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Deployment of workforce in global health: what are the priorities for China?

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Abstract

Background: China has increasingly emerged as an important player in global health. However, compared to the developed countries, China still lacks the sufficient human resources for global health engagement with limited necessary qualified capacity. The priorities for the deployment of Chinese workforce in global health engagement remains unclear. This study aims to identify the priorities of the deployment of Chinese global health workforce by exploring the core competencies for Chinese global health workforce, factors influencing the deployment and the approach of deployment.

Method: A total of 148 key stakeholders from 10 provinces in China conducting global health program during the recent 3 years were selected as the study sample. A structured questionnaire was developed to collect the data on four aspects, including the general

information, core competencies, factors influencing deployment, and the deployment way. The questionnaire was distributed to the respondents through an online survey tool. All original data was exported to Microsoft Excel 2010 to calculate the frequency and percentage of every option. The descriptive analysis was made on the priorities of deployment of Chinese global health workforce.

Results: More than half of respondents 51.4% (76/148) regarded “communication” as the most important competency of Chinese global health workforce while a large portion of Chinese Embassies 50.0% (6/12) and international organizations 75.0% (12/16) believed that “professional skills” was the paramount. In addition, 58.1% (86/148) of the participants agreed that incentive factors (salary, professional title, etc.) are the first factors influencing the deployment, whereas, a majority of 75% (12/16) international organization stakeholders emphasized “security” as the foremost factor. Furthermore, 60.8% (90/148) thought that staff should be deployed align with the needs of global health program implementation.

Conclusion: The study shows the priorities of the deployment of Chinese global health workforce, including strengthening the competency of communication and professional skills, stressing the personal security and incentives, and catering to the program implementation.

Key words: Global health, Chinese workforce, Priorities, Competencies, Deployment

Background

China has always been a strong advocate and practitioner of global health, with a firm commitment to improvement of global health by making contributions to the best of its ability [1]. China’s Belt and Road Initiative took health as the core of development with the goal to improve health of the people in the countries alongside [2]. To continue deepening the South-South Cooperation, Chinese President Xi Jinping proposed the

China-Africa Public Health Cooperation during his visit to Africa in December 2015 [3]. All these highlight the importance and urgent need of human resources, the critical component of health system, for global health at the national level in China [2].

However, China lags behind in the recruitment and deployment of global health workforce in comparison with some developed countries [4]. Chinese human resources for the global health engagement is insufficient, with training quality failing to meet the actual needs for global health engagement. The shortage of human resources has long been a problem hindering the development of China's global health engagement. For instance, the United States conducted an all-around cultivation of global health human resources by enhancing resource investment and improving training courses and the workforce proved to play a core role in various global health events [4]. China's cultivation of global health personnel started late, with its first training course opened in 2009 [5]. As China increasingly plays a more important role in global health, the deployment of the human resources with global vision has become crucial [6].

China urgently needs to deploy global health personnel, yet the priorities for the deployment of Chinese workforce in global health engagement remain unclear. This study aims to identify the priorities of the deployment of Chinese global health workforce by exploring the competencies of Chinese global health workforce, factors influencing the deployment and the way of their deployment.

Methods

Study design

The respondents were totally 148 key stakeholders from 46 organizations directly involved in global health, covering 3 international organizations and 43 Chinese organizations composed of five departments, namely Chinese domestic administrative departments, Chinese professional institutes, Chinese Embassies, and foreign aid medical teams from 10 Chinese provinces. The selection criteria in each department

were : (i) In Chinese domestic administrative governments, about 3-4 staff members engaged in international cooperation were selected given the limited number involved in government departments; (ii) In Chinese professional institutes, about 1-2 relevant leaders and 2-3 key members were selected from each institute undertaking the global health program; (iii) In Chinese Embassies in Africa where the corresponding Chinese medical teams are located, around 1-2 relevant counselors from each embassy were selected; (iv) In Chinese medical teams in Africa, about 1-2 team leaders and 2-3 key members were selected from each team; (v) In international organizations, about 3-4 project leaders and participants were selected from each institute. The selection criteria for each respondent were: (i) responsible or participating in the management, implementation, monitoring, and evaluation of global health programs; (ii) responsible or participating in global health programs for more than 6 months; (iii) have an intermediate professional title or above. Those who met all three criteria were targeted respondents. The respondents' demographic information is presented in Table 1.

