



Data for Evaluating Primary Health Care in Low and Middle Income Countries

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Overview

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- What do we already know?
- What aspects of primary health care do we want to measure?
- What types/sources of data are currently available?
- Some proposed measures and data sources for comparing the performance of primary health care services
- Next Steps

Primary Health Care and Health

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- High-income countries with comprehensive primary care approaches to health service delivery (as compared with those who do not) tend to
 - ▣ Have more equitable resource distributions
 - ▣ Require 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

PHC and Health in Low- and Middle-income Countries

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Study design	# peer-reviewed studies (n=36)*	PHC effective?
Experimental study	0	n/a
Quasi-experiment/plausibility	4	4/4
Prospective study with control	2	1/2
Pre/post)cross-section w/control	16	14/16
Case-control	5	4/5
Studies w/o control/comparison	9	8/9
Main outcome studied		
Infant or under-five mortality	28	23/28
Other (child)	1	1/1
Other (adult)	7	7/7

Problems with the existing literature

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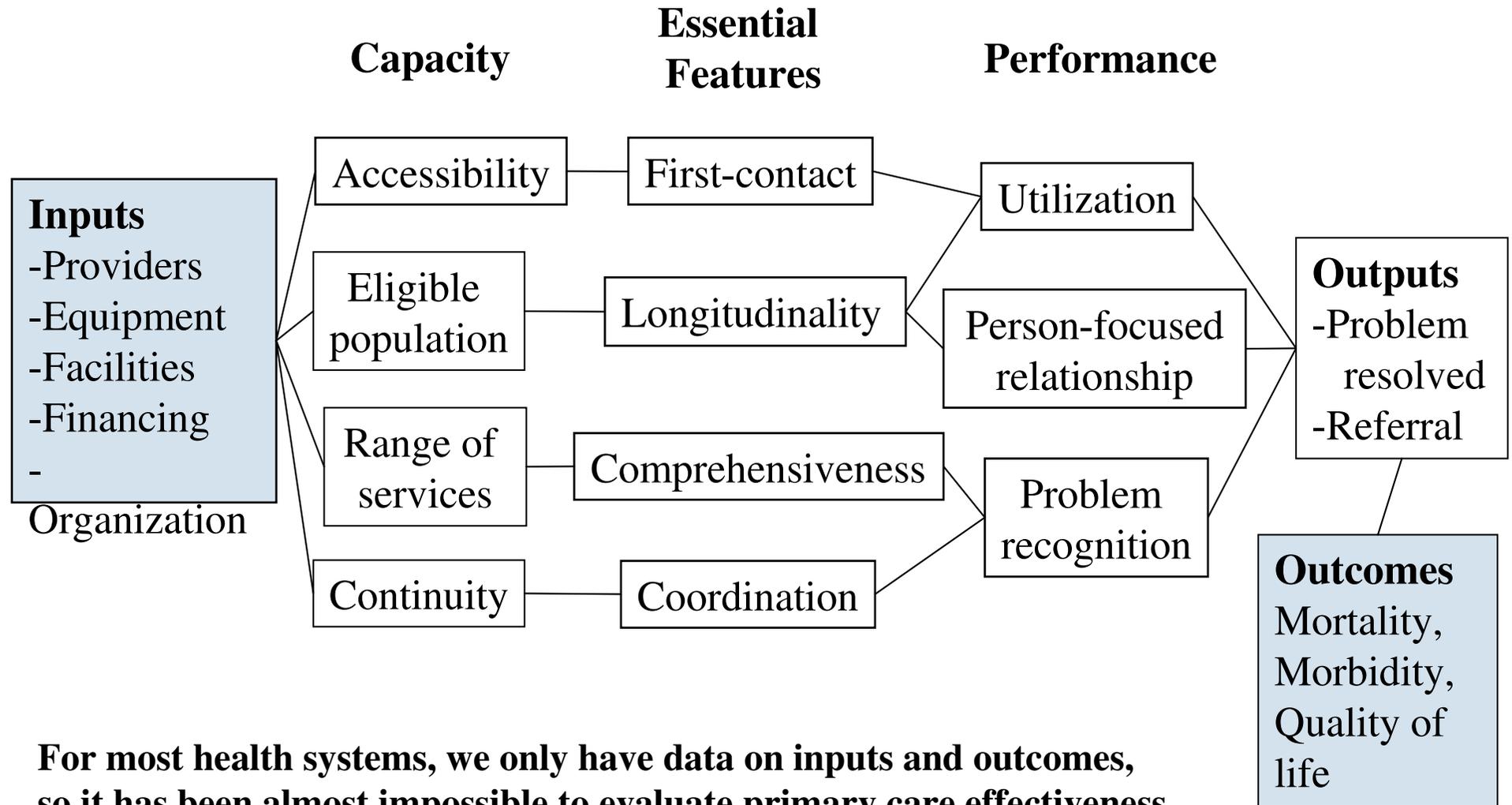
- Primary health care (in low- and middle-income countries) has only rarely been evaluated in a consistent and reproducible way.
 - ▣ PHC “exposure” = residence within a geographic area in which the program or project was implemented (in all but 3 studies)
 - ▣ PHC “treatment” varied :
 - presence of a village health worker in a community
 - use of specific health services
 - presence of integrated network of health and social services in the community.
- Most studies suffered from considerable methodological weaknesses (especially controls for individual or community-level confounders)
- It is difficult to abstract many lessons about how and where PHC should be improved.

