

# Realigning the incentive system for China's primary healthcare providers

Although reforms have reduced incentives to overprescribe, more needs to be done to link performance to quality and ensure primary care doctors are adequately paid, say **Xiaochen Ma and colleagues**

**P**rimarily healthcare is the foundation of an effective health system.<sup>1</sup> A strong health workforce is widely recognised as a prerequisite for healthcare and an important determinant of health system performance.<sup>2</sup> The performance of health professionals is determined by their competencies (for example, their medical knowledge and skills) and the incentives they are provided.<sup>3</sup>

China moved to a market economy in the 1980s. The role of government has been substantially reduced in all economic and social sectors, including healthcare.<sup>4 5</sup> As a result, government subsidies that were available to primary care providers in the earlier centralised economy have been greatly reduced, and these providers have had to act as for-profit entities. At the facility level, in order for primary healthcare facilities to survive financially, they were allowed a 15% profit margin on drugs by the government. At the individual level, the income of primary healthcare doctors was linked to the revenue generated by the facilities they worked for.<sup>3</sup> This incentive system resulted in primary healthcare doctors overprescribing drugs and high costs for diagnostic tests such as

magnetic resonance imaging and computed tomography.<sup>3</sup> This situation led to growing concerns about the quality of care, rising cost of healthcare, and a public distrust of the health system, particularly primary healthcare facilities.<sup>4-6</sup>

In order to deal with these public concerns, China started to reform its primary healthcare system as one of five key areas in its health system reforms which began in 2009.<sup>7</sup> The reform focused on separating the operating revenue of primary healthcare facilities from their drug sales and realigning the incentives of primary healthcare providers with the public objective of improving the quality and efficiency of services. In this analysis, we summarise the policies that have been introduced over the past decade to provide incentives for primary healthcare professionals, discuss the achievements

and gaps of the reform, and recommend possible actions to further progress.

## Realigning incentives in primary healthcare

Box 1 summarises the main policies on incentives for primary healthcare providers. A set of policies was introduced to stop drug mark-ups as a source of financing for primary healthcare facilities.<sup>7</sup> The mark-up used to be 15% of the drug sales. To compensate for the loss of revenue, the government established a comprehensive reimbursement scheme that provides financial subsidies to fully cover the deficit.<sup>9</sup>

A performance based salary system, fully funded by the government, was introduced to realign the incentives of primary healthcare professionals.<sup>8</sup> The performance based salary is split into a basic salary (60-70% of the total salary) and a performance based bonus (30-40%). Later policies indicated that the future salary reform

### Box 1 | Main policies on reforming incentives for primary healthcare providers

#### 2009: Opinions on deepening health system reform<sup>7</sup>

- Aim: introduce a zero drug mark-up policy in all primary healthcare facilities

#### 2009: Implementation of a performance based salary at primary healthcare facilities and public health institutions<sup>8</sup>

- Aim: establish a performance based salary system for primary care health professionals

#### 2010: Establishment and optimisation of reimbursement scheme for primary healthcare facilities<sup>9</sup>

- Aim: implement a comprehensive reimbursement scheme in primary healthcare facilities

#### 2011: Establishment of a general practitioner system<sup>10</sup>

- Aim: establish a general practitioner system and expand their career development path

#### 2012: Guidelines on deepening health system reform during the 12th five year plan period<sup>11</sup>

- Aim: increase the performance based bonus proportion of the total salary appropriately to increase the variation in total income distribution among primary healthcare employees

#### 2013: Opinions on optimisation of the essential medicines policy and operating mechanism for primary health care facilities<sup>12</sup>

- Aim: permit primary healthcare facilities to allocate their operating profits to employee benefit fund and bonus fund

#### 2016: Plan on deepening health system reform during the 13th five year plan period<sup>13</sup>

- Aim: permit healthcare organisations to set their wage level above the ceiling of public funded organisation, and to use their operating profits for employee bonuses