Questionnaire development

The questionnaire was developed and adapted by 10 senior professionals with at least 5 years of experience in global health and went through 3 rounds of expert consultations before conducting pretests. It was then piloted among 15 respondents who had at least 3 years' experience in global health. The questionnaire was further revised and finalized based on their feedback. The final questionnaire had four parts: general information; core competencies; factors influencing the deployment; deployment way.

Data collection

The survey was conducted from August 27th to December 31st, 2020. Investigators contacted targeted respondents via WeChat and sent those the link to the e-questionnaire (on website: <https://www.wjx.cn/>). Participation in the survey was fully voluntary, and written informed consent was obtained from each participant. The objectives of the study, confidentiality of individual information, and other ethical considerations mentioned in the survey guidelines were explained to the participants prior to data

collection [7]. Altogether, 148 questionnaires were collected.

Data processing and analysis

All original data of this web-based questionnaire were exported to Microsoft Excel 2010 to automatically calculate the frequency and related percentage of every answer to each question. The percentage was calculated based on the formula below: percentage = number of people who chose this option/number of people who complete the question * 100%. The higher the percentage, the more people chose this option.

Results

Demographic characteristics of participants

Of 150 questionnaires distributed, 148 were collected with the effective response rate of 98.7%. Table 1 shows the demographic characteristics of the study respondents by number and percentage. Among the participants, 62.2% (104/148) were from Chinese departments who are in charge of deploying global health workforce and 37.8% (56/148) were from Chinese Embassies, Chinese foreign aid medical teams, and international organizations who have rich experience in global health. Regarding global health experience, 90.5% (134/148) of participants had more than 3 years' experience in global health and 16.1% (24/148) had over 10 years work in global health.

Table 1 Demographic information of stakeholders from five departments related to China's global health engagement

| Variable | Description | Frequency (N) | Percentage (100%) |
|-----------------|-------------------------------------|----------------------|--------------------------|
| Gender | Male | 96 | 64.9 |
| | Female | 52 | 35.1 |
| | Total | 148 | 100 |
| Departments | Domestic administrative departments | 38 | 25.7 |
| | Professional institutes | 54 | 36.5 |
| | Embassies | 12 | 8.1 |
| | Foreign aid medical teams | 28 | 18.9 |

| | | | |
|-------------------------------|-----------------------------|-----|------|
| | International organizations | 16 | 10.8 |
| | Total | 148 | 100 |
| Related experience (years) | < 3 | 14 | 9.5 |
| | 3~5 | 80 | 54.1 |
| | 5~10 | 30 | 20.3 |
| | >10 | 24 | 16.1 |
| | Total | 148 | 100 |

Core competencies

Fig. 1 shows the percentage of core competencies held by five different departments to answer the question of “what is the most important competency for Chinese global health workforce”. More than half of respondents 51.4% (76/148) believed that “communication” was the paramount competency for global health workforce followed by “professional skills” 29.7% (44/148). However, a majority of departments valued the “communication” most while Chinese Embassies and international organizations regarded “professional skills” as the core competency, accounting for 50.0% (6/12) and 75.0% (12/16) respectively. The survey results show that global health workforce is expected to have various competencies, “communication” and “professional skills” come first followed by “team work”, “coordination” and “experience abroad.”

