

## Healthcare simulation in China: current status and perspectives

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*To the Editor:* The issue of patient safety has been making headlines continuously. China is facing the same patient safety problem. According to the statistical report of 2014 to 2015 medical disputes, in many large cities of China, for example, Beijing and Shanghai, patient death is mainly caused by lack of standards in the medical treatment and operational procedures.<sup>[1]</sup> Implementation of simulation-based healthcare training could be a potential solution to standardize the medical procedures. However, healthcare simulation in China is still facing great challenges for the moment.

First, the major hindrance on the development of simulation-based healthcare training in China is due to heavily under-developed teaching approach. Resources related to healthcare simulation, like textbooks and published papers, are relatively few. Only in 2014 was the first textbook of healthcare simulation published in China. Insufficiently, the book *Simulation Based Medical Education in China* only briefly introduces the basic concepts and knowledge of healthcare simulation. In 2017, *The Comprehensive Textbook of Healthcare Simulation* was introduced and translated into Chinese with over 1.2 million words. This book contributes to the development of healthcare simulation in China, which is not only providing a systematic introduction to healthcare simulation but also bringing the concept that healthcare simulation is a discipline. With regard to the simulation-based healthcare research, the number of published Chinese articles has increased rapidly over the year, most domestic papers simply addressed the usage experience of simulated teaching tools, while paying less attention to the in-depth theoretical studies.

Second, the formulation of a concrete professional system should be enhanced. The key areas of improvement include: increased instructor training for the simulation-based healthcare training, support to the associations and

entities favoring this approach, and notably faculty development. Till date, China's simulation-based healthcare training focuses primarily on the clinical skills of undergraduates and resident physicians, rather than ensuring the up-to-date training provided to the course instructors.<sup>[2]</sup> In addition to this issue, shortfalls of Chinese physicians assigned to simulation-based training must be compensated to ensure programs run smoothly. Notably, government authorities may aim to modulate official degree certifications that can be achieved following successful participation of simulation-based education and training programs. The future construction of a regulated system seems to be a fundamental step required in the formation of a professional and standardized simulation-based teaching.

Third, research and development of simulation equipment should be further improved. Healthcare simulation products in China are still relatively insufficient and basically depend on imported products. Actually, many international high-fidelity simulators' internal compartments are made in China; however, product design needs to be properly researched and developed in order for China to provide its own manufacturing facilities. Besides, the distribution and development of healthcare simulation are uneven across different regions in China: large and small hospitals, urban and rural areas. Due to the distrust with medical resources and competencies of physicians at regional or community hospitals, patients flood into large hospitals within urban cities. In many rural areas, there are no simulation centers and professional teaching sessions to offer training for the medical staff. Funding of simulation-based healthcare course is also minimal. With very few part-time tutors at a time, and no regular funding at sight, the trainees are fewer than 100 people per year. Medical staffs are unable to receive standardized training in rural areas. All in all, by addressing the challenges listed in this article, healthcare simulation in China can be better developed.

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