Health expenditures by disease and age, Sri Lanka 2005: Preliminary findings

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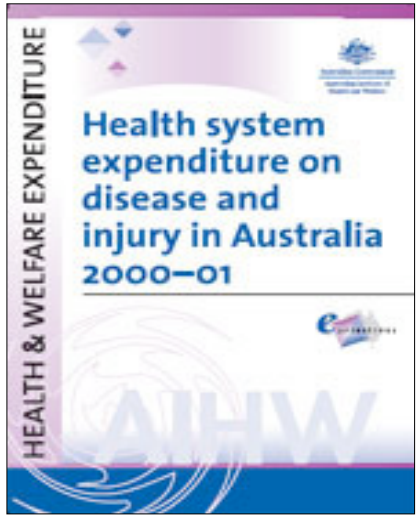
IHP
INSTITUTE FOR HEALTH POLICY

Overview

- Background
- Classifications
- Methods
- Results
- Implications

Background

- Sri Lanka Health Accounts - OECD SHA-based, covering 1990-2005
- Reproductive health accounts 1997, Child Health Accounts 2004
- Inspiration from Australian Disease Accounts Studies 1993-94, 2000-01
- WHO Disease Specific Accounts (DSA) Pilot Project



Disease Specific Accounts

- Analysis of all expenditures by ICD-10 primary cause of illness, age and sex
- Fully distributed, with no focus on single disease
- Linked to main SHA-compatible health accounts
- Year of estimates - 2005

Demographic classifications

Followed AIHW groupings to aid comparison

- Sex
  - female, male
- Age groups
  - 0-4, 5-14, 15-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75-84, 85+

Disease groupings

- ICD-10 is primary classification for data analysis, but results grouped into larger categories
- Disease categories for presentation based on AIHW DSA/BOD classification, with modifications for Sri Lankan priorities and adjustments for disease patterns

- A Infectious & Parasitic Diseases
- B Acute Respiratory Infections
- C Maternal Conditions
- D Neonatal Causes
- E Nutritional Deficiencies
- F Malignant Neoplasms
- G Benign Neoplasms
- H Diabetes Mellitus
- I Endocrine & Metabolic Disorders
- J Mental Disorders
- K Nervous System & Sense Organ Disorders
- L Cardiovascular Disease
- M Chronic Respiratory Disease
- N Diseases of the Digestive System
- O Genitourinary Diseases
- P Skin Diseases
- Q Musculoskeletal Disorders
- R Congenital Anomalies
- S Oral Health
- T Injuries
- V Other Anaemias and Blood/Immune Disorders
- Y Unspecified Abnormal Clinical & Laboratory Findings
- Z Ill-defined conditions & other Contacts with Health Systems

Code	Disease Category	IMMR codes	ICD-10 codes
D	**Neonatal Causes**		
1	Birth Trauma & Asphyxia	200, 201	P10-P15, P20-P28
2	Low Birth Weight	199	P05-P07
3	Other Neonatal Causes	198, 202,203	P00-P04, P08, P29, P35-P39, P50-P61, P70-P78, P80-P83, P90-96
E	**Nutritional Deficiencies**		
1	Iron Deficiency Anaemia	084a	D50
2	Protein-Energy Malnutrition	091	E40-E46
3	Other Nutritional Deficiencies	092	E50-E56,E90
F	**Malignant Neoplasms**		
1	Breast Cancer	064	C50
2	Lung Cancer	059	C33-C34
3	Cervix Cancer	065	C53
4	Prostate Cancer	069	C61
5	Other Malignant Neoplasms	050-058, 060-063, 066-068, 070-081, 083	C00-C26, C30-C32, C37-C41, C43-C49, C51, C52, C54-C58, C60, C62-C85 C88-C97, D00-D09, D37-D48

Methods

Basic strategy

- Analysis restricted only to current expenditures (HC1-HC7)
- Identify discrete areas of spending
  - Use other data to distribute item to disease, age and sex
  - Prorate to relevant population in case of collective programs

Major spending areas

- MoH inpatient
- Private inpatient
- MOH & private outpatient
- Pharmacy sales
- Preventive/MCH programs
- Donor expenditures
- Optical goods

MOH Inpatient Treatment

- Problems
  - 97% of inpatient admissions in public sector
  - Routine data - aggregated, only for total admissions, grouped by 250 IMMR classes, no cross-tabs with age/sex
- Primary data collection
  - Sample survey of 10,000 Bed Head Tickets (age, sex, ICD-10, LOS, drugs, operations, radiology) in 57 hospitals
- Adjustments
  - Costs adjusted for level of hospital, medicines, X-rays, LOS
  - Cost data from 2006 hospital cost survey in same hospitals
  - Medicines purchase cost from MOH Medical Supplies Division inventory database
  - Reweighted for geographical skew using MOH aggregate IMMR-coded data by district