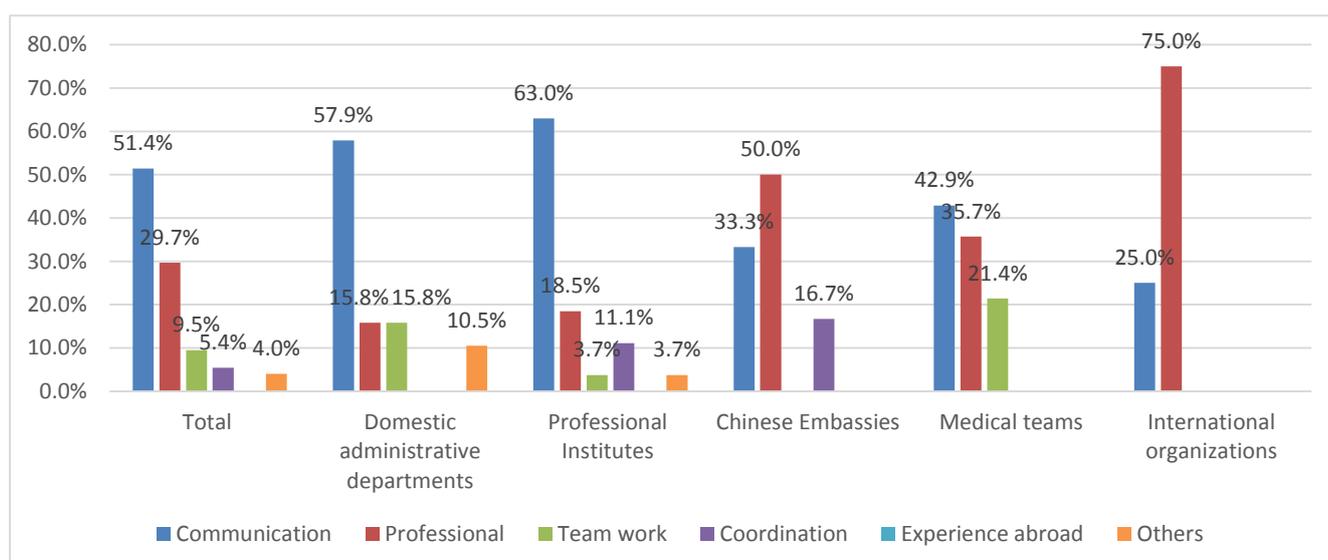


Fig. 1 Percentage of core competencies for Chinese global health workforce by five different departments

Factors influencing the deployment

Fig. 2 presents the factors influencing the deployment by five departments in answering the question of “what is the foremost factor influencing Chinese global health workforce by five departments. “Incentives” (i.e., salaries, professional titles) were regarded as the first driving force by most departments including Chinese domestic administrative departments, professional institutes, Embassies, and foreign aid medical teams. However, a majority of respondents 75.0% (12/16) from international organizations maintained that the “security” was the prioritized factor. Therefore, “incentives” and “security” might be emphasized by the policy makers in China when deploying global health workforce.