What do we really want to know about PHC?

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- Structure
 - ▣ Inputs (health professionals, facilities, equipment)
 - ▣ Organization, financing, policy environment
- Processes
 - ▣ Attainment of PHC features (first contact access, longitudinality, comprehensiveness, coordination, family/community orientation)
 - ▣ Technical quality of care
- Outputs
 - ▣ Problems resolved, prevention provided, referrals made
- Outcomes
 - ▣ PHC-sensitive indicators (for those actually exposed to PHC)

Essential Features of Primary Care



For most health systems, we only have data on inputs and outcomes, so it has been almost impossible to evaluate primary care effectiveness.

Where should we look for data on PHC in low- and middle-income countries?

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- Descriptive data on health system organization, financing (WHO, World Bank, others)
- Cross-sectional Population Surveys
 - ▣ DHS, LSMS, world health surveys
- Hospital or other claims or reimbursement data
- Unique data sources
 - ▣ Primary care-specific studies (e.g. NAMCS)
 - ▣ Cohorts (not primary care-specific)
 - ▣ Specific PHC evaluations

WHO Global Atlas of the Health Workforce- Disaggregated Data, 2006



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<http://www.who.int/globalatlas/docs/HRH/HTML/Dftn.htm>

1. **Physicians (Includes generalists and specialists)**
2. **Nursing personnel**
3. Midwifery personnel
4. Dentists
5. Dental technicians/assistants
6. Pharmacists
7. Pharmaceutical technicians/assistants I
8. Laboratory scientists
9. Laboratory technicians/assistants
10. Radiographers
11. Traditional medicine practitioners
12. Traditional birth attendants
13. Medical assistants
14. Environmental and **public health workers** (environmental /public health officers/ technicians, sanitarians, hygienists, district health officers, public health inspectors, food inspectors, malaria inspectors, etc.)
15. **Community health workers** (community health & health education officers/workers and aides, family health workers, lady health visitors, health extension package workers, community midwives and etc.)
16. Personal care workers
17. Other health workers Includes dieticians and nutritionists, occupational therapists, and others...including **medical trainees and interns**
18. Health management and support workers

Basic input data needed

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- For most low and middle-income countries, we do not know
 - ▣ The size, composition, and distribution of the primary care workforce
 - how generalists/family physicians is defined based on training, licensure, or function
 - what proportion of total physicians are generalists/family physicians
 - primary care nurses and community health workers
 - ▣ The legal and regulatory framework defining PHC
 - Policies for quality standards, range of services provided

Basic PHC input data still needed

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- Input data requires
 - a standard definition of key primary care indicators
 - encouragement for countries to collect and report on this data (as is currently done for health outcomes)
- There has been some progress in this area, but these are generally not specific to primary care.
 - ▣ See www.healthsystems2020.org
 - ▣ The Health Metrics Network also includes health systems, but this is also not primary care specific
- Perhaps the World Health Report 2008 will provide some new data/insights???