Private Inpatient Treatment

- Problems
  - 3-4% of inpatient admissions
  - No data reporting, difficult to obtain cooperation, systems for patient diagnosis recording
- Data sources
  - Sample of 1800 insurance claims (1997-2002)
  - Household survey estimates of inpatient use by age/sex (CB CFS 2003/2004)
- Adjustments
  - Insurance data reweighted for age-sex

Public and Private Outpatient Treatment

- Problems
  - No outpatient reporting systems
  - Household surveys use mixture of patient-reported symptoms and diagnoses / ICD-7
- Data sources
  - Household survey estimates of outpatient use by age/sex/illness (CB CFS 2003/2004)
  - SL Private Clinic Survey 2000: ICPC-2E coded survey of 3,500 outpatients at private sector GPs (RFEs <> Diagnoses <> ICD-10)
- Methods
  - SLPCS 2000 used to map household survey data to ICPC-2, and then to ICD-10
  - All visits assumed to cost the same

Pharmacy sales

- Problem
  - No data on drug purchases by disease/age/sex
- Data sources
  - IMS-Health 2005 sales data by generic product
  - SLPCS 2000
- Method
  - SLPCS 2000 used to map medicines (WHO ATC groups) to age/sex/ICD-10 based on GP prescribing pattern (ICD-10<>ATC)
  - Manual adjustment for disease-specific drugs to reduce effect of co-morbidities in data, e.g., malaria, diabetes

Optical goods

- No data on optical aids wearing by age/sex
- Used population survey estimates from Andhra Pradesh with age adjustment for Sri Lanka

Excluded areas

- Excluded
  - Retail sales of medical durables, etc
  - Rehabilitation
  - Laboratory tests/imaging to outpatients
  - Patient transport
  - Occupational health