#### 2018: Opinions on optimising the training and incentive mechanism for general practitioner<sup>14</sup>

- Aim: set the total performance salary for primary healthcare facilities at a reasonable level to bring the remuneration of general practitioners to the same level as hospital doctors with similar qualifications within the same district or county

### KEY MESSAGES

- China changed the incentive system of primary healthcare providers as part of its 2009 healthcare reforms
- Drug mark-ups were replaced with government subsidies and a performance based salary system was introduced
- Incentives are still weak or misaligned and the use of primary healthcare facilities has decreased since 2010
- Further reforms should include a performance based salary system with an evaluation system linked to quality, adequate total pay, and career development opportunities for primary care professionals

would look to increase the proportion of the performance based bonus<sup>11 12</sup> and raise the total income for primary healthcare professionals.<sup>13 14</sup> The main reform in the primary healthcare salary system changed the source of income and its objective. Before the reform, the income was connected with the drug mark-up, which encouraged volume of prescriptions. Since the reform, income has been funded by the government, which was designed to motivate primary healthcare practitioners to focus on providing good quality services.

In addition to financial incentives, non-financial incentives are also important to motivate primary healthcare professionals.<sup>15</sup> In 2011, a national guideline was issued on establishing a general practitioner (GP) system by 2020.<sup>10</sup> To help build this system, policies on career development of primary healthcare professionals emphasised that the GPs should have more promotion opportunities. Years of work and other requirements need to be adjusted to better evaluate GPs' qualifications for promotion.<sup>16</sup>

**Progress made and challenges remaining**

The financing mechanism no longer relies on drug mark-ups. Both central and local governments have invested more in primary healthcare providers, including subsidies to compensate for the loss of revenue from removal of drug mark-ups and financial arrangements to deliver basic public health services.<sup>17</sup> For rural primary healthcare facilities, the share of direct government subsidies in revenue rose from 23% in 2010 to 37% in 2017. For urban primary healthcare facilities, the share increased from 25% in 2010 to 45% in 2017 (fig 1).<sup>18</sup>

The number of primary healthcare professionals has steadily increased and so have their salaries. Helped by government financing and the establishment of the GP system, the total numbers of health professionals, practising doctors, and registered nurses increased by 31%, 28%, and 65% respectively between 2010 and 2017.<sup>18</sup> In addition, the average annual salary for primary healthcare professionals increased about two and half times, from ¥22 000 (£2838; €2508; \$3190) in 2010 to ¥57 000 in 2017 (fig 2). In addition, social benefit programmes were expanded to include primary healthcare professionals.<sup>19</sup>

Despite the evidence of the positive effect of the policies, more work needs to be done to realign incentives for primary healthcare practitioners to improve quality of care. An unintended result of the reforms is that the use of primary healthcare as a proportion of total healthcare use has declined over the

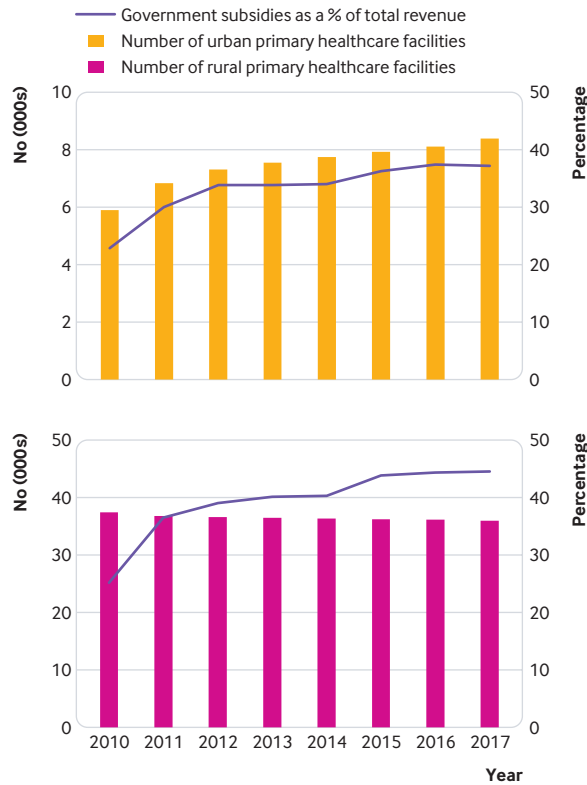


Fig 1 | Number of primary healthcare facilities and government subsidies as a percentage of total revenue, 2010-17<sup>18</sup>

