What We Know about Primary Care and Its Global Implications

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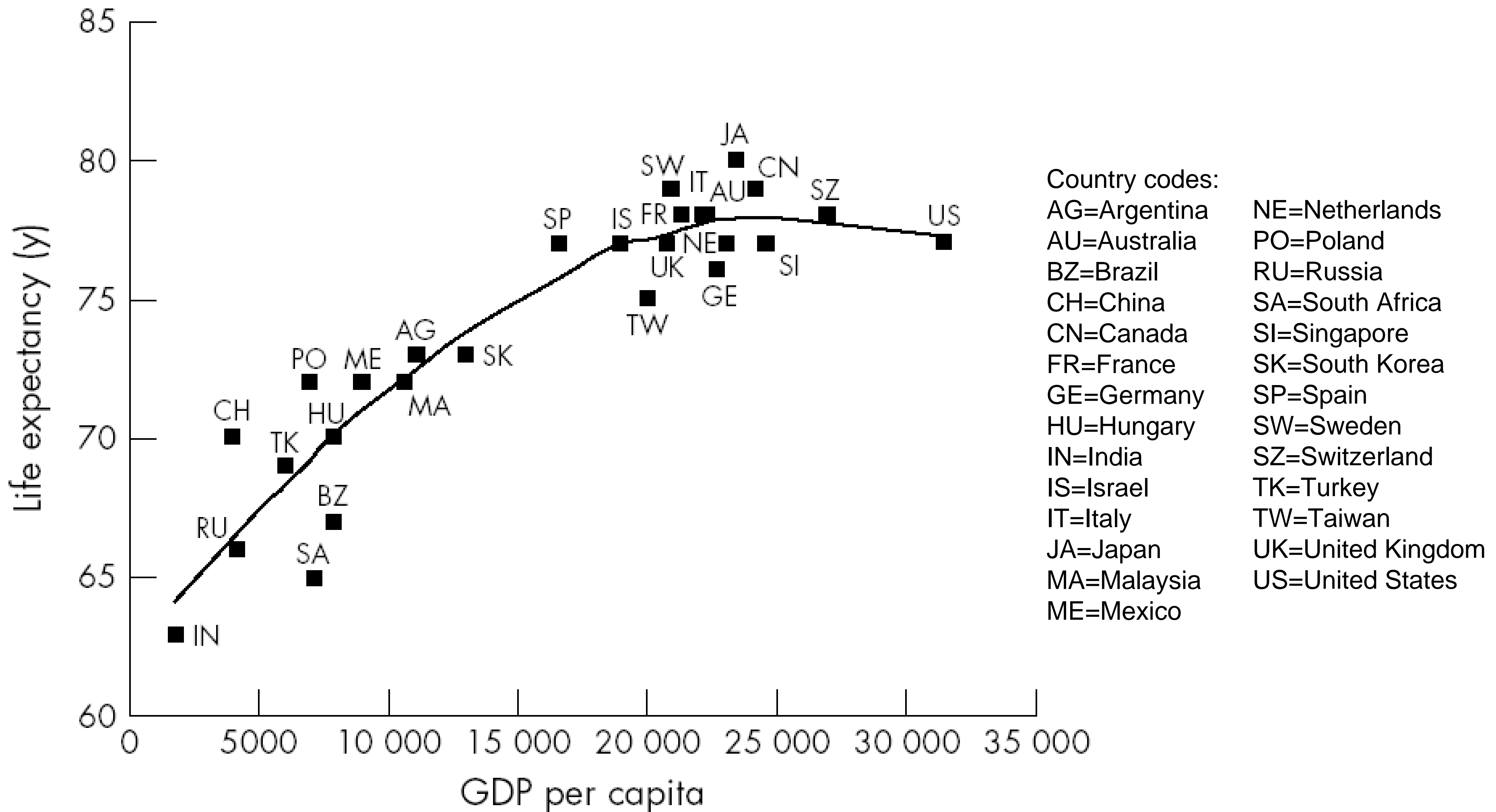
Life Expectancy Compared with GDP per Capita for Selected Countries



Source: Economist Intelligence Unit. Healthcare International. 4th quarter 1999. London, UK: Economist Intelligence Unit, 1999.