  = 20%

  - Capital formation

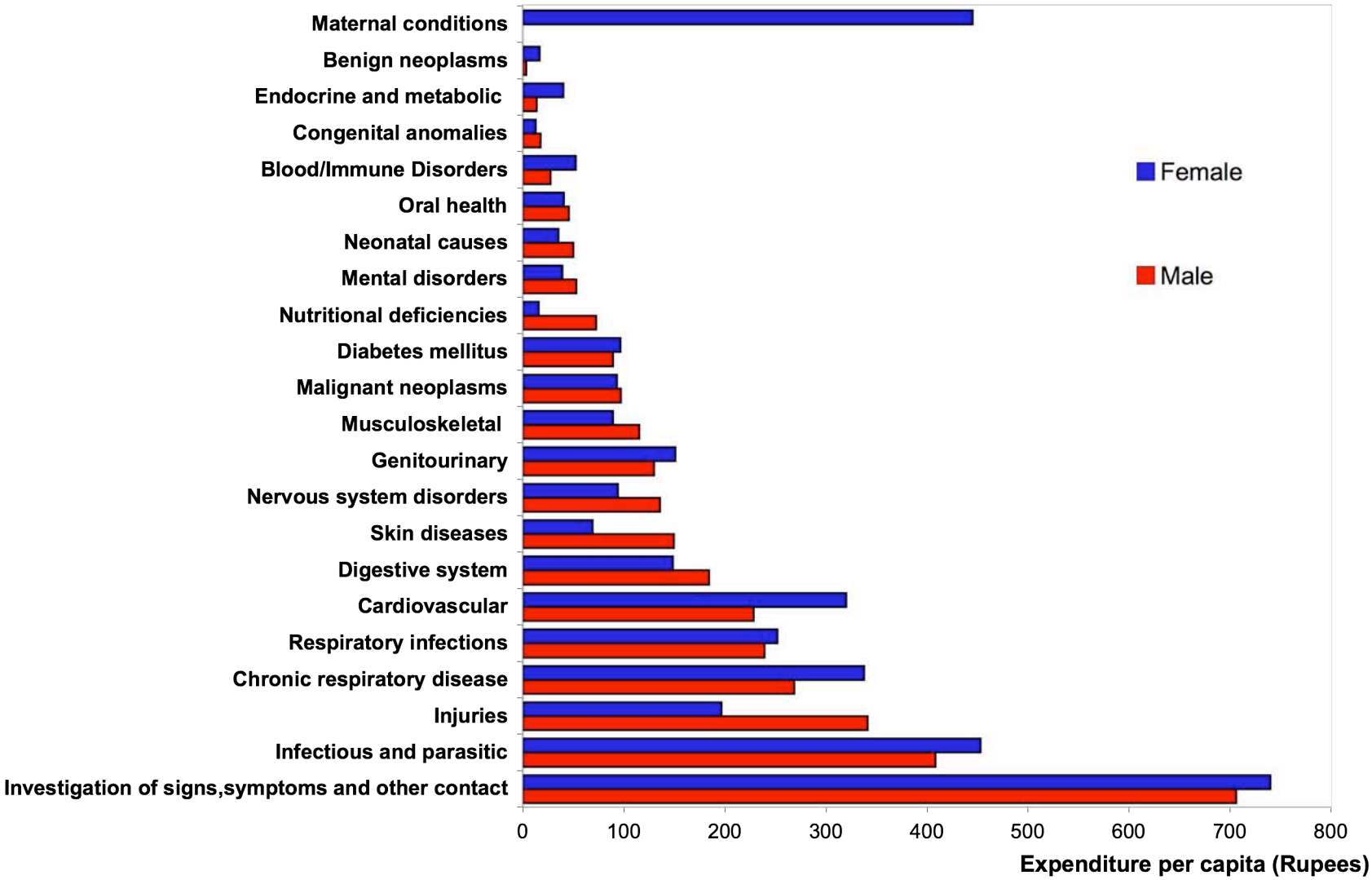
  = 9%

⇒78% of current spending distributed

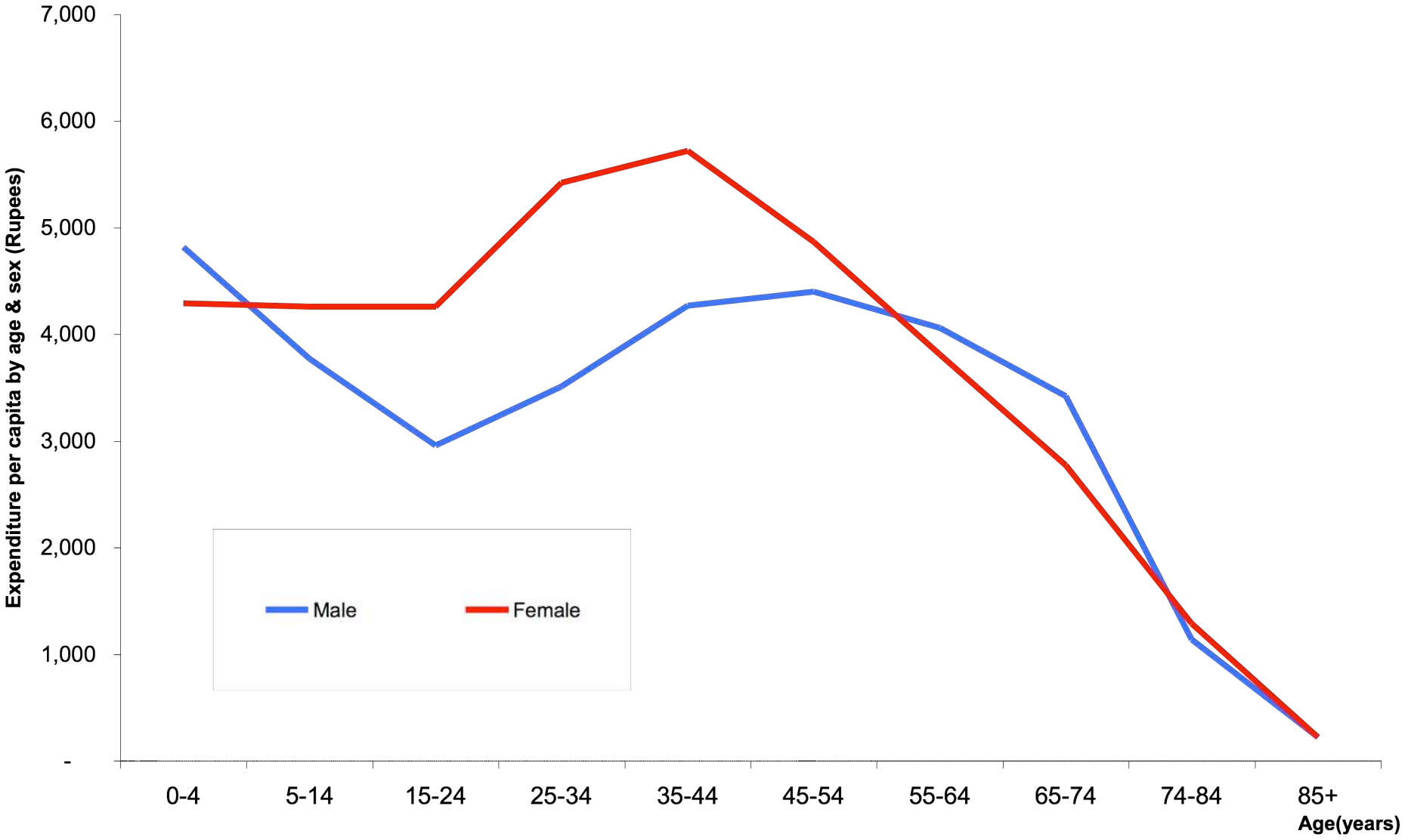
