

Dissatisfaction with current integration reforms of health insurance schemes in China: are they a success and what matters?

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Abstract

Integration reforms have been piloted as key policies to address the fragmented health insurance system in China. They are also regarded as a better choice for realizing a Universal Basic Medical Insurance System (UBMIS). This study has attempted to explore the determinants that may affect respondents' dissatisfaction with the reforms. The aim is to provide evidence for more effective policy adjustment during the next round of nationwide integration reforms in China. A cross-sectional questionnaire survey was conducted in Ningbo, Chongqing and Heilongjiang from 2014 to 2015. A stratified cluster sampling method was adopted. A total of 1644 respondents, working in units related to health insurance, were selected. A multivariate logistic regression model was employed to identify any association between dissatisfaction and the features of the ongoing integration reforms of health insurance schemes. Overall, about 47.6% of the respondents reported dissatisfaction with the ongoing integration reforms. This high level of dissatisfaction was found to be associated with ineffective outcomes of the integration reforms in achieving management system improvement [odds ratio (OR) = 1.846], inequity reduction (OR = 1.464) and actual coverage expansion (OR = 1.350), as perceived by the respondents. Those who were satisfied with the previously separated health insurance schemes (OR = 0.643), and those who preferred other policy options for achieving a UBMIS (OR = 1.471) were more likely to report dissatisfaction with the current reforms. Higher expectations of the risk-pooling level (with ORs ranging from 1.361 to 1.661) also significantly contributed to dissatisfaction. Health insurance managers in China have conflicting opinions about the performance of piloted integration reforms. Many believe that these reforms have failed significantly to improve the management systems, narrow inequity and expand actual benefit coverage. Various strategies should be undertaken in order to address these issues, such as clarifying the administrative institution behind the merged schemes at the central level, unifying the insurance information network, developing consistent policies and bridging the differences in benefits among schemes and regions.

Keywords: Health care reform, health insurance, integration

Key Messages

- Health insurance managers in China have conflicting opinions on the performance of piloted integration reforms, substantial numbers of them adjudged that those reforms failed in significantly improving the management system, narrowing inequity and expanding actual benefit coverage.
- A variety of strategies should be taken to address it, mainly including clarifying the administrative institution at the nationwide, unifying the insurance information network, developing consistent policies and decreasing benefit differences among schemes and regions.

Introduction

As the most populous developing country in the world, China has been experiencing rapid changes not only in its economy, but also its health care system. Great efforts are being made by the Chinese government to achieve universal coverage of health care that is affordable and accessible to all citizens by establishing three basic health insurance schemes: Basic Medical Insurance for Urban Employees (BMIUE), Basic Medical Insurance for Urban Residents (BMIUR) and the New Rural Cooperative Medical Scheme (NCMS). The coverage rate of these schemes has increased remarkably, from <50% in 2005 to >95% in 2011. It is worth noting that China has achieved the largest expansion of insurance coverage in human history within such a short time frame (Yu 2015).

During the 1950s, the Chinese government established three earlier insurance schemes: government insurance for government employees, labour insurance for enterprise workers and co-operative medical insurance for rural residents. Unfortunately, all these schemes declined sharply owing to large-scale market-oriented economic and health system reforms, which led to many social problems and widespread criticism. Until the 1990s, few efforts were made to re-establish basic medical insurance schemes. BMIUE was launched in the early 1990s, targeting employees with regular, flexible or partial employment in all urban institutions, with both employees and employers contributing to the insurance funds. NCMS was introduced for rural residents in 2003, with funds coming from government subsidies, collective assistance and individual contributions. The funds were then pooled and managed by the Ministry of Health at county level. Urban residents who were covered neither by BMIUE nor NCMS could participate in BMIUR, which was established with contributions from individual members and government subsidies in 2007. Currently, BMIUE and BMIUR operate at the municipal level. Human resources and social security departments at central and local levels are responsible for formulating policies and managing the schemes' implementation. The expansion of social health insurance coverage has been considered the first step towards achieving the goal of universal health coverage (UHC) that caters for everyone by providing access to adequate health services at an affordable price (Carrin and James 2004; WHO 2005). However, it is widely accepted that the three basic health insurance schemes have also caused a high level of fragmentation in the health insurance system.

More than 2000 risk-pooling areas together with the three separate insurance schemes and not <6000 funds operate independently in China (Chen, 2008). The low level of social pooling has tremendously weakened the ability of health insurance funds. In addition to the varied financing mechanisms, the reimbursement levels and benefit packages also differ in accordance with districts, thereby causing significant inequity issues (World Bank 2010). Moreover, many complaints have been made because of the poor portability of the schemes

across locations, unsatisfactory transferability across the schemes and weak interconnections among and within the schemes. With a rapid increase in rural–urban migration and occupational mobility in China, there is a large degree of overlap among the schemes for the targeted population. It is difficult to use a specific health insurance account seamlessly across regions or schemes. Insurance scheme participants must reinsure in a new scheme or district and pay a duplicate premium when they move from district to district or change employment status. Further, a large number of migrant workers tend to be covered by more than one scheme because the separate insurance information systems enable them to claim for their expenditure repeatedly and benefit from higher reimbursement rates. According to conservative estimates, in 2010, over a hundred million residents were covered by more than one scheme, resulting in wasteful, duplicated fiscal subsidies worth more than RMB 12 billion (Wang, 2010). The large number of people covered by more than one scheme also indicates that the reported coverage rate may be much higher than the actual, while the problem of uninsured people may be under-reported.