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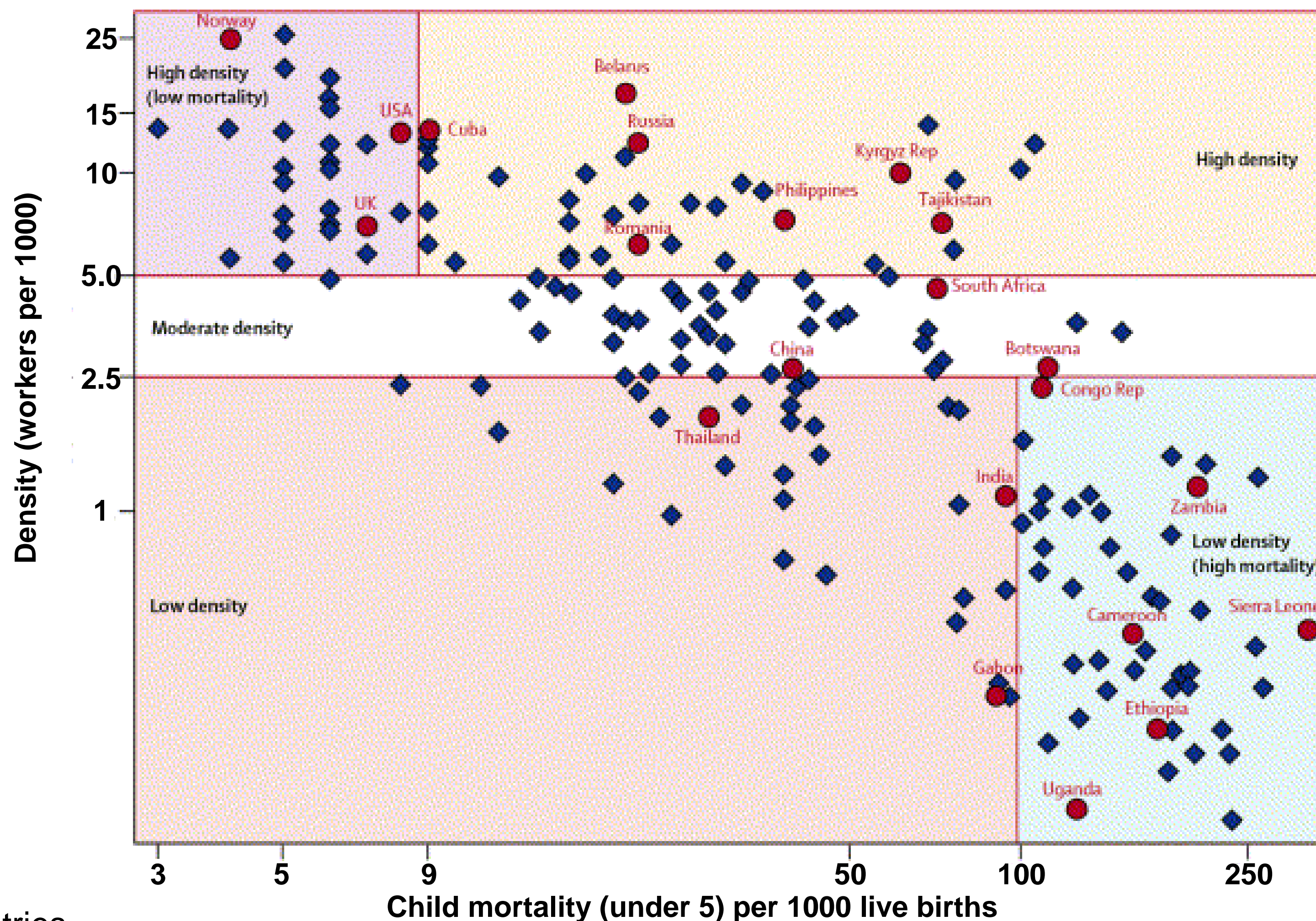
Country* Clusters: Health Professional Supply and Child Survival



*186 countries

Source: Chen et al, Lancet 2004; 364:1984-90.

Primary health care is primary care applied on a population level. As a population strategy, it requires the commitment of governments to develop a population-oriented set of primary care services in the context of other levels and types of services.

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Primary care is the provision of first contact, person-focused, ongoing care over time that meets the health-related needs of people, referring only those too uncommon to maintain competence, and coordinates care when people receive services at other levels of care.

Why Is Primary Care Important?

Better health outcomes

Lower costs

Greater equity in health

Evidence for the benefits of primary care-oriented health systems is robust across a wide variety of types of studies:

- International comparisons
- Population studies within countries
  - across areas with different primary care physician/population ratios
  - studies of people going to different types of practitioners
- Clinical studies
  - of people going to facilities/practitioners differing in adherence to primary care practices

Source: Starfield et al, Milbank Q 2005; 83:457-502.