⇒70% of total expenditure on health

Results

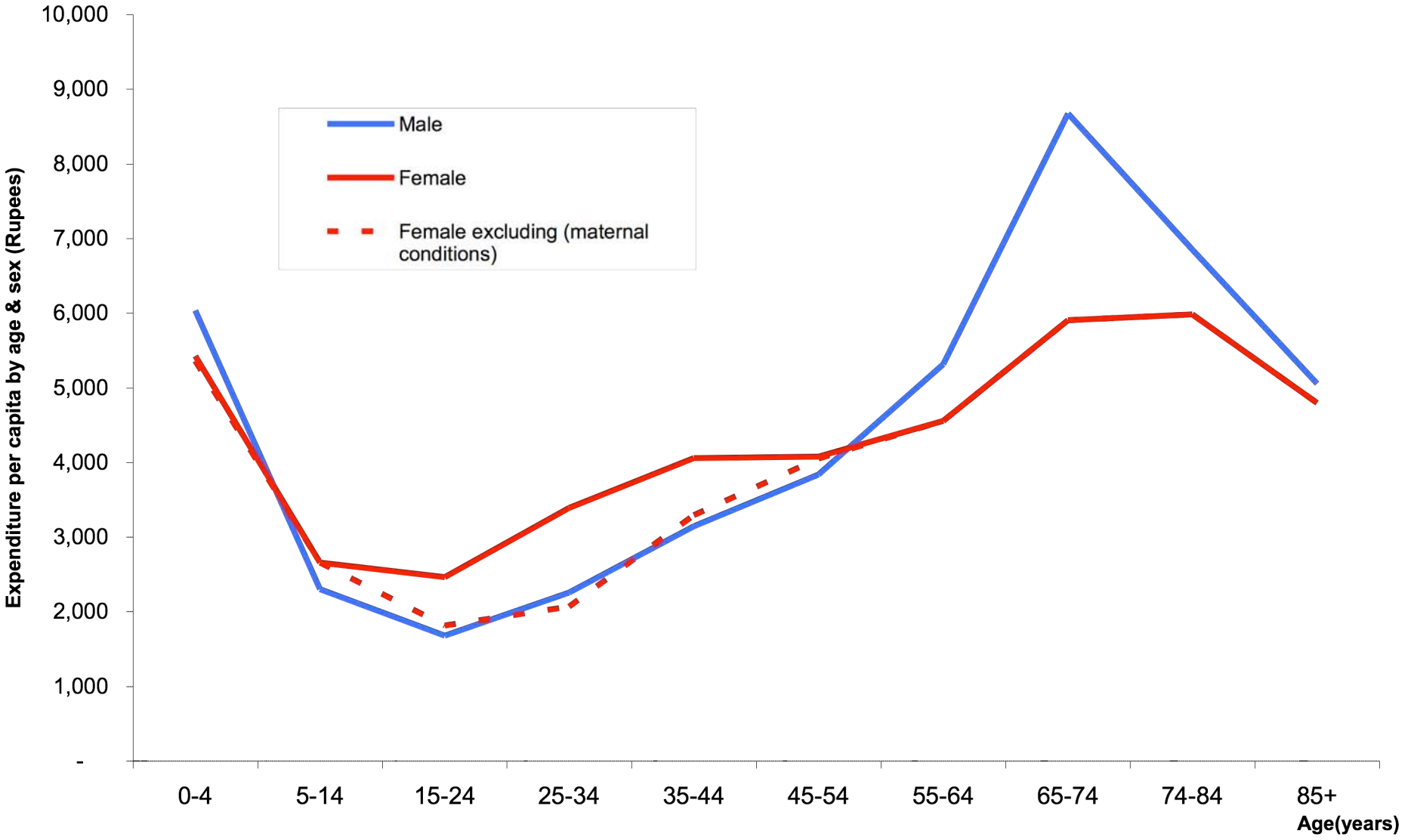
Health expenditures by condition, Sri Lanka 2005