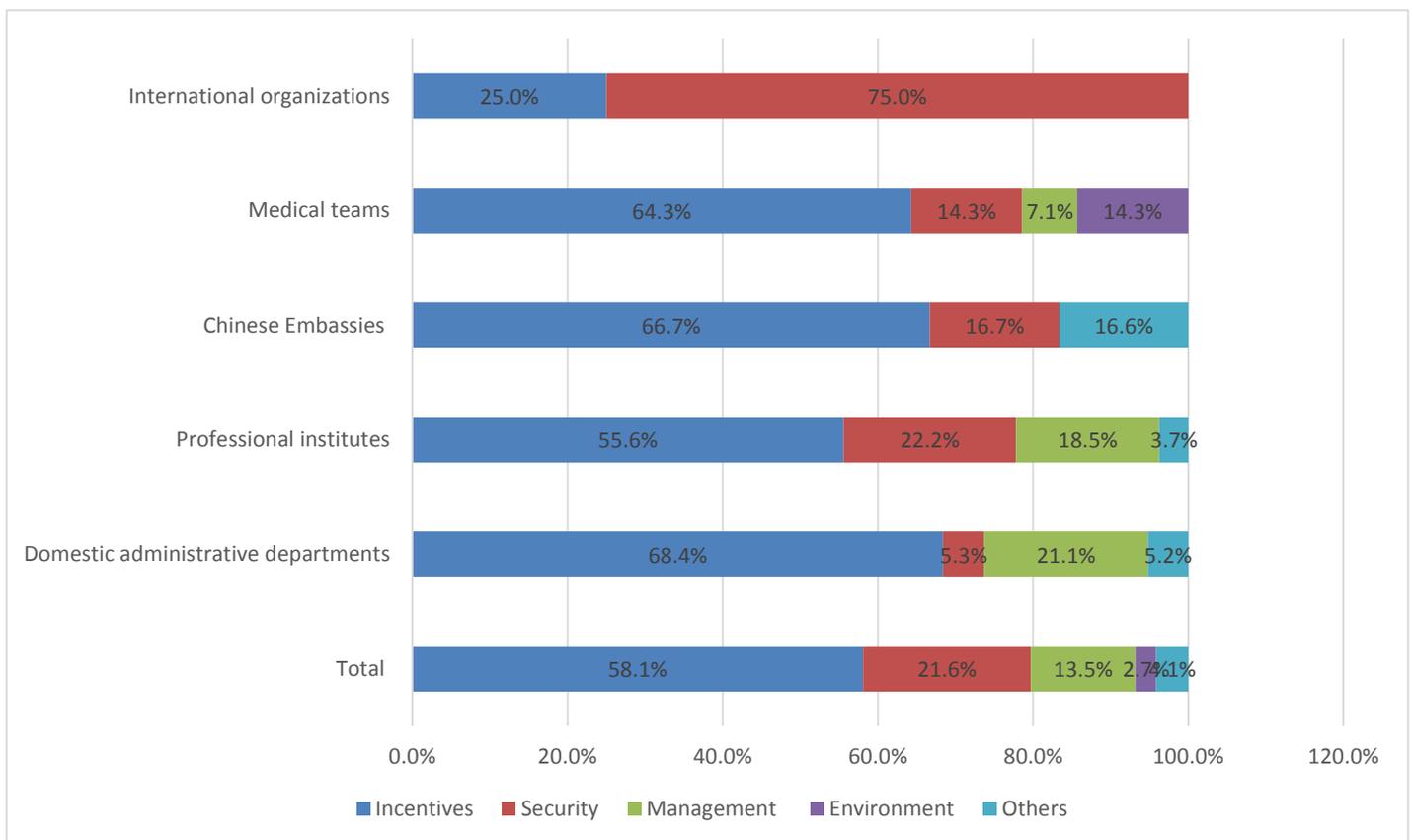


Fig. 2 Percentage of factors influencing the deployment of Chinese global health workforce held by five different departments

Way of deployment

Fig. 3 shows the attitude of the respondents on the deployment way of Chinese global health workforce based on the question of “what way do you think Chinese global health staff should be deployed”. It showed that 60.8% (90/148) respondents at large held that the deployment of human resources for global health was better to be project-based deployment. The findings suggested that the deployment of Chinese global health workforce couldn't be fixed but might be in consistent with the project needs.

