person-focused?
- Contributory to at least one of the four main features of primary care?

Is CCM part of primary care or separate from it?

- If the need for it is uncommon (as the data suggest), it is a referral function.
- If the need for it is common, it is a way of enhancing some important and heretofore neglected element of care, possibly problem recognition.

Question: What critical process of care is served by CCM? Problem recognition? If not, what?

The Health Services System



Source: Starfield. Primary Care: Balancing Health Needs, Services, and Technology. Oxford U. Press, 1998.

Starfield 1997
HS 1064 n

Deaths may be attributed to chronic diseases, but people still get sick from acute diseases and acute exacerbations.

Any enhancement of primary care has to deal with this reality.

The global imperative is to organize health systems around strong, patient-centered, i.e., Primary Care.

A disease-by-disease approach will not address the most serious shortfall in achieving the Millennium Development Goals: maternal and child health. It will also worsen global inequities. Those exposed to a variety of interacting influences are vulnerable to many diseases. Eliminating diseases one by one will not materially reduce the chances of others.