In order to solve these fragmented issues, the Chinese government launched pilots for integration reforms in several locations in 2007, with the aim of developing a Universal Basic Medical Insurance System (UBMIS, which is one element of insurance reform that has been implemented to support China's path to UHC). By 2016, no fewer than nine municipalities and provinces and 91 counties, had implemented reforms (China Government 2016). Several places, such as Shenzhen and Dongguan merged the BMIUE, BMIUR and NCMS schemes, while most chose to integrate BMIUR and NCMS as an initial step. The reforms mainly cover three aspects: connecting different targeted populations (in accordance with different integration plans, some pilots transfer the targeted rural residents of NCMS into BMIUR, while others merge BMIUR with NCMS); unifying premiums, reimbursements and benefits (the new intention of the reimbursement rate and coverage of the benefit package follows the principle of 'choose the higher not the lower level among the old schemes'; further, in many places, different premium levels are provided as an interim measure to achieve a final uniform standard where participants are allowed to choose their premium levels with freedom); and resolving the problems with the management systems (such as by introducing a single administrative institution and merging information network systems). In addition, many areas, such as Heilongjiang have begun to expand the pooling level within the same insurance scheme and improve portability within a province, thereby preparing for further integration. In short, the measures of current integration reforms can be regarded as unifications of the targeted population, premium contributions, benefits, medical insurance catalogues and the management systems. Based on the experience of the pilots, China's State Council officially promulgated the policy of integrating rural and urban basic medical insurance schemes at the beginning of 2016 (State Council 2016); thus,

integration reforms will soon be extended to the whole country. Technically, there are two kinds of mergers. The first merges different schemes in the same pooling area; the second merges within a scheme, such as by pooling the same scheme to a higher level. Both kinds of merger could be categorized as integration; however, because the current government interventions mainly focus on the integration of different schemes in the same area, we define integration as the unification of the three basic health schemes. In addition, pooling at higher levels due to scheme integration, such as expanding county-level NCMS to municipal-level BMIUR, can also be considered integration.

Some studies have investigated the drawbacks of the fragmentation of the health insurance system in China and advocated integration as one of the reform options (Chen, 2008; World Bank 2010; Wang *et al.* 2012). However, current research on integration reform is far from adequate. Most studies have investigated the integration measures taken by various pilots; very few have documented the deficiencies of integration reforms, such as the delay in the development of an integrated information network and the lack of suitable delegation to staff from former management institutions (Pan *et al.* 2014; Sun 2015; Tian 2015). In addition, few studies have focused on empirical research from more comprehensive perspectives. At present, actual coverage expansion, inequity reduction, portability improvement, the establishment of insurance account transferability and management system improvement are the main goals of integration reforms. However, there is a scarcity of studies that have used quantitative methods to investigate how, and to what degree, these objectives have been achieved. Thus, many questions relating to integration reforms need to be answered. For example, are the current integration reforms successful or not? How do respondents and key stakeholders regard the reforms? The current study seeks to understand how insurance managers perceive the performance of ongoing integration reforms. By adopting an overall perspective, it also explores the determinants that may affect respondents' dissatisfaction. Factors from different aspects, such as expectations, motivational willingness, progress and the outcomes of the ongoing integration reforms are considered. The study also draws on the experiences of a wide range of health insurance managers, from those who develop policies to those who manage the daily transactions of funds. The findings can provide evidential support for the development of a UBMIS in China and offer lessons to those countries that are curtailing the fragmentation of their health insurance schemes.

Methods

Study design

An analytical framework (Figure 1) was built on the basis of several theories and research findings. The Donabedian model (Donabedian 1988) recommends that three dimensions, namely structure, process and outcomes, should be considered during health care assessment. The expectation confirmation theory (Oliver 1977; 1980) emphasizes the importance of the 'expectations' factor for satisfaction with outcomes. Moreover, 'risk-pooling level', 'equity' and 'coverage' factors have been considered important for an integrated health insurance system by many researchers (McIntyre *et al.* 2008; Kutzin *et al.* 2009; Orem and Zikusooka 2010). The World Bank (2010) and Wang *et al.* (2012) proposed that the factors of 'management', 'account transferability', 'portability' and 'the design and operation of previous separated health insurance schemes' were essential aspects of Chinese insurance integration reforms. Further, Wang *et al.* (2014) viewed 'expectations' and 'reform necessity' as essential factors in the implementation of health insurance integration reforms in China.

Based on this conceptual framework, a questionnaire was developed with four parts. The first part gathered information related to the demographic and socioeconomic characteristics of the respondents, such as age, gender, educational qualifications, working units and work experience. The second part measured the expectations of the respondents regarding health insurance arrangements (outcomes) in terms of achieving a UBMIS. These arrangements include premium contributions, consumer compensation, risk-pooling levels, administrative institutions and portability scope. The third part investigated the respondents' willingness to pursue integration reforms, such as their attitudes towards the structural design and operation of prior independent basic health insurance schemes and their opinions about using the integration approach to realize a UBMIS. The fourth part asked the respondents to estimate the effectiveness (outcomes) of the ongoing integration reforms, such as actual coverage expansion, inequity reduction, portability improvement, the establishment of insurance account transferability and management system improvement.