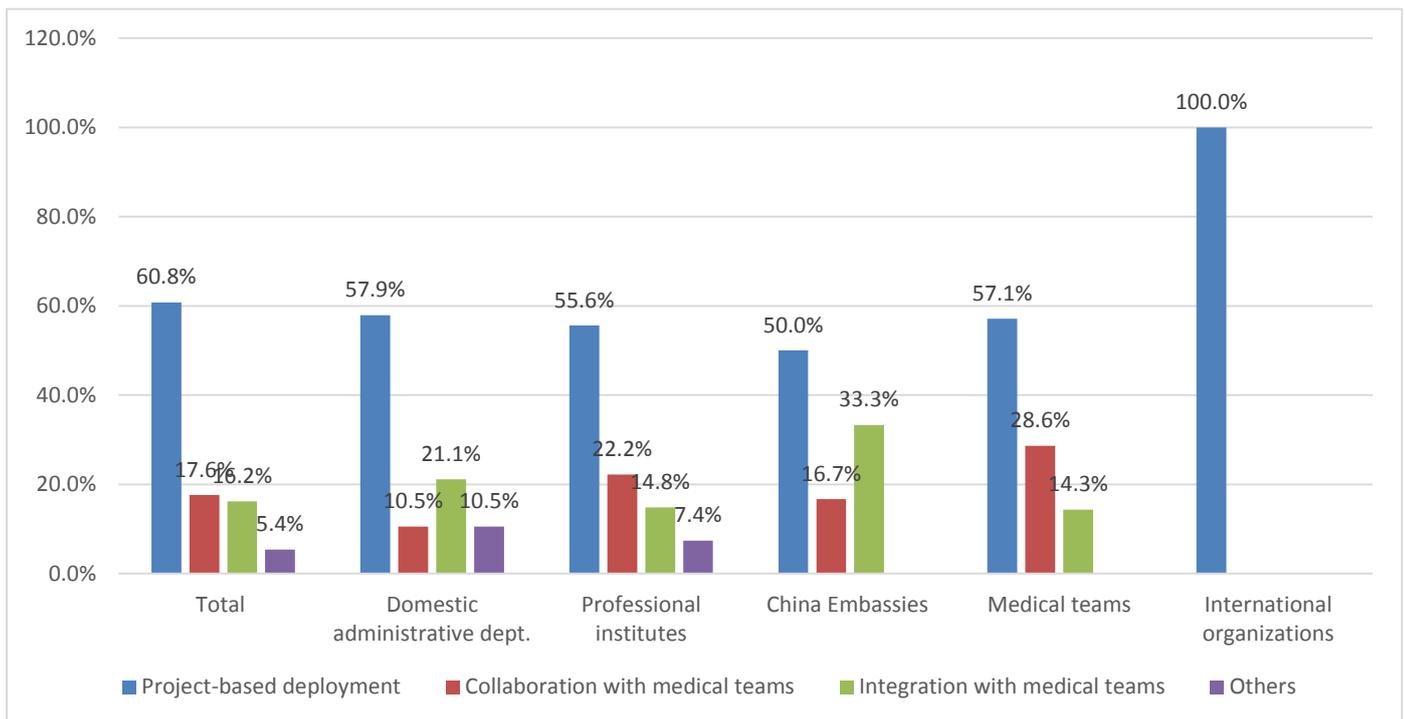


Fig. 3 Percentage of deployment way* of Chinese global health workforce held by five different departments

*Three alternative deployment ways of Chinese global health workforce. Project-based deployment is to deploy global health workforce align with the project needs. Collaboration with medical teams is to deploy workforce in cooperation with medical teams, e.g. to live together with medical teams but to work separately. Integration with medical teams means to deploy Chinese global health workers as a member of foreign aid medical teams.

Discussion

This study was the first survey in China on the deployment of Chinese global health

workforce. The most noteworthy findings were three priorities identified in the study: (i) The competencies of communication and professional skills were emphasized among Chinese global health workforce; (ii) The incentives and securities for the deployment of Chinese global health workforce were stressed; (iii) Project-based deployment of Chinese global health workforce was highlighted.

Strengthening competency of communication and professional skills

As shown in Fig.1, the competency of professional skill was regarded as the top priority by Chinese Embassies (50.0%) and international organizations (75.0%) for Chinese workforce for global health. However, a majority of stakeholders from administrative and implementation departments who deploy global health professionals, considered “communication” as the prioritized competency. Communication remaining to be a challenge for the global health workforce may attribute to the limited field experience of China’s global health engagement [8]. This result is coherent with previous studies that recognized language and communication as one of the main challenges for Chinese global health workforce and “both sides (Chinese and African professionals) need to strengthen communication to overcome language and cultural barriers” [9, 10].

As Chinese embassies and international organizations, who have abundant field experience of global health, valued the competency of professional skills most, it suggests that interdisciplinary competencies are critical in the deployment of global health workforce. The proportion of interdisciplinary experts in the professional team of global health in China is significantly lower than in developed countries [11]. During the initial stage of China’s global health engagement, the comprehensive skills development of global health workforce, especially the competencies in language communication and professional skills, should be given priority [12].

Stressing the personal security and incentives

It was found in the study that an overwhelming proportion (75%) of the international organizations regarded “security” as the foremost factor in deployment while most

Chinese departments attached less importance on it presented in the Fig. 2. Previous research also found that security and traffic accidents were the major threats for China's overseas medical teams [13]. International organizations have rich experience in global health engagement and they hold high of the security, e.g. World Health Organization points out in the *Global strategy on human resources for health: Workforce 2030* the importance of job security and occupational safety [14]. This result may alert the Chinese administrative departments to stress security in deploying the global health workforce.

Incentive was found to be the principal factor by most stakeholders (58.1%) from five departments, influencing the willingness of individuals to engage in global health. The reason might be that there are limited career paths or incentives for global health work in China, and the current human resource policies, such as payments, titles and professional promotions need to be adjusted [8, 15]. It is advised to take into consideration of staff's personal security and given opportunities to achieve personal development while performing overseas global health assignments [13].

Catering to the program implementation

Regarding the priority of deployment way, almost two thirds of the stakeholders (60.8%), especially stakeholders (100%) from international organizations considered that the deployment of Chinese global health workforce should be project-based. Given that China's most global health professionals were deployed temporarily for major global health events without a standard mechanism [16], there have been discussions on deploying the global health workforce together with China's foreign aid medical teams, which has accumulated a lot of experience through over 50 years' history of providing medical service abroad. However, our study found that the majority of respondents suggested the deployment of global health workforce should depend on the tasks or the specific project. Two reasons might explain this: first, the work of the public health professionals for example is mainly about disease prevention and behavior change in communities and individuals, which is different from that of foreign aid

medical teams who work in a fixed location such as hospitals [17]; second, the targeted deployment in line with the project needs is considered more efficient to reach the project goal. Therefore, the deployment of Chinese global health workforce may not be simply integrated with foreign aid medical teams but is to take the characteristics of different global health projects into consideration and formulate appropriate deployment plan accordingly.