Cross-sectional population surveys

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- May represent a way to get data on processes and outcomes of care while controlling for determinants of health needs
- Two main kinds: DHS and LSMS
- Available for many countries and years, have core set of common questions, a lot of experience using them for many research and evaluative studies

Demographic and Health Surveys

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Source: <http://www.measuredhs.com/>

Accessibility

- Source of family planning and HIV/AIDS knowledge, contraceptives, antenatal care
- Problems accessing care (distance, money, provider, other)

Use of health services

- Place of delivery
- Number and content of antenatal care visits by stage of pregnancy
- Use of services for respiratory infection, fever, diarrhea in children

Health Status and knowledge

- Smoking (adults), respiratory infection, diarrhea, and fever (children)
- Family planning knowledge
- Child immunization status
- Breastfeeding status
- Maternal nutritional status
- Tetanus Toxoid vaccination

Mortality

- Neonatal, post-neonatal, infant, under-5 mortality

Main Limitations

- often only women are interviewed
- chronic disease rarely included
- limited phc-related questions

Living Standards Measurement



Surveys (full health service module)

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- Availability of medicine and equipment
- Staff composition of the health post
- Accessibility (operating hours, geographic, financial, organizational)
- Perceptions of accessibility
- Community participation
- Utilization patterns
- Health (behaviors, illness episodes, accidents)
- Perceptions of quality of care

Source: <http://go.worldbank.org/IPLXWMCNJ0>

Limitations of DHS and LSMS

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- A major difficulty with population surveys such as DHS and LSMS is that they have generally divided providers into public versus private^{*}, but this distinction is also (at times) confounded by the fact that private providers may be more likely to be specialists, rather than primary care providers.
- They also have few variables related to practice features of primary care
- DHS has more data on outcomes, while LSMS more on service use and accessibility

^{*}For an interesting comparison of quality of care between public and private providers in Latin America, See: Waters et al (2007). The role of private providers in treating child diarrhea in Latin America. *Health Economics* (Apr 4)

Example: Brazil PNDS (DHS), 2006

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- PHC provider data is in the form of:
 - Public health service (SUS)
 - health center/post
 - hospital
 - Health services associated with a health insurance plan (convênios/planos)
 - Private health service (serviço particular)
 - Pharmacy (farmácia)
- It is impossible to identify with any certainty if the person has ever consulted with the Family Health Program.
- A similar problem exists for the PNAD Saude (LSMS)

Hospitalization/claims data

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- Rarely available in low/middle income countries
- Not usually representative of the entire population
- Often don't have needed data (education, income, or co-morbidities) in order to adjust for risk
- Even when they exist, without linkage to primary care performance indicators, it is difficult to make the connection between higher rates of ambulatory care sensitive hospitalizations, for example, and specific actions in primary care (is the problem access, quality, compliance, or something outside the health system?)

Good news, Bad news, Good news

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- It is possible to measure the essential features of primary care—from inputs to process to outcomes
- But, these means are rarely if ever used in the most common sources of data used in low- and middle-income countries
- Because of the recent renewal of interest in PHC by the World Health Organization and others, now is the moment to encourage international organizations and countries to invest in better ways to monitor and evaluate primary health care.