past 10 years. Outpatient and inpatient visits to primary healthcare facilities as a percentage of the total number of visits to healthcare facilities—primary healthcare facilities and hospitals—decreased from 62% and 28% respectively in 2009 to 54% and 18% in 2017 (fig 3). Patients chose to bypass the primary healthcare system in favour of hospitals, which suggests that the quality of health services in primary healthcare facilities was still unsatisfactory.<sup>6</sup>

A recent study using standardised patients to assess the quality of care in primary healthcare found poor clinical

performance and that an important barrier to delivering good quality care was the gap between medical knowledge and clinical practice.<sup>20</sup> This gap, known as the know do gap, is found in many primary healthcare systems in the developing world and may be a result of weak or misaligned incentives that fail to motivate primary healthcare professionals to deliver good quality care even when they have the correct knowledge.<sup>21</sup> Lack of knowledge and medical incompetence are also reasons for poor care, which reflect gaps in medical education and inservice training opportunities.<sup>6</sup>

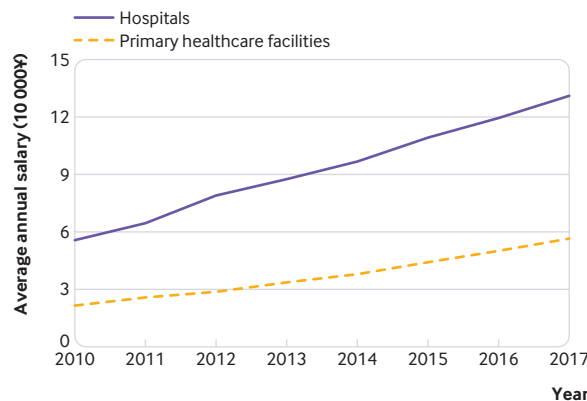


Fig 2 | Average annual salary in primary healthcare facilities and hospitals, 2010-17.<sup>18</sup> 1¥=£0.114; €0.129; \$0.145

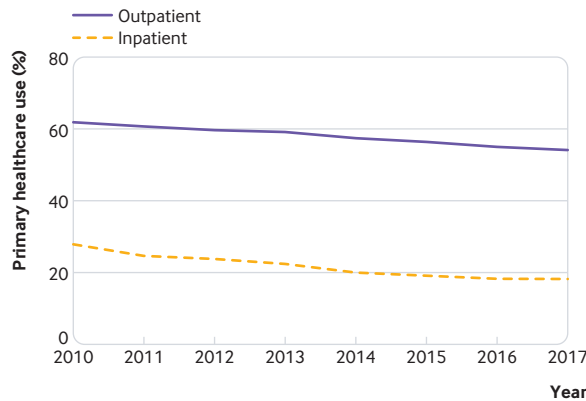


Fig 3 | Use of primary healthcare as a percentage of total use of healthcare facilities, 2010-17<sup>18</sup>

**What should be done to further progress?**

Moving forward, China has an historic opportunity to establish its GP system and people centred integrated care system. The country should make use of the policy momentum to strengthen its system of incentives. We highlight three policy recommendations for further progress.