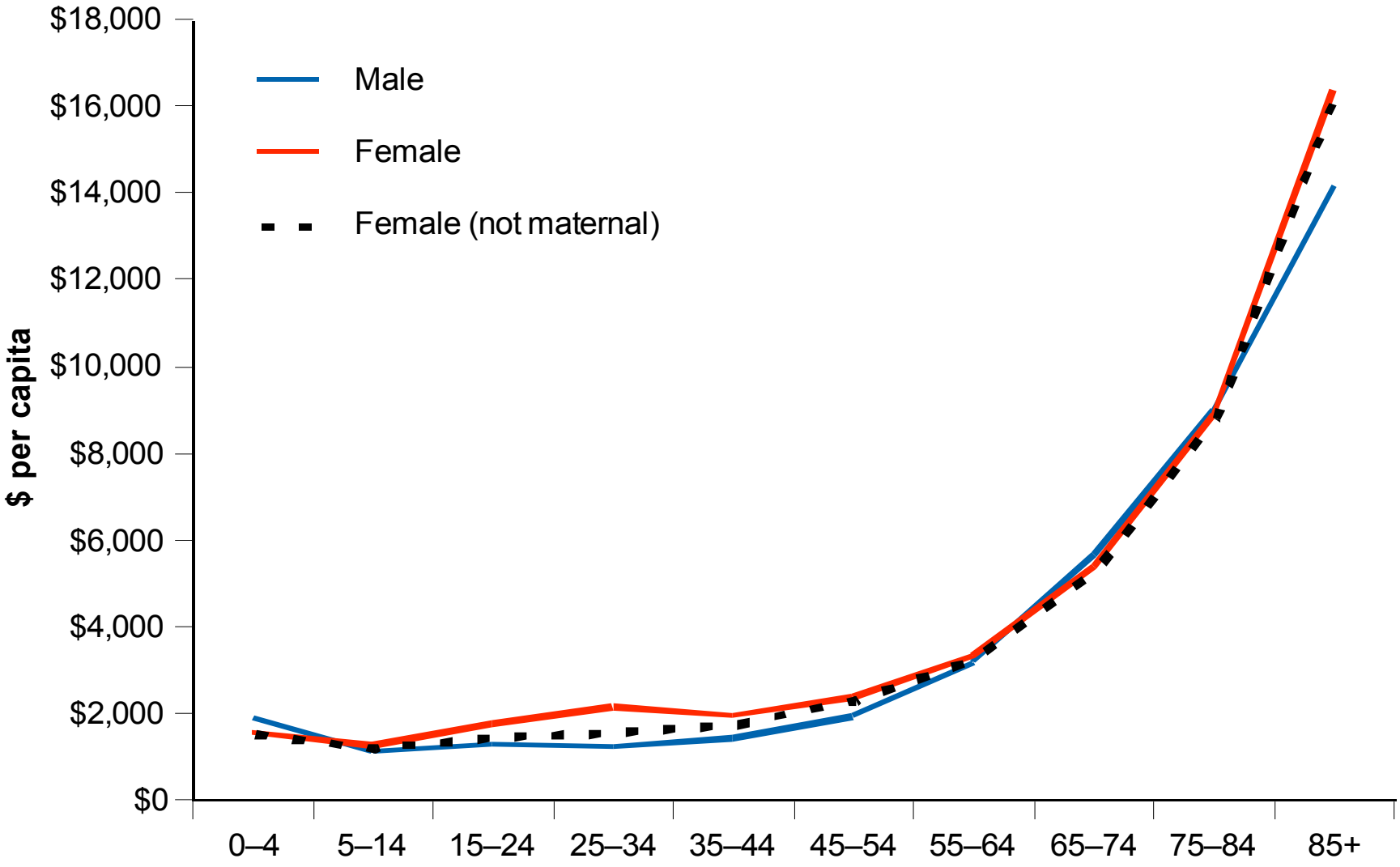
Health expenditures by age and sex, Sri Lanka 2005