PCAT and other ways to measure primary care performance at the population level

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- Primary Care Assessment Tools
 - ▣ Adaptable, fairly simple to use, relatively short, validated and piloted in several countries (Brazil, Canada, Vietnam, Thailand, Spain, USA)
 - ▣ Exists in adult and child, provider, and system versions.
- Primary Care Assessment Surveys
 - ▣ Another alternative, includes components of interpersonal communication and trust
- Parental Perceptions of Primary Care
 - ▣ Ten-item validated instrument captures parental experiences with children's primary care.

Primary Care Provider/Practice Studies

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- Example: National Ambulatory Medical Care Study
 - ▣ National annual survey of office based practice in the US. (total ~3000 MDs)
 - ▣ Depending on the size of their practice, participating physicians contribute anywhere from 20% to 100% of their encounters during the one week study period. (~25,000 visits)
 - ▣ Use to assess how time and resources in primary care are spent, clinical quality of care,
 - ▣ Similar studies exist in New Zealand and Australia
 - ▣ Does anyone know of anything comparable in any middle or low-income country?

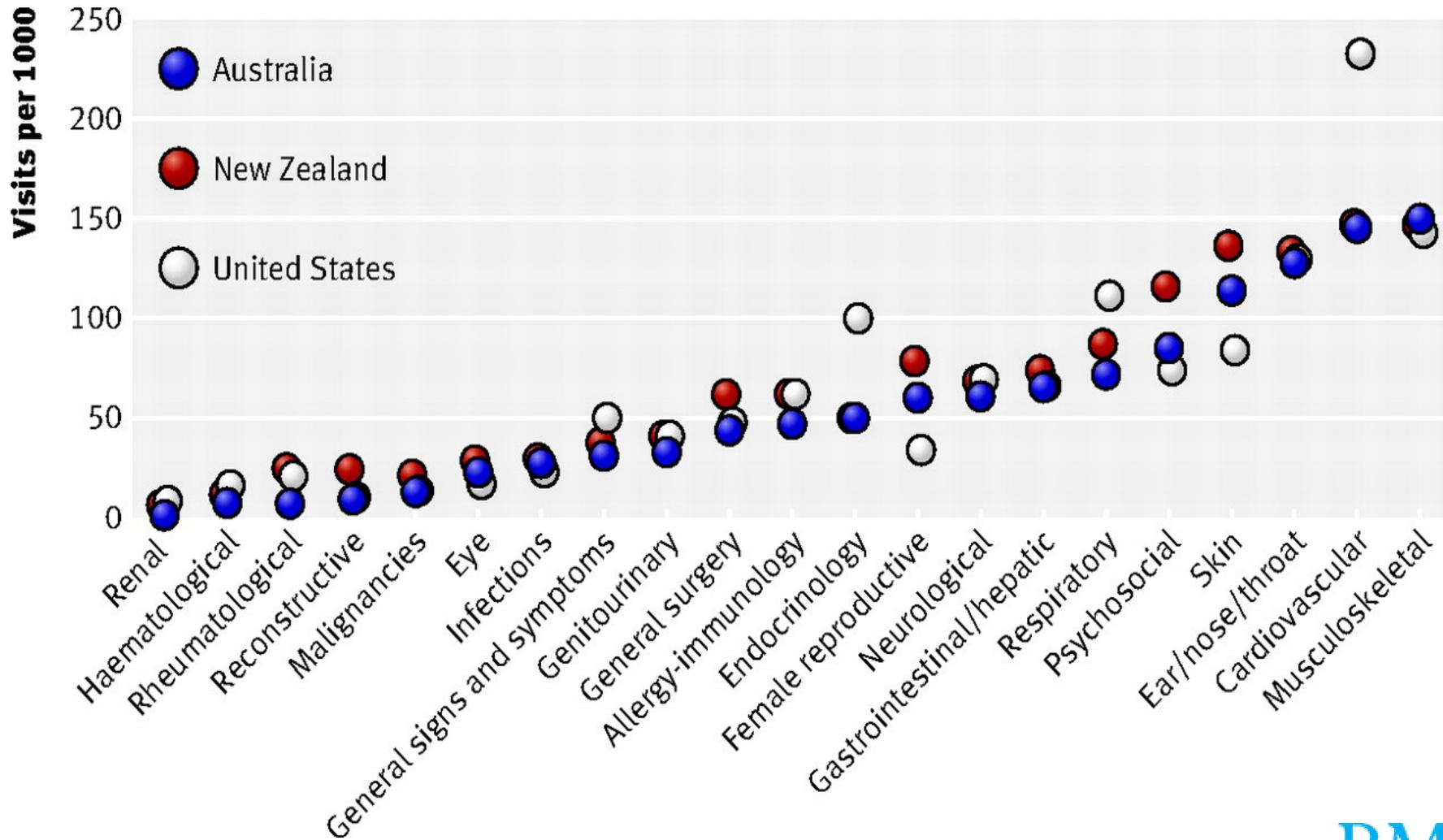
Some questions we can answer with PHC provider/practice studies