Sampling and data collection

A cross-sectional questionnaire survey was conducted during the period 2014–15. The participants were selected through stratified cluster random sampling. First, we identified three appropriate areas, namely Chongqing, Ningbo and Heilongjiang. Hospitals, social health insurance agencies, health authorities, research institutes and other relevant organizations (e.g. health information centres) were then randomly selected. The number of participating organizations was proportional to the size of the selected areas. All the staff members who were working in the units related to health insurance were invited to participate in the survey. The sample size was estimated based on the need for logistic regression analysis; thus, it was 10 times more than the number of independent variables.

A total of 1647 of the invited participants completed the questionnaire. A few returned questionnaires from these respondents contained incomplete data and were excluded from the data analysis, resulting in a final sample size of 1644. The questionnaire was administered through face-to-face interviews. The interviewers were recruited from Harbin Medical University and included health service researchers and postgraduate research students. They had to participate in an intensive training workshop before embarking on the fieldwork. Each participant was interviewed by two interviewers. In order to ensure data quality, 5% of the respondents were randomly selected and revisited by a quality control officer. The results of the data quality test showed a high level (96%) of consistency among the collected data.

Data analysis

We performed multivariate logistic regression analysis to identify the potential barriers existing in the current integration reforms of health insurance schemes.

The dependent variable

Dissatisfaction with the ongoing integration reforms was the dependent variable. It was defined as an overall dissatisfaction with the current integration reforms of health insurance schemes in China. The respondents were asked to answer the questions using a five-point Likert scale (1 = completely dissatisfied, 2 = dissatisfied, 3 = neither satisfied nor dissatisfied, 4 = satisfied and 5 = completely satisfied). A different measure was applied to the response to the following question: 'Thinking about the implementation of current integration reforms

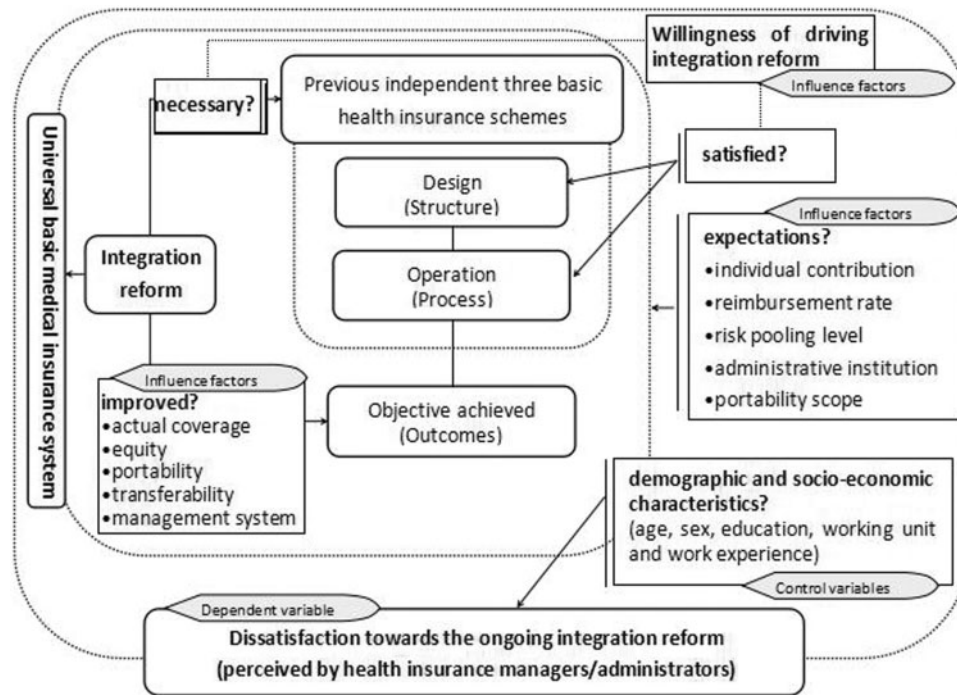


Figure 1. Analytical framework of managers' dissatisfaction towards the ongoing integration reforms.

since the pilot work carried out throughout the country, are you satisfied with the reforms in general?' Here, the rating was grouped into two categories for the purpose of logistic regression modelling: 1 = dissatisfied (including completely dissatisfied and dissatisfied) and 0 = satisfied (including neither satisfied nor dissatisfied, satisfied and completely dissatisfied).

The independent variable

Expectations of insurance arrangements

The respondents were asked to choose their preferred premium arrangements from three options: in accordance with income, in accordance with insurance package and equal contributions from members. The respondents' anticipated levels of reimbursement were set as 100%, 90–99%, 70–89% and below 70%. The respondents were also asked to choose their preferred risk-pooling levels, namely country, province, or municipal level or even lower. Three institutions were presented to the respondents in order to measure their expectations of administrative bodies: the Ministry of Human Resources and Social Security (MOHRSS); the National Health and Family Planning Commission (NHFPC) and independent third-party administration. Last, two categories were used to measure respondents' expectations of portability scope: countrywide and province-wide.