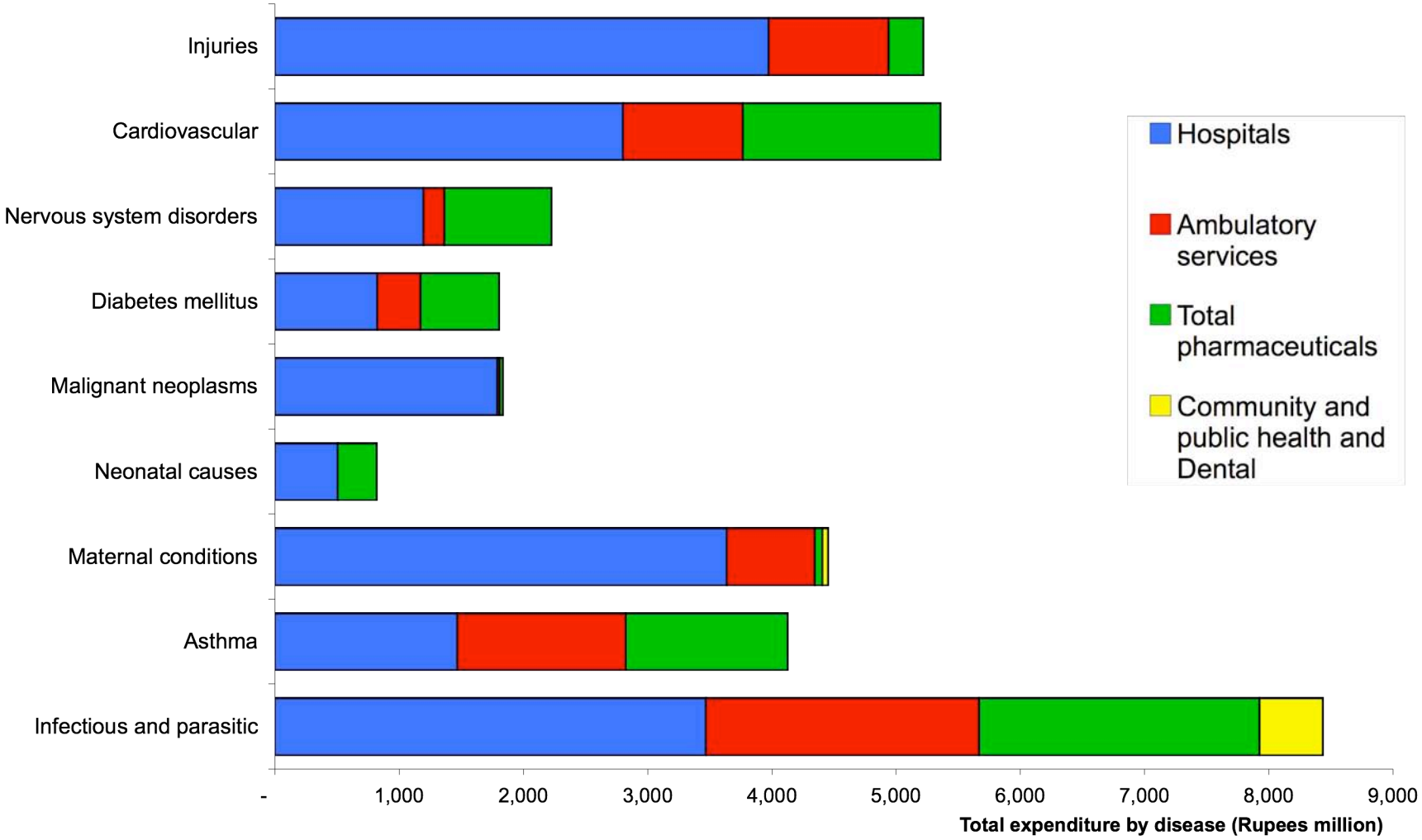
Health expenditures per capita by age and sex, Sri Lanka 2005