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- How do providers actually spend their time?
- Who is referred to specialists and why?
- What types of variations exist among practice types
- Where are gaps in performance?
- How effective have been incentive or training programs on changing practice?

Age standardised frequency of health problems managed in primary care in Australia, New Zealand, and the US: 2001-2

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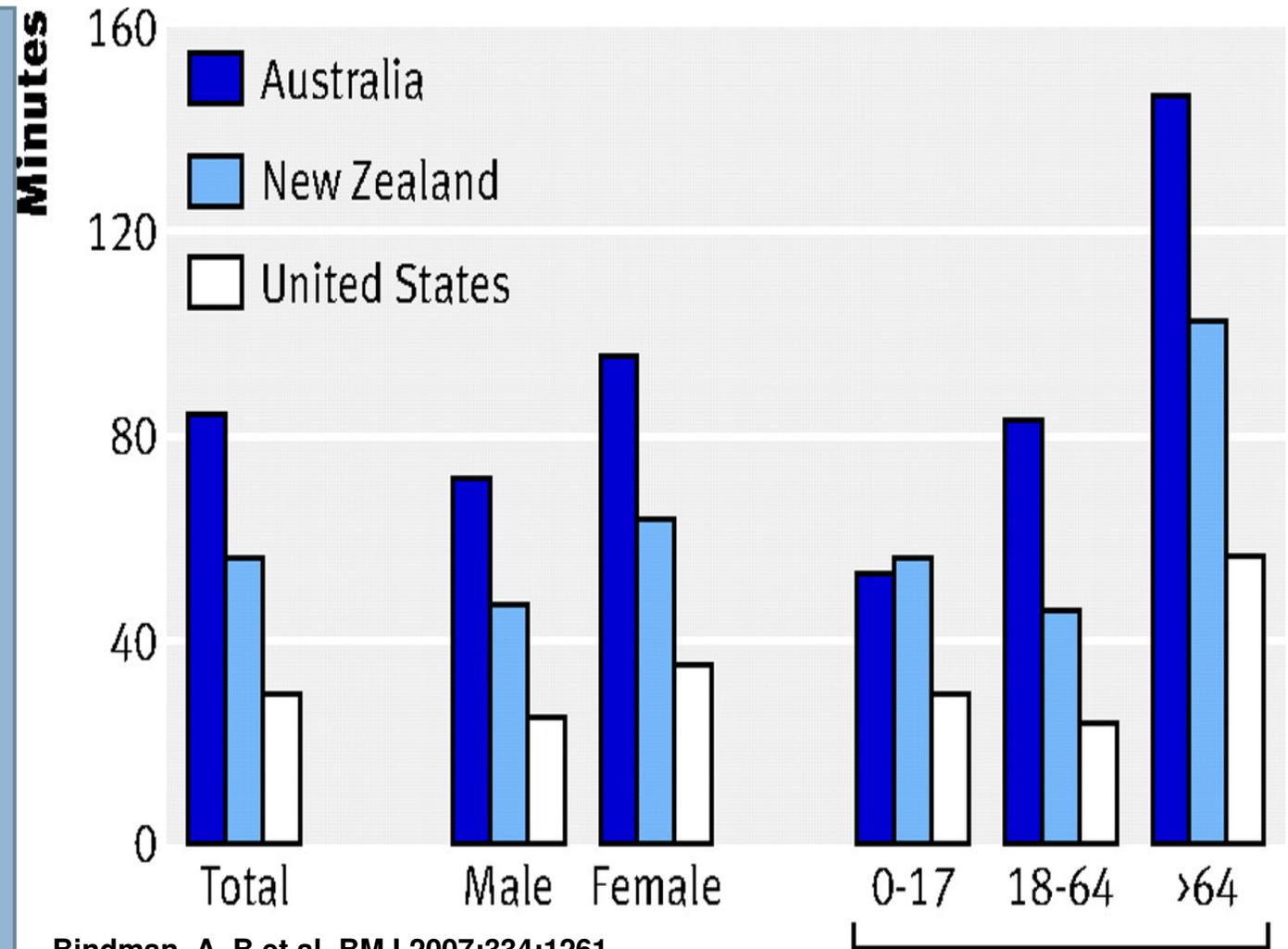