Willingness to pursue integration reforms

The respondents were asked to answer the following questions using a five-point Likert scale (1 = completely dissatisfied/completely unnecessary, 2 = dissatisfied/unnecessary, 3 = neither satisfied nor dissatisfied/neutral, 4 = satisfied/necessary and 5 = completely satisfied/completely necessary): 'Thinking about the structural design of the three basic health insurance schemes before the integration reforms, are you satisfied with the reforms in general?' 'Thinking about the operation of the three basic health insurance schemes before the integration reforms, are you satisfied with the reforms in general?' 'Do you think it is necessary for China to implement integration reforms

of health insurance schemes in order to achieve a UBMIS?' In the regression modelling, the parameters were transformed into a dichotomous measurement and coded as 1 = dissatisfied/unnecessary (including completely dissatisfied/completely unnecessary and dissatisfied/unnecessary) and 0 = satisfied/necessary (including neither satisfied nor dissatisfied/neutral, satisfied/necessary and completely satisfied/completely necessary).

Effectiveness (outcome) of the ongoing integration reforms

The respondents were asked to answer the question, 'How do you feel about the outcome/progress of the ongoing integration reforms in relation to the following aspects: actual coverage expansion, inequity reduction, portability improvement, the establishment of insurance account transferability and management system improvement?' Each item was assessed on a 10-point scale, ranging from totally ineffective to totally effective. In the regression model, the parameters were transformed into a dichotomous measurement and coded as 1 = ineffective (including 1–5 points) and 0 = effective (including 6–10 points).

Control variables

We controlled the confounding influence of demographic and socio-economic characteristics (age, gender, education, etc.) of the respondents in the statistical analysis.

Statistical analysis

Data were analysed using SPSS 21.0 software. Statistical descriptions (percentages and frequency charts) were used to describe the sample in terms of various parameters and to report the reasons for dissatisfaction and needlessness. We initially performed χ^2 tests to determine the association between health managers' dissatisfaction and each individual variable. We then constructed two models: one including all independent variables (using the Hosmer–Lemeshow

test, whereby $\chi^2 = 9.494$, $P = 0.302$) and another including only those variables that showed statistical significance ($P < 0.05$) in the chi-square tests (using the Hosmer–Lemeshow test, whereby $\chi^2 = 8.259$, $P = 0.409$). The latter model demonstrated a better fit and reported slightly different odds ratios (ORs) compared with the first. Consequently, we only present the results of the second model (method = ENTER, entry = 0.05, removal = 0.10).

Results

Integration reforms in participating areas

Chongqing, Ningbo and Heilongjiang had made similar strategic choices during their integration reforms. Initially, they all chose to merge NCMS with BMIUR and form a new scheme, Basic Medical Insurance for Urban and Rural Residents (BMIURR), targeting urban and rural residents, with contributions from individual members and government subsidies. Subsequently, they all selected MOHRSS as the administrative institution and proceeded to pool and manage the funds at the municipal level. BMIURR provided two premium levels. Residents were allowed to select one of them and not make decisions in accordance with their urban–rural identities. Higher premium levels had better benefits and reimbursements.

Respondents' characteristics

Most of the respondents (62.9%) were female 59.9% were aged between 30 and 44 years. Most held a bachelor's degree or above (81.2%) and had a minimum 10 years of work experience (58.0%). Further, 41.4% of the respondents worked in hospitals.

Dissatisfaction with the ongoing integration reforms

Table 1 presents the characteristics of the respondents and overall dissatisfaction with the ongoing integration reforms. In total, nearly half (47.6%) of the respondents are dissatisfied with the current integration reforms in terms of the unification of the three basic health insurance schemes in China. The χ^2 tests reveal that dissatisfaction with the ongoing integration reforms is associated with the respondents' expectations, their willingness in terms of implementation, and the perceived outcomes and progress of the ongoing reforms. The respondents who think that the ideal risk-pooling level should be higher and the ideal portability scope should be nationwide have a higher percentage of dissatisfaction. Those who feel more satisfied with the design and operation of prior health insurance schemes are more likely to express dissatisfaction with the ongoing integration reforms. Moreover, the respondents who feel that integration reforms are unnecessary are more likely to express dissatisfaction. Those respondents who consider the current integration reforms to have failed in terms of coverage expansion, inequity reduction, portability improvement, the establishment of insurance account transferability and management system improvement also show greater dissatisfaction.

Logistic regression model

After controlling for the confounding factors, the logistic regression model identified six significant predictors ($P < 0.05$) for dissatisfaction with the ongoing integration reforms. The predictors are (1) a perception of the low impact of the ongoing integration reforms on management system improvement (OR = 1.846), (2) inequity reduction (OR = 1.464), (3) actual coverage expansion (OR = 1.350), (4) satisfaction with the structural design of prior health insurance schemes (OR = 0.643), (5) other opinions on achieving a UBMIS

(OR = 1.471) and (6) the expectation of a higher risk-pooling level (OR ranging from 1.361 to 1.661). Table 2 presents the details.

Reasons for dissatisfaction with the ongoing integration reforms

Figure 2 presents the reasons for dissatisfaction with the ongoing integration reforms. Of those who express dissatisfaction with the ongoing integration reforms ($n = 782$), 62.3% blame the lack of clarity about the administrative institution at the national level. A further 60.3% complain that the insurance information networks have different schemes even after integration. The respondents also express their dissatisfaction with other factors such as the notable differences in reimbursement rates and benefit packages that remain (55.8%), the low level of risk-pooling (53%), the 'double insured' and 'uninsured' problems that remain as critical issues (52.7%), poor portability (51.5%) and the huge differences in premium payments and financing (50.7%). Further, 46.5% of the respondents complain that the various policies lack coordination, while 31.7% say that the transition across schemes remains difficult.

