

Comment on: Zhang Z, *et al.* Focus on China: should clinicians engage in research? and lessons from other countries. *Quant Imaging Med Surg* 2014;4:413-25

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Recently there has been a passionate debate about whether clinicians in China should engage in research (1-3). However, some of the discussions are theoretical, and there was not much reference to the current models in other developed regions, such as Western European countries, USA, and Japan. In Hong Kong, the majority of doctors employed by the Hospital Authority and the doctors in private practice do not do research, while clinical research is mainly conducted by the small percentage of physician scientists employed by the two medical schools (4). In the Netherlands, in non-academic hospitals though it is possible for clinicians to engage in research, it is challenging as the emphasis is on efficient patient care and there is no adequate infrastructure support. The majority of research in non-academic hospitals is conducted in the context of a multicenter study with one of the academic hospitals acting as the coordinating center (5). The October 2014 issue of *Quantitative Imaging in Medicine and Surgery (QIMS)* published invited independent views from seven specialists, two trainee doctors, and one medical editor from China (including Hong Kong) on the topic of “*whether clinicians in China should engage in research*” (5). One specialist from UK, The Netherlands and France respectively, and two specialists from USA, presented the funding and the structure for medical research in their home countries. In this editorial, I provide my personal interpretation of some of the views.

Overall, all the participants expressed positive view on clinician’s engagement in medical research. Dr. Civelek

pointed out that even most simple observational clinical research has a potential to improve patient care, safety and overall medical improvements. Dr. Zhang commented that the paradigm shift of clinical medicine from experience-based to evidence-based medicine requires a good clinician to think like a scientist. The experience of doing clinical researches allows clinicians to think critically on the emerging large amount of research papers.

However, some concerns emerged on the topic. Drs. Zhao, Ai, Lin, Shen, and Ms. Ji commented that the current career promotion structure in China with a focus on publication and grant distracts clinicians from their primary duty to serve patients. Ms. Ji argued that whether Chinese clinicians engage in research should be decided by doctors themselves and it should be out of interests. Some clinicians do research only for the promotion purpose instead of looking for solution to medial problems, a substantial proportion of the research activities is only a waste of manpower and resource, and also led to poor reputation of Chinese medical research.

Drs. He and Liu commented that clinicians from primary care clinics and township hospitals should not be requested to conduct research except that they show interest in doing so. Medical research should be mainly conducted by staff in tertiary medical centers and university hospitals. Indeed I personally have good friends who work in second tier hospitals are struggling to publish research articles which are useless if not misleading. I commented that for the majority of doctors, to improve their knowledge frequently,

to have a good command of what has already been known would be sufficient to qualify as a good doctor.

To serve the patients and do a good research are both very demanding, it is difficult, or sometimes impossible, to have a good balance of the both. Dr. Zhao commented that every doctor can do research, but not all have to do research. Dr. Zhao thought that having 10-20% of clinical doctors engage in research will be reasonable. I personally believe less than 5% of doctors in China should do research, if to write a few case reports occasionally or passively submit some patient data does not mean to actively engage in research. Dr. Lin also commented clinicians with limited resource or who are not interested in research should not be required to do so.

Dr. Zhao pointed out research and clinical work should be evaluated through different and independent standards. Research papers and patents should be the key indicators for those who engage in research work, while the level of medical skills and workload for clinicians who purely do clinical work. I would also strongly suggest medical skills should be an important factor for promotion evaluation. Dr. Oei (The Netherlands) commented in Dutch academic centers, the majority of clinicians engage in research, but the level of involvement is variable. There are academic clinicians who choose to focus on education or patient care. Dr. Civelek commented in USA there are few academic medical institutions expecting perfection in all areas of patient care, research and teaching.

Dr. Zhao commented a reasonable system should ensure clinicians who devote themselves to research get sufficient time, space, and financial support, and those who are committed to the clinical work not to be distracted. I also commented that for doctors who do research, they should be partially or even completely exempted from clinical duties. In the meantime, clinicians' research output should be evaluated according to the recognised international standards, i.e., being (I) world leading; (II) international excellence; (III) international recognition. Redundant studies should be closed.

A few Chinese contributors commented that medical research should be clinically oriented. In the meantime I personally like to comment that it is more challenging to perform clinical research in terms of resource management and coordination than to work on molecular biology. To recruit suitable patients, to randomize groups for medical or surgical intervention, to objectively assess various endpoints, and to carry out longitudinal follow-ups are all resource-demanding and time-consuming. Except for some rare

diseases or sponsored drug trials, to perform high quality clinical studies is more difficult currently in China than other developed countries. That is why till now most of best epidemiological studies are from Western Europe or North America. Wet-bench research can be started with a small team of graduate students/research assistants plus some funds for consumables. That is why in the Western countries some clinical staff members focus on basic scientific research. Dr. Zhang pointed out that now large clinical data bases from USA are also available for analysis (6). Dr. Winston also pointed out that in England the Clinical Practice Research Datalink (www.cprd.com) has been made available to researchers. Analysis of these data has led to around 900 papers to date (5).

Funding for research, particularly the salary of research staff, is always a concern in USA. Dr. Ng (USA) pointed out that the operating budget provided by the state to the radiology department can be less than 5% across the United States. An academic department is expected to be largely financially independent even if it belongs to a medical school in a state-funded university. Some academic radiology departments require staff to pay up to 95% of his/her own salary from external grant funding. Clinical faculty is expected to spend most of their time in generating income in the clinic. In order for the clinical faculty to promote to the next rank, he/she will need to demonstrate his/her ability to generate clinical revenue through clinical work and/or clinical trials in addition to the number of service years in the department. Dr. Winston commented that in UK, as the National Health Service provides salary to trainee doctors, special permission must be sought to spend time in research and this is not always supported. It remains difficult to balance clinical work and academic research.

Clinical duties usually generate income for the employer-hospital, while academic research may not generate income. Funding for the research time was not well discussed by the Chinese contributors of this report, probably because currently this tends to be fully covered by the employer-hospitals.

The views expressed in this report by the Chinese contributors and guest contributors shall provide a lot of food for thought on how to move ahead medical research in modern China.

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