



Reductions in child mortality levels and inequalities in Thailand: analysis of two censuses

Patama Vapattanawong, Margaret C Hogan, Piya Hanvoravongchai, Emmanuela Gakidou, Theo Vos, Alan D Lopez, Stephen S Lim

Summary

Background Thailand's progress in reducing the under-five mortality rate (U5MR) puts the country on track to achieve the fourth Millennium Development Goal (MDG). Whether this success has been accompanied by a widening or narrowing of the child mortality gap between the poorest and richest populations is unknown. We aimed to measure changes in child-mortality inequalities by household-level socioeconomic strata of the Thai population between 1990 and 2000.

Methods We measured changes in the distribution of the U5MR by economic strata using data from the 1990 and 2000 censuses. Economic status was measured using household assets and characteristics. The U5MR was estimated using the Trussell version of the Brass indirect method.

Findings Average household economic status improved and inequalities declined between the two censuses. There were substantially larger reductions in U5MR in the poorer segments of the population. Excess child mortality risk between the poorest and richest quintile decreased by 55% (95% CI 39% to 68%). The concentration index, measured using percentiles of economic status, in 1990 was -0.20 (-0.23 to -0.18), whereas in 2000 it had dropped to -0.12 (-0.15 to -0.08), a 43% (22% to 63%) reduction.

Interpretation These findings draw attention to the feasibility of incorporating equity measurement into census data. Thailand has achieved both an impressive average decrease in U5MR and substantial reductions in U5MR inequality over a 10 year period. Contributing factors include overall economic growth and poverty reduction, improved insurance coverage, and a scaling-up and more equitable distribution of primary health-care infrastructure and intervention coverage. Understanding the factors that have led to Thailand's success could help inform countries struggling to meet the fourth MDG and reduce inequality.

Introduction

Over the past five decades there have been substantial improvements in the health of Thai children, with reductions in the under-five mortality rate (U5MR) from above 160 per thousand in the 1950s and 60s to below 40 per thousand by 1990.^{1,2} A further 24% reduction from 1990 to 2000² puts Thailand well on track to achieve the Millennium Development Goal (MDG) of a two-thirds reduction in U5MR between 1990 and 2015.³ This is in stark contrast to many other countries, particularly those in sub-Saharan Africa and southern Asia where varied progress towards this target has led to much doubt as to whether the goal can be achieved.⁴⁻⁶

As the MDGs focus on average levels, one unanswered question is whether the success in reducing the average U5MR has been accompanied by a reduction in the disparity in child health between subgroups of the Thai population. This notion is in line with global calls for routine monitoring of equity in health outcomes.⁷⁻⁹ Many other countries provide examples of increasing life expectancy and decreasing child mortality while inequalities between the rich and the poor remain¹⁰ or worsen.¹¹ Although Thailand has experienced substantial economic growth over the past two decades (with some interruption due to the 1997 economic crisis), income inequality persists at a relatively high level.¹² A critical question is how this has affected the distribution of child

mortality. Although Thailand might be, on average, set to meet the MDGs for child health, relatively deprived segments of the population might be lagging behind.

We aimed to measure changes in child mortality inequalities by household-level socioeconomic strata of the Thai population using data from the 1990 and 2000 population censuses obtained from the National Statistics Office, Thailand.

Methods

Population data

The 1990 and 2000 Thai population censuses were full enumerations of the Thai population. For both censuses, a random 20% sample of households completed a more detailed questionnaire on household characteristics and the analysis conducted here was limited to this sample (table 1).

	Sample size
1990	
Number of mothers aged 15–49 years	1 996 409
Number of households	2 432 276
2000	
Number of mothers aged 15–49 years	2 362 523
Number of households	3 066 316

Table 1: Sample sizes for the 20% sample of the 1990 and 2000 censuses

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Institute for Population and Social Research, Mahidol University, Thailand

(P Vapattanawong PhD);

School of Population Health,

University of Queensland,

Brisbane, Australia

(M C Hogan AB, E Gakidou PhD,

T Vos PhD, Prof A D Lopez PhD,

S S Lim PhD); Setting Priorities

using Information on Cost-

Effectiveness (SPICE) Project

Ministry of Public Health,

Thailand (M C Hogan, S S Lim);

International Health Policy

Program, Thailand

(P Hanvoravongchai MD);

Faculty of Medicine,

Chulalongkorn University,

Thailand (P Hanvoravongchai);

and Harvard Initiative for

Global Health, Cambridge, MA,

USA (E Gakidou)

Correspondence to:

Margaret C Hogan, Setting

Priorities using Information on

Cost-Effectiveness (SPICE)

Project, Department of Medical

Services, Ministry of Public

Health, Nonthaburi,

Thailand 11000

m.hogan@sph.uq.edu.au