Primary Care Orientation of Health Systems: Rating Criteria

- Health System Characteristics
  - Type of system
  - Financing
  - Type of primary care practitioner
  - Percent active physicians who are specialists
  - Professional earnings of primary care physicians relative to specialists
  - Cost sharing for primary care services
  - Patient lists
  - Requirements for 24-hour coverage
  - Strength of academic departments of family medicine

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

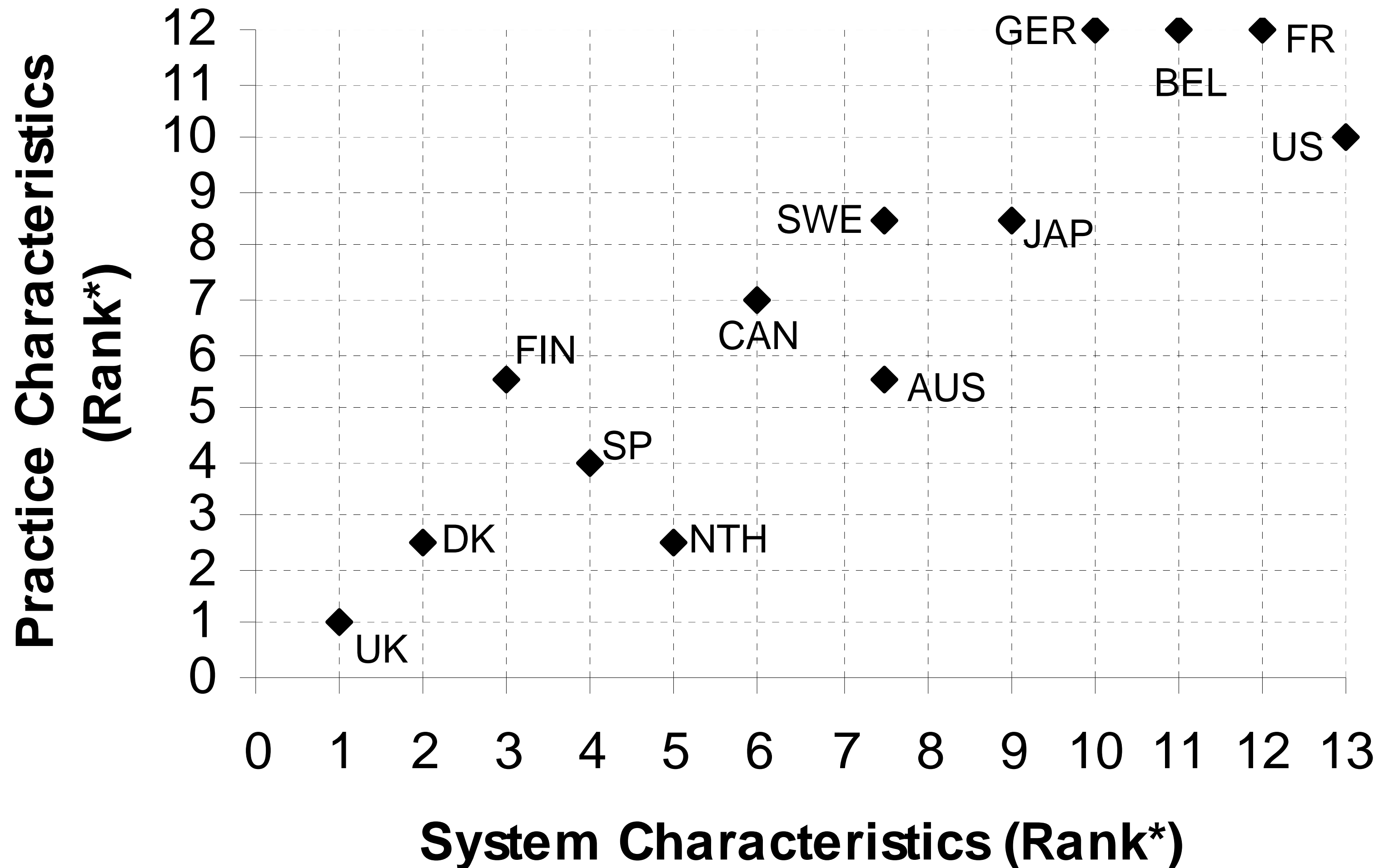
Primary Care Orientation of Health Systems: Rating Criteria

- Practice Characteristics
  - First-contact
  - Person-focus over time
  - Comprehensiveness
  - Coordination
  - Family-centeredness
  - Community orientation

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

- First contact avoids unnecessary specialist visits.
- Person-focus over time avoids disease-focused care (makes care more effective).
- Comprehensiveness avoids referrals for common needs (makes care more efficient).
- Coordination avoids duplication and conflicting interventions (makes care less dangerous).

System (PHC) and Practice (PC) Characteristics Facilitating Primary Care, Early-Mid 1990s



*Best level of health indicator is ranked 1; worst is ranked 13; thus, lower average ranks indicate better performance.

Based on data in Starfield & Shi, Health Policy 2002; 60:201-18.