Reasons why respondents believe that it was unnecessary to introduce the ongoing integration reforms

Of the 1644 respondents, 762 (46.4%) thought it was unnecessary to integrate the three basic health insurance schemes. Figure 3 shows the top three reasons why these respondents felt it was unnecessary to introduce the ongoing integration reforms. These reasons are as follows: (1) The need to reduce the differences in reimbursement rates and package coverage are more important (67.6%) compared with the policy options of the integration reforms, (2) the infeasibility of integrating the schemes immediately (62.9%) and (3) bridging the differences between premium payments and financing ability is of foremost importance (51.4%). Further, 50.4% of the respondents say that it is more important to elevate the risk-pooling level. In addition, 36.4% of the respondents feel that creating interconnections among schemes is more important and 33.7% believe that integration with a different scheme will not change the uneven distribution of health resources.

Discussion

Nearly half of the respondents (47.6%) were dissatisfied with the ongoing integration reforms in terms of the unification of the three independent basic health insurance schemes, even though such integration is deemed by the authorities as the most efficient way towards realizing the goal of a UBMIS in China. The high dissatisfaction rate among the respondents indicated that many obstacles hinder progress on the path to a UBMIS.

Health insurance managers were overwhelmingly concerned about the perceived progress and outcomes of the ongoing integration reforms, in which the integrations of the management systems, equity and actual coverage were some of the most important issues of concern. The respondents rated the performance of the integration reforms based on the improvements perceived in terms of the foregoing factors. Further, the willingness to integrate remained an important determinant for those people pursuing integration reforms, as did the satisfaction associated with the achievement of previously fragmented health insurance schemes and the attitude toward the need to integrate the prior schemes. In addition, differences were also found in the dissatisfaction rating of those who had different expectations about risk-pooling levels.

Table 1. Characteristics of respondents and overall dissatisfaction towards the ongoing integration reform (n = 1644)

Characteristic of respondents	n (%)	Dissatisfied n (%)	χ^2	P-value
Sex			1.465	0.226
Male	610 (37.1)	302 (49.5)		
Female	1034 (62.9)	480 (46.4)		
Age (years)			1.858	0.602
<30	243 (14.8)	113 (46.5)		
30–44	985 (59.9)	462 (46.9)		
45–59	356 (21.7)	174 (48.9)		
≥60	60 (3.6)	33 (55.0)		
Level of education			6.942	0.074
Junior college or below	309 (18.8)	130 (42.1)		
College	982 (59.7)	476 (48.5)		
Master	278 (16.9)	133 (47.8)		
Doctor	75 (4.6)	43 (57.3)		
Working experience (years)			2.763	0.251
<5	319 (19.4)	157 (49.2)		
5–9	372 (22.6)	163 (43.8)		
≥10	953 (58.0)	462 (48.5)		
Working unit			3.784	0.436
Hospitals	681 (41.4)	338 (49.6)		
Health authority	346 (21.0)	162 (46.8)		
Social insurance organization	368 (22.4)	165 (44.8)		
Domestic institutes and colleges	122 (7.4)	62 (50.8)		
others	127 (7.7)	55 (43.3)		
Expectations of insurance arrangements				
Individual contribution			5.394	0.067
Varied by income	747 (45.4)	362 (48.5)		
Varied by insurance packages	568 (34.5)	282 (49.6)		
Equal contributions from members	329 (20.0)	138 (41.9)		
Reimbursement rate			4.123	0.249
100%	424 (25.8)	199 (46.9)		
90–99%	851 (51.8)	393 (46.2)		
70–89%	332 (20.2)	174 (52.4)		
<70%	37 (2.3)	16 (43.2)		
Risk pooling level			9.435	0.009
Country level	480 (29.2)	250 (52.1)		
Province level	813 (49.5)	387 (47.6)		
Municipal level and below	351 (21.4)	145 (41.3)		
Administrative institution			4.196	0.123
MOHRSS	554 (33.7)	267 (48.2)		
NHFPC	492 (29.9)	249 (50.6)		
Independent third party administration	598 (36.4)	266 (44.5)		
Portability scope			3.879	0.049
Country-wide	1240 (75.4)	607 (49.0)		
Province-wide	404 (24.6)	175 (43.3)		
Willingness of driving integration reform				
Satisfaction with the structural design of previous independent three basic health insurance schemes			15.767	0.000
Dissatisfied	1034 (62.9)	453 (43.8)		
Satisfied	610 (37.1)	329 (53.9)		
Satisfaction with operations management of			3.921	0.048

(continued)

Table 1. (continued)

Characteristic of respondents	n (%)	Dissatisfied n (%)	χ^2	P-value
previous independent three basic health insurance schemes				
Dissatisfied	954 (58.0)	434 (45.5)		
Satisfied	690 (42.0)	348 (50.4)		
The necessity of schemes integration reform			10.385	0.001
Unnecessary	762 (46.4)	395 (51.8)		
Necessary	882 (53.6)	387 (43.9)		
Perceived impacts of the ongoing integration reform				
Actual coverage expansion			4.860	0.027
Ineffective	982 (59.7)	489 (49.8)		
Effective	662 (40.3)	293 (44.3)		
Inequity reduction			6.015	0.014
Ineffective	947 (57.6)	475 (50.2)		
Effective	697 (42.4)	307 (44.0)		
Portability improvement			7.591	0.006
Ineffective	981 (59.7)	494 (50.4)		
Effective	663 (40.3)	288 (43.4)		
Insurance account transferability establishment			4.108	0.043
Ineffective	990 (60.2)	491 (49.6)		
Effective	654 (39.8)	291 (44.5)		
Management system improvement			20.656	0.000
Ineffective	1112 (67.6)	572 (51.4)		
Effective	532 (32.4)	210 (39.5)		