Limitation of this study

This research has its limitations. Due to travelling restrictions caused by the COVID-19 pandemic, only 8.1% of the participants were from Chinese Embassies and 10.8% from international organizations. The limited participation of embassy and international staff may have led to skewed representation of the study's findings. This potential bias could be addressed by ensuring more respondents from Chinese Embassies and international organizations to participate in the future research.

Conclusion

In this study, we have identified three priorities of the deployment of Chinese global health workforce. Priority one is to bridge the gap of competencies of Chinese human resources, especially the necessary communication and professional skills, and cultivate interdisciplinary workforce meeting the international standards for global health activities [18]. Priority two is to emphasize personal security and incentives in the deployment so as to motivate more talents to engage in global health. Priority three is to consider more on project-based deployment in line with the project needs. Further study is necessary in the future on how to accomplish the priorities above to contribute more to China's global health pathway.

List of abbreviations

CDC: Center for Disease Control;

COVID-19: Coronavirus disease 2019; UK: United Kingdom.

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Authors' contribution

XM drafted the first manuscript. WD revised the manuscript. YQ, BW and QX helped formulate the questionnaire and did the questionnaire survey. SL polished the writing of this article. DW designed the study, performed the statistical analysis and reviewed the manuscript. YG, NX and XZ conceived, coordinated and supervised the whole work.

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Availability of data and materials

Please contact the corresponding author for data requests

Ethics approval and consent to participate

The research protocol was approved by the National Institute of Parasitic Diseases, Chinese Center for Disease Control and Prevention Ethical Review Committee, and obtaining consent from study participants.

Consent for publication

Not applicable

Competing interests

The authors declare that they have no competing interests.