Firstly, based on the experience of implementing the performance based salary system, this should be accompanied by a functioning evaluation system linked to quality. Although monitoring and evaluation based on the quality of service were built into the reform, in practice, many primary healthcare facilities linked their performance indicators to service volume rather than quality of services provided.<sup>22</sup> In addition, no meaningful variation existed in the bonus salary. Because primary healthcare managers were concerned about fairness,<sup>19</sup> many facilities distributed the bonus salary equally to all healthcare professionals. This acted as a disincentive for primary healthcare doctors to individually deliver a higher quality of care. Further reform of the performance based salary system should consider adding a component in the evaluation system that is tied to both volume and performance quality indicators so that it generates variation in individual performance bonus. By doing so, the performance based salary system would

motivate primary healthcare professionals more effectively.

Secondly, more policies should be considered to ensure an adequate total income for primary healthcare providers. Even if the performance based salary were implemented properly, the total income of primary healthcare providers is still low, which makes it difficult to motivate primary healthcare doctors. The salary of healthcare professionals, and particularly primary healthcare doctors, in China is not attractive compared with the average occupation (table 1). Although salaries in primary healthcare facilities have improved, the salary gap between health professionals working in primary healthcare facilities and public hospitals has widened over the past decade (fig 2). Without increasing the pay of primary healthcare professionals to an acceptable level, any effort to motivate them by adding a performance based mechanism will not improve job productivity and morale in the long term.<sup>24</sup> In fact, a recent policy modification has considered improving the total salary.<sup>14 16</sup> In countries of the Organisation for Economic Cooperation and Development, the average salary of GPs is comparable to the average salary of physicians and surgeons and two times higher than the average salary of all occupations (Table 1). As China's economy continues to grow, setting a salary standard

for GPs comparable to those internationally should be considered as a long term goal.

Thirdly, non-financial incentives, especially career development opportunities for primary healthcare professionals, should be strengthened. Although improvement of salaries may be a greater priority, non-financial incentives are weak—for example, opportunities for career development are scarce. Limited promotion prospects and an unclear career development path are common for primary healthcare providers.<sup>25</sup> At the same time, primary healthcare facilities no longer provide a wide range of clinical services—such as minor surgery or childbirth services—and this has reduced the opportunities for primary healthcare practitioners to update and improve their clinical knowledge and practice.<sup>19</sup> A review of the GP system in the UK showed that clinical content—especially if it is intellectually stimulating—is associated with job satisfaction.<sup>26</sup> In addition, strategies to reform payment methods, education, and training of GPs (not discussed in detail here) are also important to reform the system of incentives.

**Conclusion**

Primary healthcare is the foundation of an effective health system but efforts to strengthen primary healthcare in low and middle income countries are limited.<sup>27</sup> China's experience shows that incentive systems are important for a fully functioning primary healthcare system. Relying mainly on the market economy has generated inappropriate incentives that have led to overprescription of drugs and overuse of advanced diagnostic tests, and relying mainly on government interventions has resulted in weak incentives for primary healthcare providers. Over the past 10 years, despite achievements in removing drug mark-ups as a main source of financing for primary healthcare facilities, gaps still remain in realigning the incentives for primary healthcare providers. Further reforms should consider connecting the performance based salary system to an

Table 1 | Health sector and primary healthcare sector wages in China and OECD countries

Country	Level	Measurement	Wage (\$)	Relative wage
China	All occupations	National average annual wage for all occupations <sup>18</sup>	10 232	100% (reference)
	Healthcare sector in general	Average annual wage for health and social services sector <sup>18</sup>	12 166	118%
	Primary healthcare	Median annual wage for community and township health centres <sup>6</sup>	7 118	70%
	Primary healthcare	Median annual wage for village clinics <sup>6</sup>	3 707	36%
OECD	All occupations	National average annual wage for all occupations <sup>23</sup>	40 099	100% (reference)
	Healthcare sector in general	Average annual wage for physicians and surgeons <sup>23</sup>	103 907	259%
	Primary healthcare	Average annual wage for general and family practitioners <sup>23</sup>	85 084	212%

## evaluation system linked with quality, ensuring adequate total salaries, and providing career development opportunities for primary healthcare professionals.

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