Barriers to management system improvement

A good management system is essential for the effective operation of insurance funds and the achievement of a UBMIS (Maarse *et al.* 2005; Mathauer and Nicolle 2011). With regard to dissatisfaction with the integration reforms, it was found that the OR for those who perceived inefficiency in the efforts to improve the management systems was 1.85 times higher compared with the OR corresponding to those who perceived such efforts to be effective. This was the most important factor that contributed to the dissatisfaction.

Ambiguous ownership of integrated insurance schemes

The competition between the MOHRSS and NHFPC in their attempts to seize more administrative power was an issue that ran through the entire integration reforms. In order to defend the legitimacy of its ownership of the merged scheme, the NHFPC reported that 72% of 171 countries and regions worldwide have placed social insurance administration under the authority of the Ministries of Health (NHFPC 2013). However, this figure was soon refuted by the MOHRSS, which argued that the social medical insurance systems of 52.7% of 74 countries and regions are run by the Ministries of Social Insurance (China labornews net 2013). As a result, the State Council has left the decision about ownership of the merged scheme to local governments. As of early 2016, parts of the reformed provinces and province-level municipalities, such as Guangdong, Zhejiang, Shanghai, Chongqing, Beijing and Tianjin had transferred NCMS administration to the MOHRSS, while some pilot schemes such as those of Shaanxi and Anhui provinces had placed administrative authority under the NHFPC. In addition, several places, such as Fujian Province chose to develop a third party to

Table 2. Logistic regression analysis on the dissatisfaction with integration reform

Variables	Walds	P-value	OR	95% CI	
Expectations of insurance arrangements					
Risk pooling level	12.017	0.002			
Country level	12.003	0.001	1.661	1.246	2.212
Province level	5.342	0.021	1.361	1.048	1.766
Municipal level and below (reference)					
Portability scope					
Country-wide	2.746	0.098	1.220	0.964	1.544
Province-wide (reference)					
Willingness of driving integration reform					
Satisfaction with the structural design of previous independent three basic health insurance schemes					
Dissatisfied	17.278	0.000	0.643	0.522	0.792
Satisfied (reference)					
Satisfaction with operations management of previous independent three basic health insurance schemes					
Dissatisfied	2.415	0.120	0.851	0.695	1.043
Satisfied (reference)					
The necessity of schemes integration reform					
Unnecessary	12.930	0.000	1.471	1.192	1.816
Necessary (reference)					
Perceived impacts of the ongoing integration reform					
Actual coverage expansion					
Ineffective	7.859	0.005	1.350	1.094	1.664
Effective (reference)					
Inequity reduction					
Ineffective	12.581	0.000	1.464	1.186	1.807
Effective (reference)					
Portability improvement					
Ineffective	3.569	0.059	1.225	0.992	1.511
Effective (reference)					
Insurance account transferability establishment					
Ineffective	3.119	0.077	1.203	0.980	1.476
Effective (reference)					
Management system improvement					
Ineffective	29.297	0.000	1.846	1.479	2.305
Effective (reference)					
Constants	34.740	0.000	0.245		

take charge (Anhui HFPC 2016; Xinhuanet 2016). Thus, because the administrative institution that controls the integration reforms has remained unclear nationwide, confusion has resulted about the direction to be taken and the next stage of implementation.

Conflicting opinions on the advantages and disadvantages of different ownership

Of the respondents, 29.9% favoured the NHFPC to manage the insurance system and described the following advantages of such an approach. First, it would reduce the co-ordination costs because the NHFPC is more familiar with health services. Second, it would help

with the conduct of a coordinated reform of hospitals, insurance and drugs (Meng *et al.* 2015). The advantages of using the MOHRSS as the administrative institution (as listed by 33.7% of the respondents) included the following. The MOHRSS would regulate health service provision effectively and be a more suitable representative of customer benefits, because it does not have an intimate relation with hospitals, which means that no conflict of interest is present (Xiong *et al.* 2011). The remaining 36.4% of the respondents proposed the creation of an independent third-party administrative institution. They considered that such an institution would help to ensure the safety of the funds because it could separate regulations from operations and avoid a power struggle between the MOHRSS and NHFPC (Lin and Wang 2016). However, no differences were found in the dissatisfaction of those who had different preferences for the various administrative institutions of the insurance system. It was very evident that the respondents were more concerned about the perceived progress and outcomes of the merged management authority.

Failure to address the deep-rooted fragmentation of previously independent health insurance schemes by the merged management authority

Although many pilots have merged management authority, the corresponding management information systems have not improved to the desired extent. Most areas have saved the old BMIUE information system and developed a new system for the integrated BMIUR and NCMS (Tang 2016). Hence, the schemes have different information networks. Further, because the information systems were developed locally, different versions of such systems co-exist within one province (Wang 2016). In addition, the insurance information systems cannot integrate and share information about medical treatments and medicine. Thus, hospitals cannot track the treatment and reimbursement information of their patients (Tian 2015). Other issues related to management system integration are as follows. First, state health regulatory and administration functions have not been separated in the pilot schemes undertaken by the NHFPC and MOHRSS. Second integration has sharply increased the workload of management agencies, resulting in labour shortages. Moreover, because of a lack of staff and money, many employees from former administrative institutions cannot be transferred to the departments of the merged management systems (Jin 2012). Third, policies launched by different administrative institutions and regions have lacked coordination, resulting in a wider gap between the merged schemes of different regions. This situation has further augmented the difficulties faced in expanding integration reform to larger areas (Li 2015).