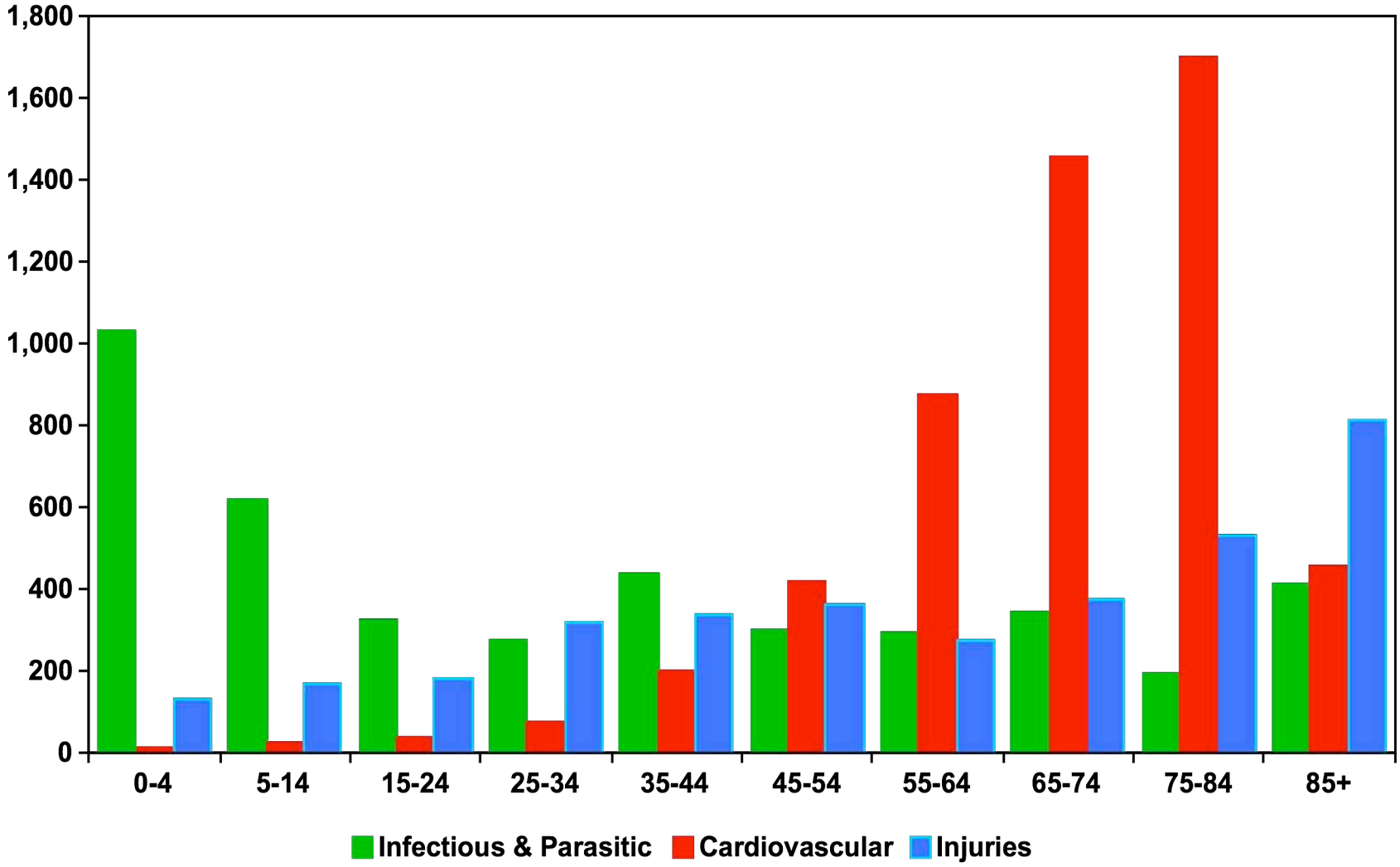
Health expenditures per capita by age and sex, Australia 2000-01