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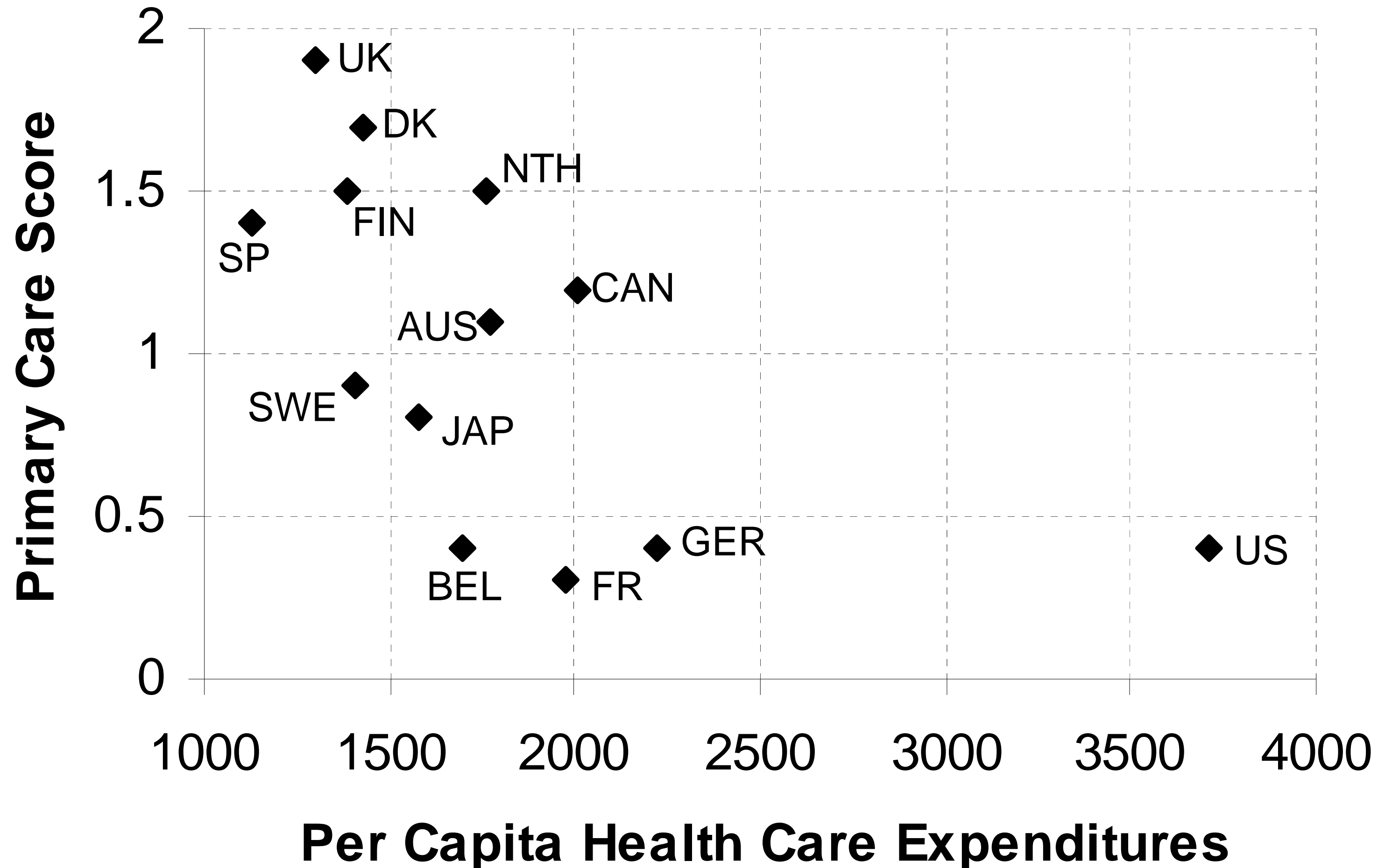
Primary Care Score vs. Health Care Expenditures, 1997



