Available online at www.sciencedirect.com
ScienceDirect
Research in Social and Administrative Pharmacy 5 (2009) 211–224
RESEARCH IN SOCIAL & ADMINISTRATIVE PHARMACY

Original Research

The impact of nonreferral outpatient co-payment on medical care utilization and expenditures in Taiwan

Li-Chia Chen, Ph.D.[1], Ellen I. Schafheutle, M.Sc., M.Res., Ph.D.*, Peter R. Noyce, Ph.D.

School of Pharmacy and Pharmaceutical Sciences, The University of Manchester, 1st Floor, Stopford Building, Oxford Road, Manchester, M13 9PT, UK

Abstract

Background: Taiwan's National Health Insurance's (NHI) generous coverage and patients' freedom to access different tiers of medical facilities have resulted in accelerating outpatient care utilization and costs. To deter nonessential visits and encourage initial contact in primary care (physician clinics), a differential co-payment was introduced on 15th July 2005. Under this, patients pay more for outpatient consultations at ''higher tiers'' of medical facilities (local community hospitals, regional hospitals, medical centers), particularly if accessed without referral.

Objectives: This study explored the impact of this policy on outpatient medical activities and expenditures, different co-payment groups, and tiers of medical facilities.

Methods: A segmented time-series analysis on regional weekly outpatient medical claims (January 2004 to July 2006) was conducted. Outcome variables (number of visits, number of outpatients, total cost of outpatient care) and variables for cost structure were stratified by tiers of medical facilities and co-payment groups. Analysis used the auto-regressive integrated moving-average model in STATA 9.0.

Results: The overall number of outpatient visits significantly decreased after policy implementation due to a reduction in the number of patients using outpatient facilities, but total costs of care remained unchanged. The policy had its greatest impact on the number of visits to regional and local community hospitals but had no influence on those to the medical centers. Medical utilization in physician clinics decreased due to an audit of reimbursement declarations. Overall, the policy failed to encourage referrals from primary care to higher tiers because there was no obvious shifting of medical utilization and costs reversely.

Conclusions: Differential co-payment policy decreased total medication utilization but not costs to NHI. The results suggest that the increased level of co-payment charge and the strategy of a single cost-sharing policy are not sufficient to promote referrals within the system. To achieve an effective co-payment policy, further research is needed to explore how patients' out-of-pocket payment affects medical utilization and which forces (not susceptible to co-payment) act in tertiary facilities.

Keywords: Co-payment; Referral system; Medical utilization; Health-care cost

* Corresponding author. Tel.: +44 161 275 7493; fax: +44 161 275 2416.

[1] Present address: Graduate Institute of Clinical Pharmacy, College of Pharmacy, Kaohsiung Medical University, Kaohsiung, Taiwan.

E-mail address: ellen.schafheutle@manchester.ac.uk (E.I. Schafheutle).

1551-7411/09/$ - see front matter © 2009 Elsevier Inc. All rights reserved.
doi:10.1016/j.sapharm.2008.08.003

Introduction

Taiwan's health-care system

Taiwan's National Health Insurance (NHI) is a government-run, single-payer NHI scheme, which was established in 1995. It is financed through a mix of premiums and taxes to provide equal access to health care for all citizens.[1] NHI is operated under a single public-run organization, the Bureau of National Health Insurance (BNHI) that covers 98.67% of the population (23 million). NHI revenue relies on payroll-based premiums from insured individuals (38%), employers (35%) and government (27%).[a] It reimburses a mixed public and private delivery system to provide comprehensive benefit packages for a wide range of services, including hospital and outpatient services, prescription drugs, laboratory tests, dental services, and traditional Chinese medicine.[1]

Taiwanese patients have total freedom to go to any provider or hospital of their choice. Treatment choices are decided by providers and patients,[2] and there are no explicit rationing of care, no waiting lists, and no referral requirements. Health-care providers in Taiwan have 3 sources of revenue: (1) reimbursement from BNHI (the main source), (2) registration fees from patients for each visit, and (3) the direct sale to patients of products and services not covered by the NHI. Physicians are either salaried or self-employed owners of their own practices.

BNHI's payment to the contracted health-care providers has been made primarily through a fee-for-service mechanism based on the national Fee Schedule for Medical Services and Reference List for Drugs established jointly by the insured individuals and the contracted health-care facilities.[b] These schedules cover approximately 3400 services, 16,000 medicines, and 6000 medical products and devices.[c] The reimbursements are generally categorized into diagnosis, treatment, and drug costs. Diagnosis and treatment services provided at higher tiers of medical facilities are paid more than those services provided at lower tiers of facilities.

Rising health-care expenditure

With the generous NHI coverage and consumer freedom to access services, there has been a rapid expansion in medical system utilization.[3] From 1995 to 2004, the total health expenditure grew at an average annual rate of 5.90% and accounted for 6.26% of Gross Domestic Product (GDP) in 2003.[d] The BNHI experienced its first operational loss in 1998.

Outpatient care accounts for two thirds of NHI medical expenditures (67% in 2003).[4] Drug costs have been the most important component of outpatient costs (about 33.3%), with an annual rate of increase of about 13%.[5,6] On average, there are 13.4 outpatient medical visits per person per year,[7] 3.2 items per outpatient prescription, and drug expenditure is up to 15% of total health-care cost,[e] accounting for 1.18% GDP in 2001.

Although a hierarchy of medical facilities classified as primary (physician clinics), secondary (regional hospitals, local community hospitals), and tertiary care (medical centers) does exist in Taiwan, all levels also provide outpatient services, and there is no established referral system among the tiers.[7] Patients can access any specialist they want in any tier, with the only barrier to access being cost. Indeed, in 2002, 28.6% of all Taiwanese outpatient visits were to hospital outpatient departments;[7] by contrast, only 8.6% of American outpatient visits were to hospitals.[8]

Outpatient co-payment charges

Since 1995, the NHI has responded to the rapid rise in expenses for health-care and unanticipated accumulation of overdue premiums by introducing a number of measures including increasing premiums (September 2002), implementing global budgets (dental clinics in 1998, Chinese medicine in 2000, physician clinics in July 2001, hospitals in July 2002) and co-payment charges for outpatient visits and medicines.

A co-payment for outpatient visits was first implemented in 1995 as a 2-level charge, and it was soon amended to a 3-level charge in 1997 depending on which type of medical facility was

[a] Data reported at the end of 2003 by BNHI.

[b] National Health Insurance Act, Article 51. http://www.nhi.gov.tw/english/webdata.asp?menu=11&menu_id=295&webdata_id=1865.

[c] BNHI online presentation, May 2006. http://www.dacp.org/PPRS%5CPharmaceitical%20benefit%20and%20Innovative%20payment%20system%202005%205%207%20HarvardFinal.ppt.

[d] To break it down, 3.59% came from health insurance, 2.23% from out-of-pocket money, and the remaining 0.44% from government coffers.

[e] In the UK, the drug expenditure was 13.10% of total health-care cost in 2001.