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Figures

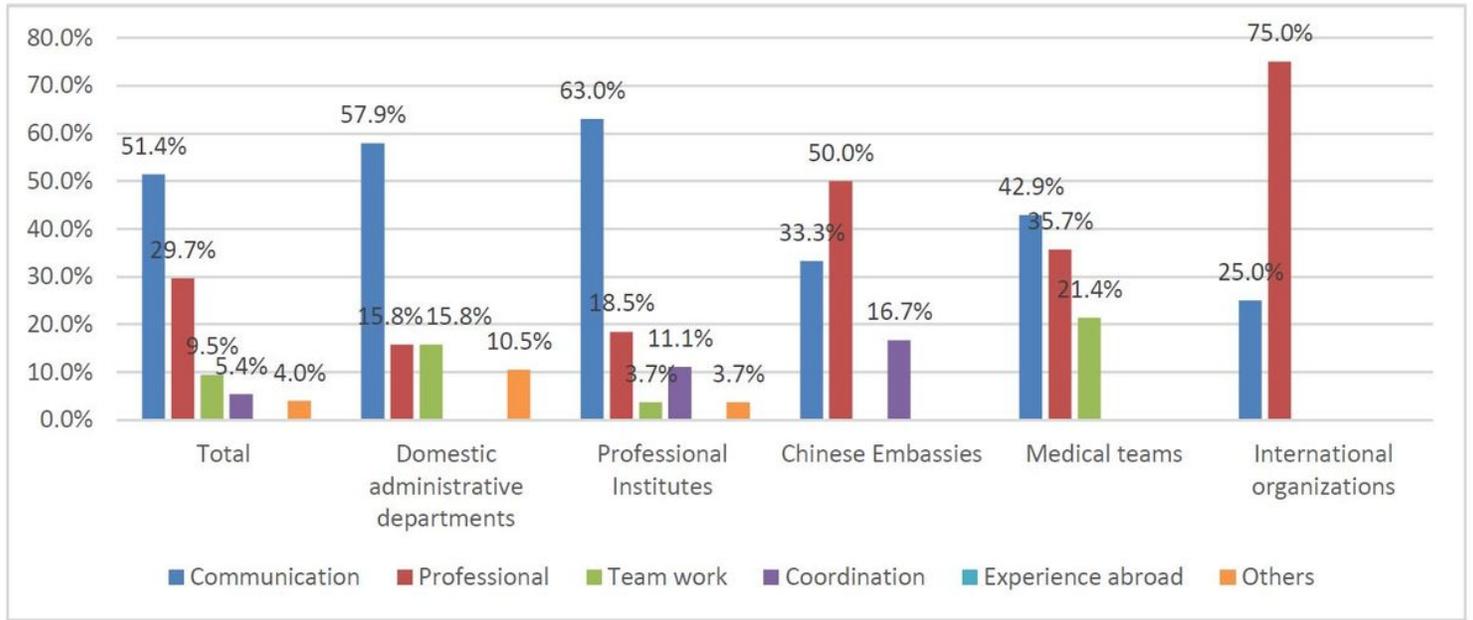


Figure 1

Percentage of core competencies for Chinese global health workforce by five different departments

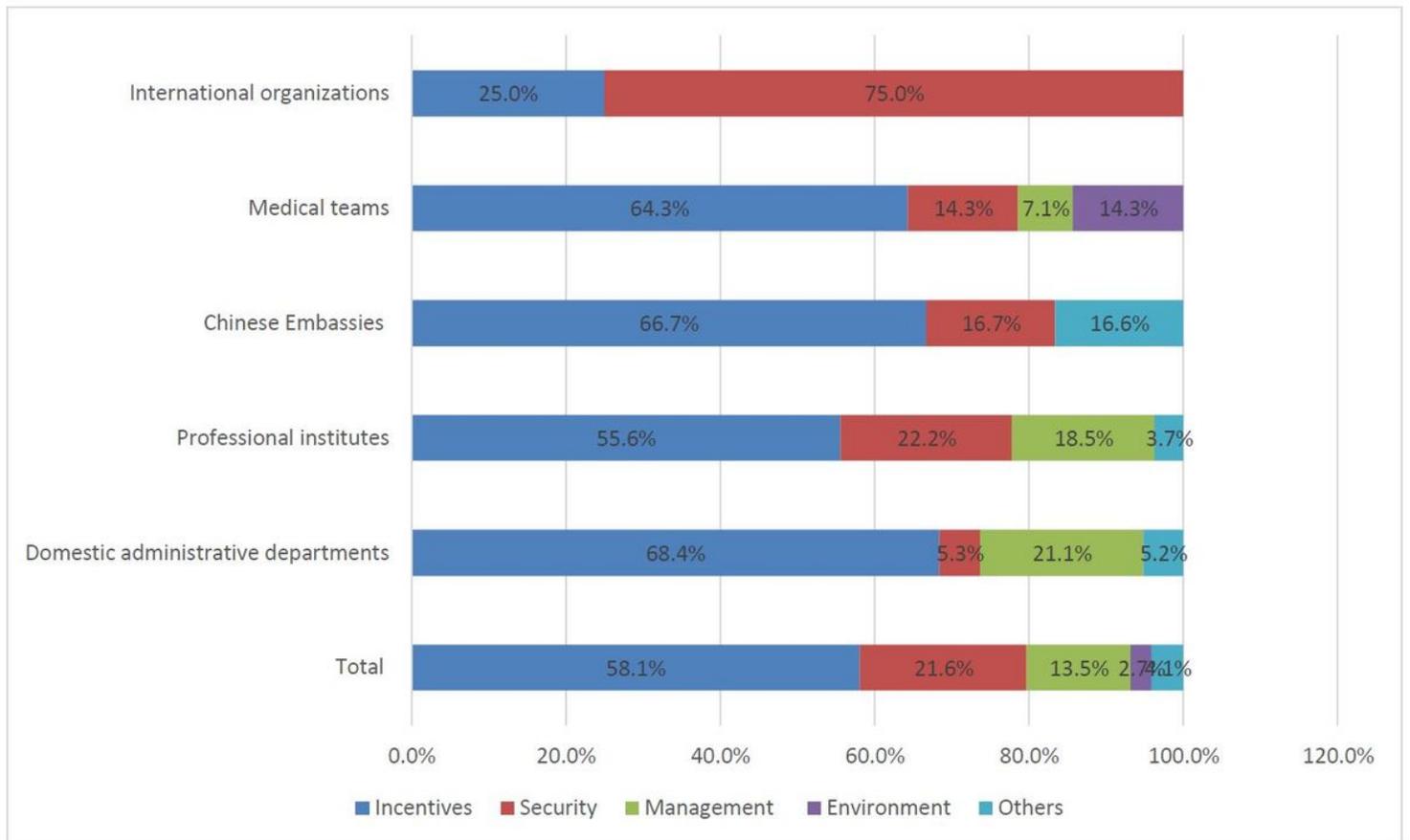


Figure 2

Percentage of factors influencing the deployment of Chinese global health workforce held by five different departments