Mean per capita annual exposure to primary care physicians by country and demographic subgroups: 2001-2

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Prevention in primary care settings requires yearly PC exposure of about 40 minutes, plus 20-40 minutes for each chronic condition.

(Yarsnell et al, Am J Public Health 2003; 93 :635-41)



Bindman, A. B et al. BMJ 2007;334:1261

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Next Steps 1

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- Define a basic set of data standards for comparison of PHC systems across countries
 - ▣ Inputs (e.g. definition and number of GPs and other providers working in primary care)
 - ▣ Organization (where and in what conditions do primary care providers practice, e.g. in hospitals or health posts, in teams or as individuals)
 - ▣ Financing mechanisms (e.g. co-pays, provider payments)
 - ▣ Relevant policies (e.g. required services provided in primary care, requirements for training and licensure, defined population)

Next Steps 2

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For existing cross-sectional studies

- ▣ Improve survey questions to better determine exposure to PHC
 - Adapt the concept of a “medical home”
 - Is the PHC provider a person or a place?
 - Type of provider (doctor, nurse, health worker)
 - Range of care provided
 - Length of affiliation with that provider
 - Location/name of provider
- ▣ Facilitate linking of population surveys with other administrative data, e.g. provide geo-coded data on health facilities so “distance to closest primary care provider” becomes an additional treatment variable and provider data can then be linked to potential users.

Next Steps 3

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- Develop a DHS*/LSMS PHC module based on the PCAT tools or another validated means of soliciting user evaluations of PHC features to include:
 - ▣ Identification of usual source of care (medical home)
 - ▣ Accessibility
 - ▣ Continuity of care
 - ▣ Comprehensiveness of care
 - ▣ Coordination/integration of care
 - ▣ Family and community orientation
 - ▣ Interpersonal treatment/communication
- This should also include a facility/provider component (as in the DHS/SPA, but focused on PHC)

Next Steps 4

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- If PHC is an important determinant of health (as the Commission on Social Determinants of Health suggests), then advocate for inclusion of key PHC components in on-going cohort studies
- Invest in primary care-specific surveys (e.g. NAMCS) that assess primary care practice and use them to improve quality
- Use experimental methods to test PHC innovations as they are being rolled out

Can countries afford to do this?

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- Global donors now spend about \$15 billion per year on disease oriented programs that may divert resources away from providing primary care-oriented health services.
 - ▣ Some of these funds could be channeled into building comprehensive PHC. But this will require investments in monitoring and evaluation of PHC efforts.
- Other countries already spend considerable sums on primary care provision,
 - ▣ Could some of these resources could be invested in establishing more effective M&E systems that may help answer the real questions that practitioners and policy makers are asking about PHC and its effectiveness?

Obrigado!

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Perguntas?

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