Total costs of disease by sector, Sri Lanka 2005



Expenditures by disease group and age, Sri Lanka 2005



Implications

Comparison with sub-accounts estimates

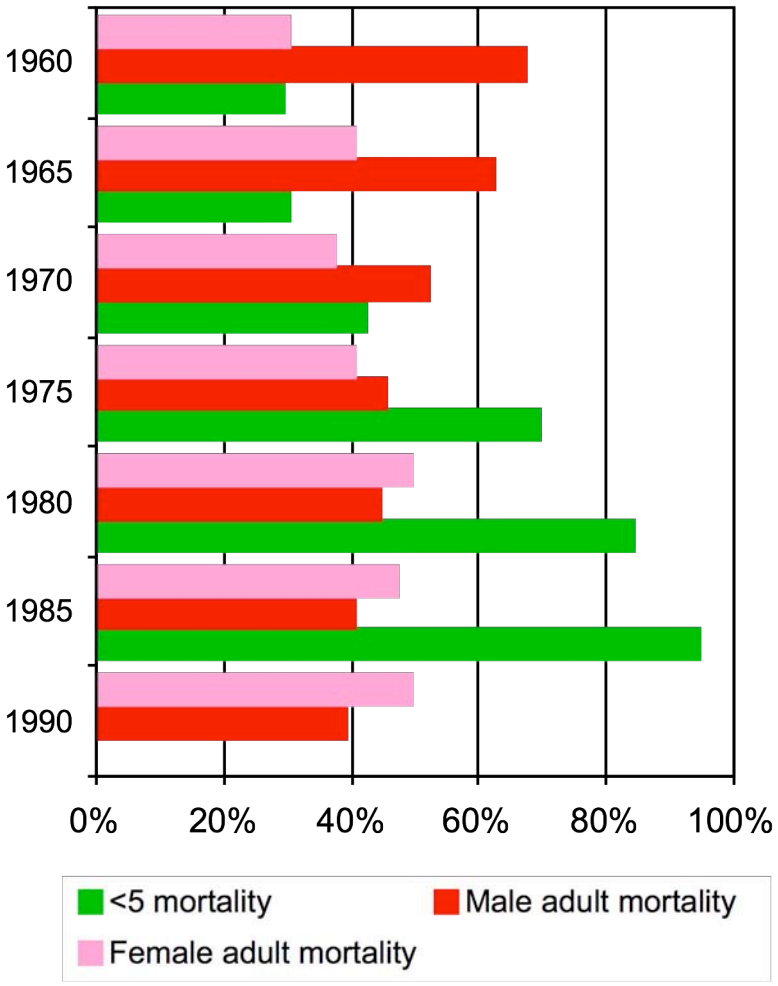
Estimates of 0-4 years spending

- IHP Child Health Accounts (2005)
  - **4.4% of TCHE**
- IHP Disease Accounts (2007)
  - **10.5% of TCHE**

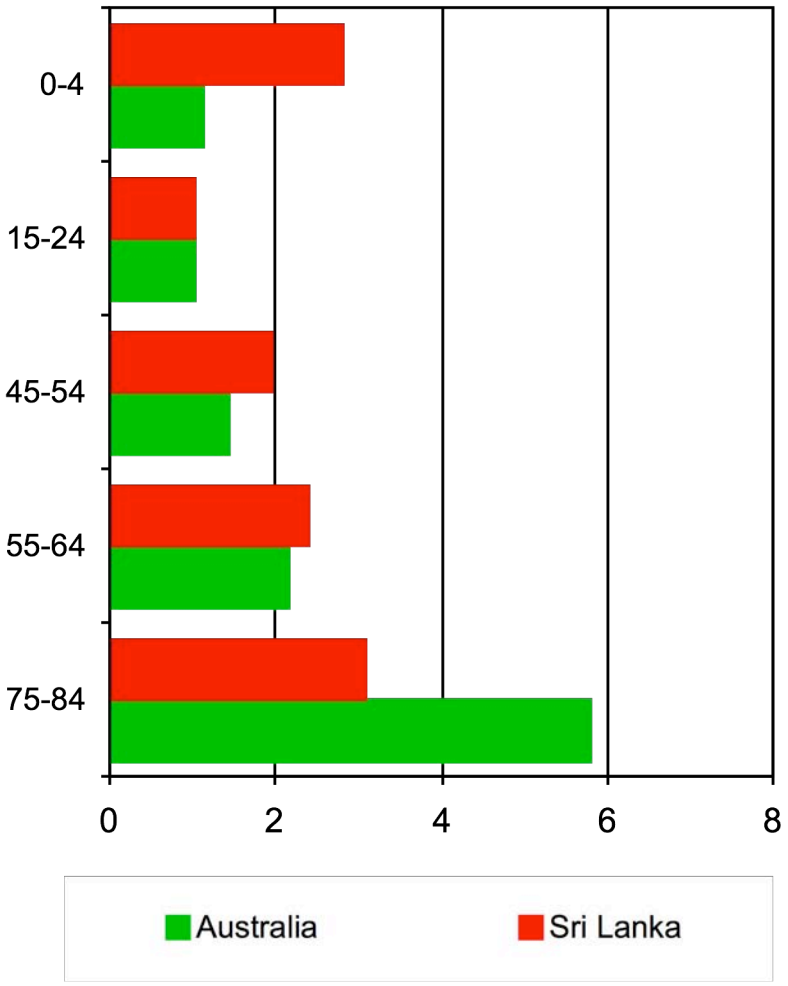
- Disease accounts estimates indicates significant error in earlier child accounts estimates
- Better data, full accounting, analysis of drug sales

Expenditures vs. Perfomance

Sri Lanka health performance relative to income



Expenditure per capita by age, Sri Lanka vs. Australia



Policy messages

- Sub-accounts are likely to produce biased estimates of spending patterns
- Expenditure allocations in Sri Lanka may partly explain poorer performance in adult mortality in recent years, I.e., too much spent on children versus older adults
- Focus on infectious diseases/maternity needs revisiting
- Need for more comparative data to interpret findings