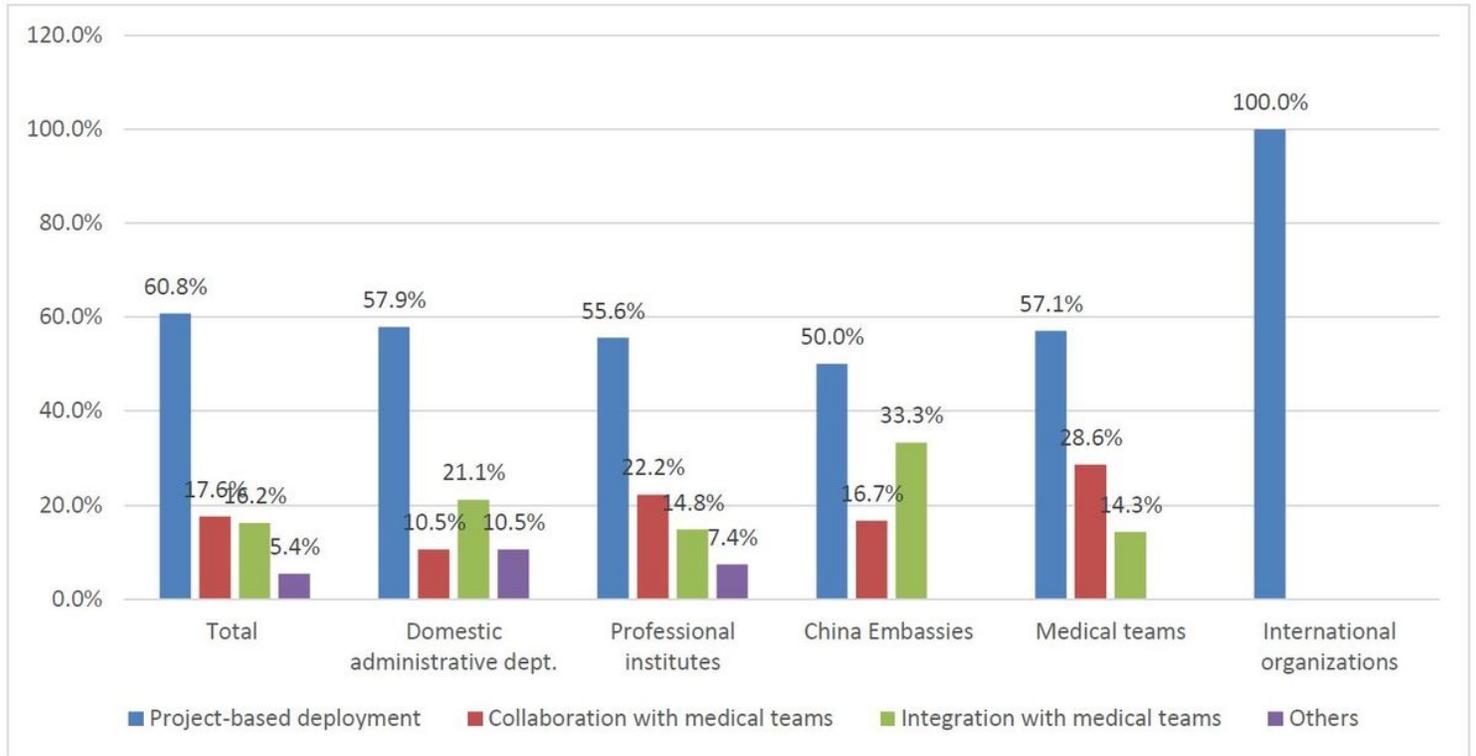


Figure 3

Percentage of deployment way* of Chinese global health workforce held by five different departments