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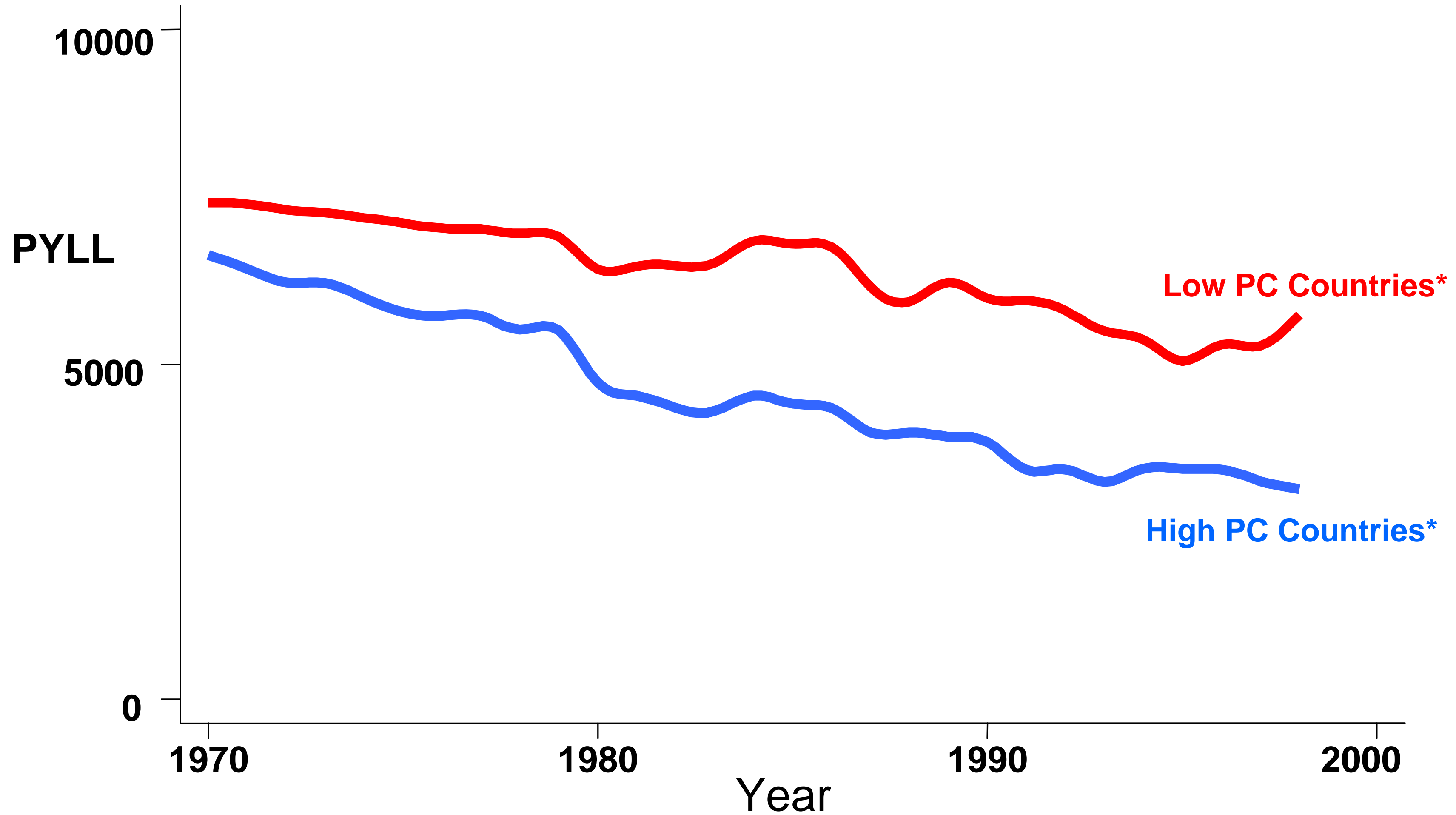
Primary Care Strength and Premature Mortality in 18 OECD Countries



*Predicted PYLL (both genders) estimated by fixed effects, using pooled cross-sectional time series design. Analysis controlled for GDP, percent elderly, doctors/capita, average income (ppp), alcohol and tobacco use. R^2(within)=0.77.

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Source: Macinko et al, Health Serv Res 2003; 38:831-65.

Primary Care Oriented Countries Have

- Fewer low birth weight infants
- Lower infant mortality, especially postneonatal
- Fewer years of life lost due to suicide
- Fewer years of life lost due to “all except external” causes
- Higher life expectancy at all ages except at age 80

Sources: Starfield. Primary Care: Balancing Health Needs, Services, and Technology. Oxford U. Press, 1998. Starfield & Shi, Health Policy 2002; 60:201-18.

Primary health care oriented countries

- Have more equitable resource distributions
- Have health insurance or services that are provided by the government
- Have little or no private health insurance
- Have no or low co-payments for health services
- Are rated as better by their populations
- Have primary care that includes a wider range of services and is family oriented
- Have better health at lower costs

Sources: Starfield and Shi, Health Policy 2002; 60:201-18.
van Doorslaer et al, Health Econ 2004; 13:629-47.
Schoen et al, Health Aff 2005; W5: 509-25.

