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Title of the paper

**Measuring share of drug sales in revenues of health facilities as a
performance indicator in China**

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Measuring share of drug sales in revenues of health facilities as a performance indicator in China

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Abstract

Pharmaceutical sales account for 39% of total health expenditure and 45-70% of hospital revenues in China. To bring down medical costs, the government developed a hospital performance measurement system that monitors the share of drug sales in hospital revenues, with an intention to bring it down to 30% in 2017. Unfortunately, hospitals quickly find ways to make up the loss from drug sales, for example, through increasing other services (eg. *Intravenous drips* and high technologies). Meanwhile, primary care institutions were weakened inadvertently by the Essential Medicines List (EML) policy. A systems approach involving all stakeholders is needed to achieve the policy goals.

Key words: Pharmaceuticals, Hospitals, China, Performance indicators

China is the second largest pharmaceutical market in the world.¹ Pharmaceutical sales account for about 39% of China's total health expenditure,² much higher compared with those in the OECD countries (for example 17% in Australia). Because health care affordability has remained a major concern of the public despite near universal coverage of social health insurance, pharmaceuticals became an obvious target in the health system reforms. It is estimated that out-of-pocket payment comprises about 30% of total health expenditure in China,³ down from over 50% in 2005; however, the total health expenditure increased by 368% over the period from 2005 to 2015.² This study performs a stakeholder analysis on the pharmaceutical performance policies in China.

Government

More than 95% of Chinese people are currently covered by government-subsidized social health insurance.⁴ The insurance contributions from governments usually go to hospital inpatient care. The large share of drug sales in hospital revenues has imposed a great financial burden on government budgets, leading to the development of a hospital performance measurement system that monitors the share of drug sales in hospital revenues. Drug sales account for 45-70% of hospital revenues in China. The government intends to bring it down to 30% in 2017.⁵

It has been widely accepted that the governmental pricing policy itself contributed to the increasing share of drug sales in hospital revenues in the 1980s and 1990s. Governmental investments in health service in the 1980s and 1990s were low. To prevent public outcry on soaring medical costs, the government set up a fee for service schedule with a low level of

prices. Such a schedule usually remained unchanged for many years. But because the pricing level is too low to provide sustainable income sources for hospital staff, hospitals were allowed to make a 15% markup from drug sales. Unfortunately, there is no effective measurements to control over the type and volume of medicines that a medical work can prescribe. Expensive drugs soon became a major complaint from consumers.

Since 2009, China has implemented the Essential Medicines List (EML) policy for primary care facilities. Prices of drugs on the EML (about 512 medicines including 102 traditional Chinese medicines) are set by the government.^{6,7} No mark-up is allowed anymore for the primary care facilities that prescribe those drugs.⁸ The government also launched a regional procurement and distribution system for EML drugs. This has brought down prices for these drugs by 30-50%.⁹

However, the prices of most other drugs are set after negotiations between the government and manufacturers. Drugs dispensed from hospitals go far beyond the EML. About 2,151 medicines (of which 1,140 were Western medicines) were included in the 2009 edition of the China National Basic Medical Insurance.⁹

Health providers

Most medicines (>70%) in China are dispensed from hospitals rather than community pharmacy retails. Even for OTC (Over the Counter) medicines, only 53% are sold from community pharmacies/supermarkets.⁹

How health providers respond to the government measurements determines the success or otherwise of the policies. In spite of significant increase in government investments in health in recent years, governmental budgets for hospitals stay at a low level (less than 10% for many hospitals). Income of medical workers continues to depend on the revenues they bring to their organizations.

When a 15% mark-up of drug sales applies (it still applies to many hospitals), over-prescriptions are common especially for more expensive drugs.^{10,11} But when medical workers are no longer able to obtain financial benefits from drug prescriptions, they quickly shift attention to other revenue generating activities to compensate for the loss.^{12,13} Our studies show that medical workers in primary care facilities are increasingly prescribing antibiotics administered through *intravenous (iv) drips* simply because they can bring additional income to the organisations (through charging a service fee and reclaiming costs of consumables in relation to *iv drips*) when prescribed drug itself is no longer profitable.^{11,12}

Low investments and strong control over insurance claims by the governments also became a perfect excuse for hospitals to shift financial risks to their pharmaceutical suppliers. It is not uncommon to find hospitals to owe large amounts of money from their suppliers.

Consumers

The drug performance measurement has attracted enormous attention from consumers. The public believe that medical costs would come down if good compliance of the governmental policies is achieved. But when those policies failed to achieve their intended goals, consumers started to blame health providers. Trust in medical practitioners was corroded and became weakening. Medical conflicts between consumers and health providers emerged as a serious social problem.¹⁴

Patients in China can seek medical attention from hospitals without a referral from primary care providers. Although they have been well aware of potential overprovision of services in hospitals, the shortage of resources and poor competency of workforce in primary care facilities has driven them to seek more expensive hospital services.¹⁴

Pharmaceutical supply

Generic drug sales dominate the Chinese market (>80%).⁹ However, some medicines are still heavily dependent on overseas suppliers. Most insulin products, for example, are imported. We examined 186 records of insulin products in 60 pharmacy outlets in Hubei and found significant differences of insulin availability across the pharmacy outlets (not published). The highest availability of insulin was found in public hospitals compared with that in community health centers and private outlets. Over 90% of public hospitals had pre-mixed insulin products. By contrast, insulin availability in community health centers was very low, with 10% to 20% of community health centers having insulin products.

Discussion and conclusion

The government sent out a clear signal to the public for its determination of enabling affordable medical services to all through a series measures, including the pricing of medical services and performance measurement on hospital drug sales. But some of these policies generate perverse incentives to health providers, stimulating profit-seeking behaviors and demand-inducing activities. This, in turn, has damaged the image of health providers, fueled medical disputes, and diminished patient trust in medical workers. The governmental policy direction towards a primary care dominated tiered health care system is consistent with the international development. However, the drug policies have inadvertently placed primary care facilities to a weaker position for providing appropriate care due to unavailability of drugs needed by consumers.

Many factors have shaped the current situation of pharmaceutical services in China. Some may argue that culturally Chinese consumers are more likely to accept drug therapy than others. Others may blame the lack of a stringent medical education system for the poor prescription performance of medical practitioners.¹³ Yes, these are all true. But the lack of participation and endorsement of consumers and health providers in the development of the drug performance measurement system is perhaps the fundamental reason undermining the results of those measurements. Although top-down approach is still a main strategy in policy development in China, the Chinese government has increasingly engaged the public in policy debates and policy development. A good understanding about what consumers and providers

need and want is essential in health policy development. However, fragmentation in the bureaucratic systems is common. A top-down approach through the bureaucratic systems is unlikely to be able to deliver a good policy product if meaningful engagement of the public and health providers is missing.

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