Diminished willingness for integration reform

The willingness to integrate remains an important determinant for encouraging people to engage in integration reforms. Those respondents who were satisfied with the structural design of the previously independent three basic health schemes, and those who had different opinions about achieving a UBMS, obviously expressed unwillingness to take part in integration reforms and were more likely to be dissatisfied with the ongoing integration reforms.

Satisfaction with previously independent health insurance schemes

Our results showed that only a small proportion (37.1%) of the respondents reported satisfaction with the structural design of previously independent basic health schemes. According to these respondents, the design of the prior system was identity-based and varied by district

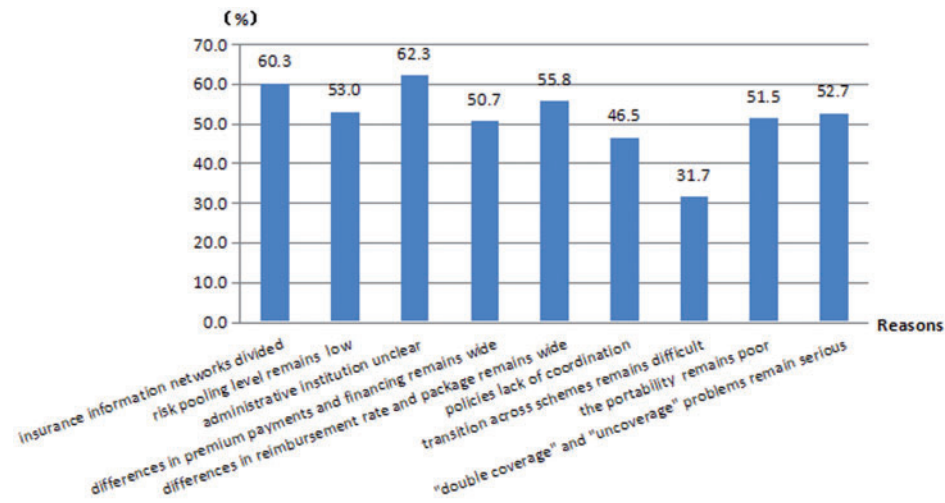


Figure 2. Reasons for dissatisfaction with the ongoing integration reforms.

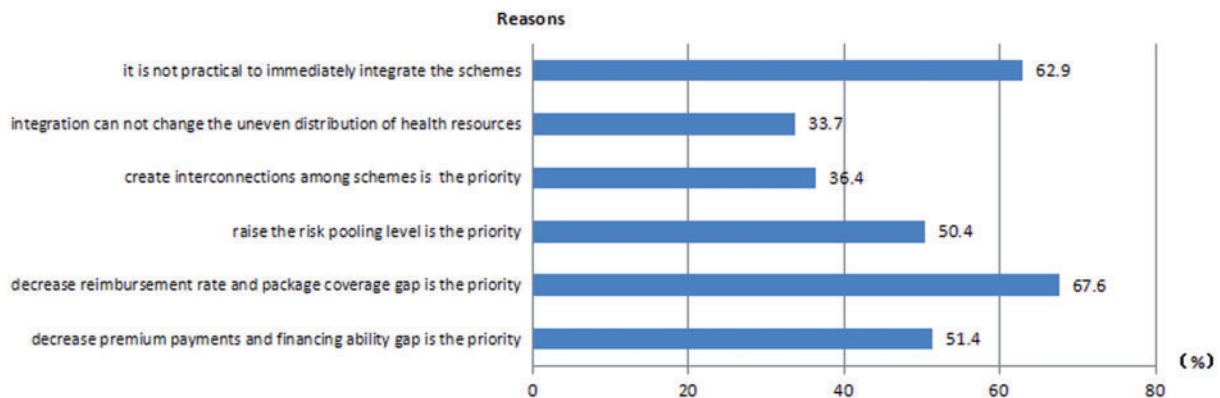


Figure 3. Reasons why respondents felt it unnecessary to introduce the ongoing integration reforms.

(Wang *et al.* 2012), thereby driving very successful coverage expansion. Until 2003, only 94.01 million employees were covered; however, with the establishment of the three basic health insurance schemes, the number of employees covered by health insurance increased to >1.3 billion in 2014 (China xinwen lianbo 2012). Additionally, the respondents said that because of the structural design, the financing ability, reimbursements and benefit package coverage of the schemes have improved greatly since their initiation (NHFPC 2016).