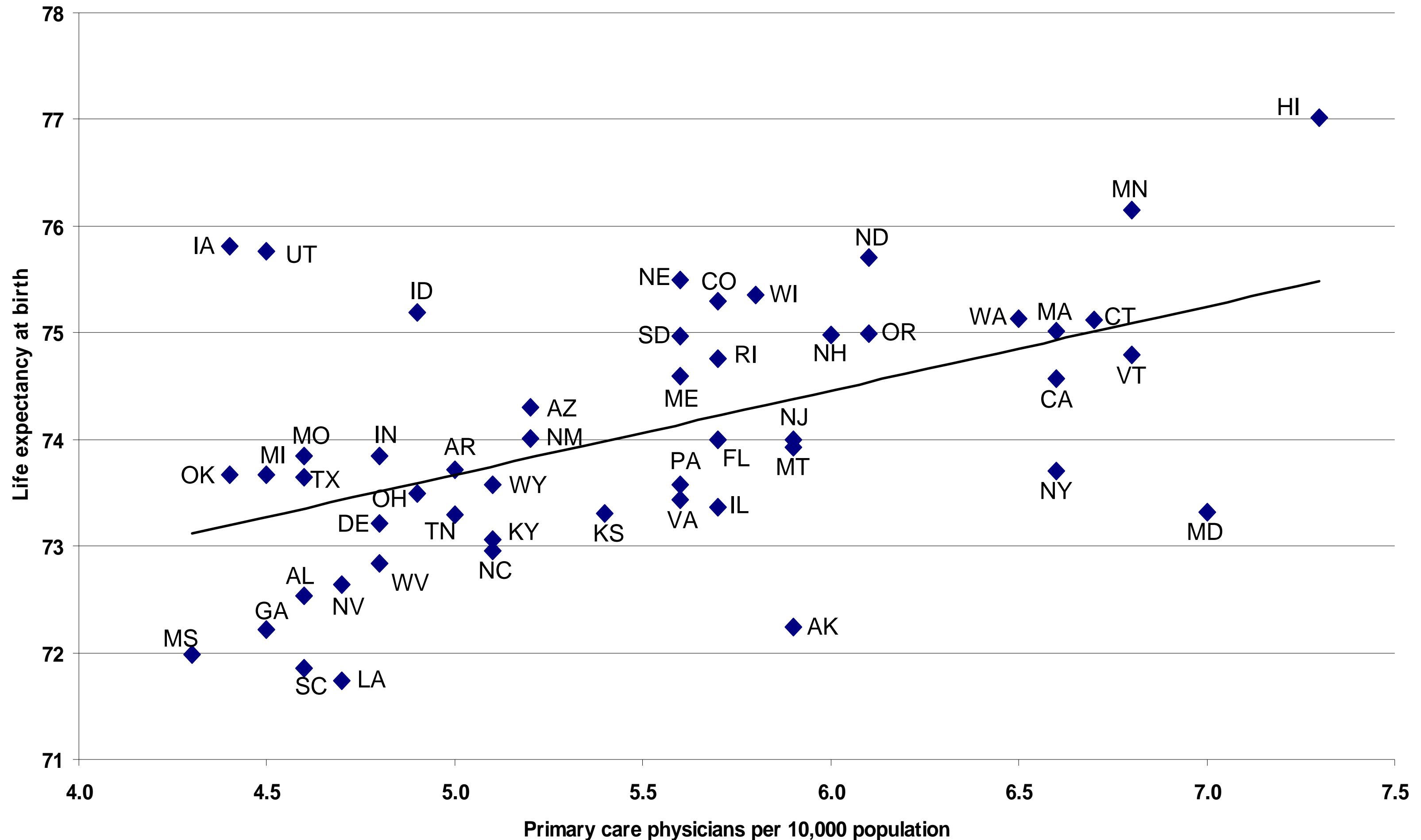
Why Does Primary Care Enhance Effectiveness of Health Services?

- Greater accessibility
- Better person-focused prevention
- Better person-focused quality of clinical care
- Earlier management of problems (avoiding hospitalizations)
- The accumulated benefits of the four features of primary care

Source: Starfield et al, Milbank Q 2005;83:457-502.

Is Primary Care as important within countries as it is among countries?

State Level Analysis: Primary Care and Life Expectancy



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Source: Shi, Int J Health Serv 1994;24:431-58.

Many other studies done WITHIN countries, both industrialized and developing, show that areas with better primary care have better health outcomes, including total mortality rates, heart disease mortality rates, and infant mortality, and earlier detection of cancers such as colorectal cancer, breast cancer, uterine/cervical cancer, and melanoma. The opposite is the case for higher specialist supply, which is associated with worse outcomes.

Sources: Starfield et al, Milbank Q 2005;83:457-502.
Macinko et al, J Ambul Care Manage 2009;32:150-71.

What We Already Know

A primary care oriented system is important for

- Improving health (improving effectiveness)
- Keeping costs manageable (improving efficiency)

Does primary care reduce inequity in health?

In the United States, an increase of 1 primary care doctor is associated with 1.44 fewer deaths per 10,000 population.

The association of primary care with decreased mortality is greater in the African-American population than in the white population.

Source: Shi et al, Soc Sci Med 2005; 61(1):65-75.

A comparison of age-adjusted survival from breast cancer showed that

- Low SES is strongly associated with decreased survival in US, but not Canada.
- The survival advantage in Canada is present in low income areas only.
- The survival advantage in Canada is much larger at ages under 65.
- The Canadian survival advantage is larger for later stage diagnosis. That is, there is almost certainly a medical care benefit to equity in the Canadian context.

Source: Gorey, Breast cancer survival in Canada and the USA: meta-analytic evidence of a Canadian advantage in low-income areas, Int J Epidemiol 2009 forthcoming.

Primary Care and Reduced Inequity in Health: Low and Middle Income Countries

- Studies of primary care intervention areas compared with comparisons areas:
  - Haiti, Bangladesh, India, Liberia, Zaire, Bolivia
- Studies of country-wide experiences (before/after)
  - Thailand, Indonesia

Source: Macinko et al, Soc Sci Med 2007;65:2070-80.

Aspects of Care That Distinguish Conventional Health Care from People-Centred Primary Care

Conventional ambulatory medical care in clinics or outpatient departments	Disease control programmes	People-centred primary care
Focus on illness and cure	Focus on priority diseases	Focus on health needs
Relationship limited to the moment of consultation	Relationship limited to programme implementation	Enduring personal relationship
Episodic curative care	Programme-defined disease control interventions	Comprehensive, continuous and person-centred care
Responsibility limited to effective and safe advice to the patient at the moment of consultation	Responsibility for disease-control targets among the target population	Responsibility for the health of all in the community along the life cycle; responsibility for tackling determinants of ill-health
Users are consumers of the care they purchase	Population groups are targets of disease-control interventions	People are partners in managing their own health and that of their community

Source: World Health Organization. The World Health Report 2008: Primary Health Care – Now More than Ever. Geneva, Switzerland, 2008.

Good Primary Care Requires

- Health system POLICIES conducive to primary care practice: What can we learn from other countries about the relative merits of direct provision of services rather than just financing of services?
- Health services delivery that achieves the important FUNCTIONS of primary care: What can be done to enhance practitioners' recognition of and responsiveness to patients' problems (patient-focus) rather than on the professional priorities of diagnoses (diagnosis-focus)?

Strategy for Change in Health Systems

- Achieving primary care
- Avoiding an excess supply of specialists
- Achieving equity in health
- Addressing co- and multi-morbidity
- Responding to patients' problems
- Coordinating care
- Avoiding adverse effects
- Adapting payment mechanisms
- Developing information systems that serve care functions as well as clinical information
- Primary care-Public health link: role of primary care in disease prevention

Joint Principles of the Patient-centered Medical Home

- Personal physician: ongoing relationship for first contact, continuous, comprehensive care
- Physician directed medical practice
- Whole person oriented
- Coordinated and/or integrated care
- Quality and safety
- Enhanced access
- Added value payment

Source: AAFP/AAP/ACP/AOA. Joint Principles. March 2007.

Proposed PC/MH (Patient-centered Medical Home) Criteria

- Electronic health record
- Teams
- Chronic care guidelines

Question: Do these "enhancements" improve primary care?

This requires evaluation.

Any evaluation of enhancements to clinical primary care must consider the extent to which they better achieve the evidence-based primary care functions:

- First contact for new needs/problems
- Person (*not* disease) focused care (enhanced recognition of people's health problems)
- Breadth of services
- Coordination (enhanced problems/needs recognition over time)

Patient-Centered Care

- No consensus on a definition
- May undervalue community- and population-oriented care because it focuses on responsiveness to individuals
- May be anti-equity because people who are more advantaged typically are able to command more resources.
- HAS MEANING PRIMARILY IN THE CONTEXT OF BETTER MEETING PEOPLES' HEALTH NEEDS OVER TIME

Source: Starfield, Humanity & Society 2009;33:56-73.

When patients and practitioners agree on what the patients' problems are, patients are more likely to improve on follow-up, both as judged by the patient and by the practitioner.

Source: Starfield, Humanity & Society 2009;33:56-73.

The "Chronic Care Model"

Although entitled "chronic care", the proposed mode of remodeling services is intended for the management of common specific chronic diseases of high prevalence and impact. The literature is replete with "evaluations" purporting to show benefit, but the vast majority have focused only on one condition (mostly diabetes), and none have included the full range of components of the model.

Source: Coleman et al, Health Aff 2009;28:75-85

The increased impact of chronic diseases on costs of care is more due to interventions dictated by professional interests than to an inherent increase in pathology.

Source: Dormont & Huber. Causes of Health Expenditure Growth: the Predominance of Changes in Medical Practices over Population Ageing. EURIsCO, Cahier No. 2006-03. Universite Paris Dauphine, 2006.

There are large variations in both costs of care and in frequency of interventions. Areas with high use of resources and greater supply of specialists have NEITHER better quality of care NOR better results from care.

Sources: Fisher et al, Ann Intern Med 2003; Part 1: 138:273-87; Part 2: 138:288-98. Baicker & Chandra, Health Aff 2004; W4:184-97. Wennberg et al, Health Aff 2005; W5:526-43.

Percentage of People Seeing at Least One Specialist in a Year

US	40% of total population; 54% of patients (users)
Canada (Ontario)	31% of population (68% at ages 65 and over)
UK	about 15% of patients (at ages under 65)
Spain	30% of population; 40% of patients (users)

Sources: Peterson S, AAFP (personal communication, January 30, 2007). Jaakkimainen et al. Primary Care in Ontario. ICES Atlas. Toronto, CA: Institute for Clinical Evaluative Sciences, 2006. Sicras-Mainar et al, Eur J Public Health 2007; 17:657-63. Starfield et al, submitted 2008.