Different opinions about achieving a UBMIS

Our study identified that nearly half of the respondents (46.4%) thought it was unnecessary to integrate the insurance schemes (Qiu *et al.* 2011; Wang *et al.* 2014). Taking into account the progress and outcomes of prior integration reforms, many respondents argued that integration reforms should not be regarded as the only policy choice for achieving a UBMIS because such reforms have failed to significantly reduce the large gap between the three health insurance schemes. Instead, a more effective and practical way should be encouraged in order to enhance the self-perfection efforts of these three schemes (He and Meng 2015). It was felt that reducing the differences between the reimbursement rate and benefit package coverage (according to 67.6% of respondents) and premium

payments and financing (according to 51.4% of respondents) among the various health insurance schemes was more important. Even though integration between BMIUR and NCMS is currently underway, 62.9% of the respondents believed that it would be very difficult to promptly integrate many aspects within the framework of the merged scheme. Findings from other studies have also supported such opinions (World Bank 2010; Pan *et al.* 2014).

The challenges of more effective outcomes from integration reforms

Besides the perceived unsatisfactory outcomes regarding management system improvement, our study also revealed that the perceived ineffectiveness of ongoing integration reforms in terms of inequity reduction (OR = 1.464) and actual coverage expansion (OR = 1.350) were the main causes for the high dissatisfaction level. This finding demonstrated that the merged schemes have not addressed most of the outstanding problems effectively. Many integrated pilots have reported that the identity barrier between rural residents and urban residents has been overcome and that all residents are covered by one integrated basic medical insurance scheme for urban–rural residents, with the same government subsidy and administered by an integrated single government agency (Zhang and Fan 2011). Nonetheless,

establishing the same premiums, reimbursements, and benefit levels among all enrollees of the newly integrated scheme is still proving to be highly challenging, causing inequity and actual coverage problems to persist (Meng *et al.* 2015).

Inequity reduction

Most of the pilots provided two or three levels of premium choices for all residents. Thus, residents can select levels in accordance with their financial abilities (Chengdu People's Government 2008; Jinhua People's Government 2012; Tianjin People's Government 2009). A higher premium level provides higher reimbursement. According to some research, the differential premium options have often led to unsatisfactory results. For example, a low-income group may subsidize a high-income group, which may mean that the latter group use better medical services than the former. The situation whereby rural residents subsidize urban residents in the central and western regions of China illustrates this phenomenon (Li *et al.* 2013; Gu 2013; Gu *et al.* 2013). Moreover, in some areas, the local governments provide more subsidies for higher premium enrollees, thereby exacerbating the inequality problem (He and Wu 2016). In addition, although rural residents are covered by a greater number of contracted providers than urban residents following integration, the uneven distribution of health resources has not changed (Li 2015; Zhou 2016). Because the integration reforms were launched independently by local governments, they have not contributed greatly to reducing the inequality among regions.

Actual coverage expansion

Following integration, a voluntary enrollment policy was adopted as part of the new scheme. Owing to the increase in premiums, albeit modest, individuals who experienced financial difficulties were more likely to discard the scheme. Further, many people were worried that the coverage rate could decline during the integration reforms. The reason given was that the significant number of double-covered cases would be eliminated. According to the MOHRSS, over 2.5 million double-covered cases were eliminated during the integration reform in a single province, Shandong (Xinhuanet 2016). Taking into account the voluntary enrollment policy and the short period during which the newly integrated insurance program has operated (Sun *et al.* 2014), the ongoing integration reforms will play a minor role in actual coverage expansion over the short term.

Expectations regarding the risk-pooling level

With regard to risk-pooling level, it is not the case that the higher the level, the better it is. However, low risk-pooling levels obviously translate into weaker risk-sharing ability, vulnerable bargaining power, and poor portability. In our study, we identified that the respondents with expectations of a higher risk-pooling level could make a difference of up to 1.661 times in the OR of dissatisfaction with the ongoing integration reforms. Despite most (78.7%) of our respondents reporting that their ideal risk-pooling level was either the provincial or national level, most risk pools of newly integrated schemes operate at the municipal level; thus, the financial risks are borne by local governments (State Council 2016). First, many integration pilots have simply placed the separate health insurance funds under one administrative institution and launched the same financing, reimbursement and benefit standards. They have not merged the individual funds together. Hence, hospitals and doctors are still paid from different funds. Second, in order to avoid a reduction in reimbursements and benefits during the integration reforms, local governments have had to increase their investments. These increases

have caused significant fiscal pressure. Without additional funds from the governments at provincial and national levels, not only has the financial risk not been addressed effectively, the efforts to enhance portability have been severely hampered (Gao *et al.* 2016).

Conclusion and policy recommendations

Globally, there is no single standard way to achieve a UBMIS. China chose to prioritize its policy intervention through integration reforms owing to its own circumstances. However, the piloted integration reforms have failed to significantly improve the management systems, reduce inequity and expand actual coverage. This failure has caused a high level of dissatisfaction. The expectation of high risk-pooling levels and a lack of willingness for integration reforms have also contributed significantly towards dissatisfaction.

This study offers some policy implications for China's ongoing integration reforms of basic health insurance schemes. Various strategies should be taken into account in order to improve the management systems. These include clarifying the administrative institution at the national level, developing a unified insurance information network, separating the health regulatory and administrative functions, properly reorganizing human resources and co-ordinating policies. Greater clarity of the top-level system design of a UBMIS and more government subsidies for low-income residents, rural residents and less-developed regions could also be effective ways to improve the performance of the ongoing integration reforms. Further, a provincial (or national) risk-pooling level and mandatory enrollment ought to be considered in the long term.

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Conflict of interest statement. None declared.

Ethical approval

The study protocol was reviewed and approved by the Research Ethics Committee of Harbin Medical University.

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