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 among patients with high morbidity burdens. The effect is independent of the number of generalist visits. That is, the benefits of primary care are greatest for people with the greatest burden of illness.

*Using the Johns Hopkins Adjusted Clinical Groups (ACGs)

Source: Starfield et al, Ambulatory specialist use by patients in US health plans: correlates and consequences. J Ambul Care Manage 2009 forthcoming.

In British Columbia, every additional 1% increase in continuity of care is associated with a saving of about $81 per year per person with diabetes. A 5% increase would save about 85 million dollars in the care of people with high burdens of morbidity with their diabetes or congestive heart failure. The benefit of continuity of primary care is especially great for people with complex morbidity patterns.

Source: Hollander et al, Healthc Q 2009;12:30-42.

Having a general internist as the PCP is associated with more different specialists seen. Controlling for differences in the degree of morbidity, receiving care from multiple specialists is associated with higher costs, more procedures, and more medications, independent of the number of visits and age of the patient.

Source: Starfield et al, J Ambul Care Manage 2009;32:216-25.

Percent of Patients Reporting Any Error by Number of Doctors Seen in Past Two Years

Country	One doctor	4 or more doctors
Australia	12	37
Canada	15	40
Germany	14	31
New Zealand	14	35
UK	12	28
US	22	49

Source: Schoen et al, Health Affairs 2005; W5: 509-525.

In the United States, half of all outpatient visits to specialist physicians are for the purpose of routine follow-up.

Does this seem like a prudent use of expensive resources, when primary care physicians could and should be responsible for ongoing patient-focused care over time?

Source: Valderas et al, Ann Fam Med 2009;7:104-11.

Family Physicians, General Internists, and Pediatricians

A nationally representative study showed that adults and children with a family physician (rather than a general internist, pediatrician, or sub-specialist) as their regular source of care had lower annual cost of care, made fewer visits, had 25% fewer prescriptions, and reported less difficulty in accessing care, even after controlling for case-mix, demographic characteristics (age, gender, income, race, region, and self-reported health status). Half of the excess is in hospital and ER spending; one-fifth is in physician payments; and one-third is for medications.

Source: Phillips et al, Health Aff 2009;28:567-77.

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Tensions in the Medical Home Community

Team leader?

Disease orientation?

Chronic Care Model?

Primary care characteristics as the main criteria?

Comprehensiveness?

Relationship with retail clinics?

Consistent with population-oriented primary care?

(What is the "population"?)

TransforMED was a national demonstration that tested the Patient-Centered Medical Home (PCMH) in primary care practices. It includes an electronic medical record; electronic communications and visits; disease-management software; e-prescribing, patient portals; and clinical decision making support.

Participants report that these tools, which comprise the NCQA standards for PCMH, neglect the person-focused aspects of primary care, and run the risk of circumscribing the assessment of the quality of the medical home to non-evidence-based structural characteristics. Among criteria that are necessary but excluded, is the comprehensiveness of services, which is critical for person-focused care.

Sources: Loxterkamp & Kazal, Ann Fam Med 2008;6:167-70.
Eidus et al, letter to NCQA, February 2009.

Retail Clinics: Regressive Anachronism or Disruptive Innovation?

- Major source of savings is lower salaries for providers (nurse practitioners and physician assistants).
- Acute illness and immunizations constitute 90% of visits.
- **Less** likely to be located in socially-compromised areas
- Are geared to providing access, NOT primary care
- **Will** compromise detection of epidemic adverse events, e.g., from immunizations
- **Might** be useful when instituted in an integrated health system

Source: Starfield, Arch Intern Med 2009;169:950-1.

Is a Focus on Chronic Disease Compatible with the Patient-Centered Medical Home?

In Pennsylvania, the Governor's Office of Health Care Reform convened several health plans and physician societies in the southeastern part of the state to "institute a PCMH approach to manage the care of chronically ill patients".

To what extent is this approach consistent with the principles of population-oriented primary care and the patient-centered medical home? Who is left out?

The Role of States in Improving Primary Care: The Example of North Carolina

Starting in 1988 with a demonstration project of the PCCM program in a small rural area, the physician/state collaborative program now covers 750,000 people on Medicaid (one-fourth of the state's population) and saves at least $161 million ($200 per person), mostly from reduced emergency department and outpatient visits and lower medication costs.

Key features are a personal physician, a network of community-based "case-managers", and collaborative quality-improvement activities.

Source: Steiner et al, Ann Fam Med 2008;6:361-7.

Evaluations should be part of all proposed innovations.

Evaluations should address the achievement of primary care functions.

Ongoing assessments should elucidate variations in care with

- variations in use of secondary care
- variations in type of payment
- a focus on patient in addition to or instead of a focus on diseases