【Be brave, young fellows! Come on board：Encouragement to be a Translational Research Manager】

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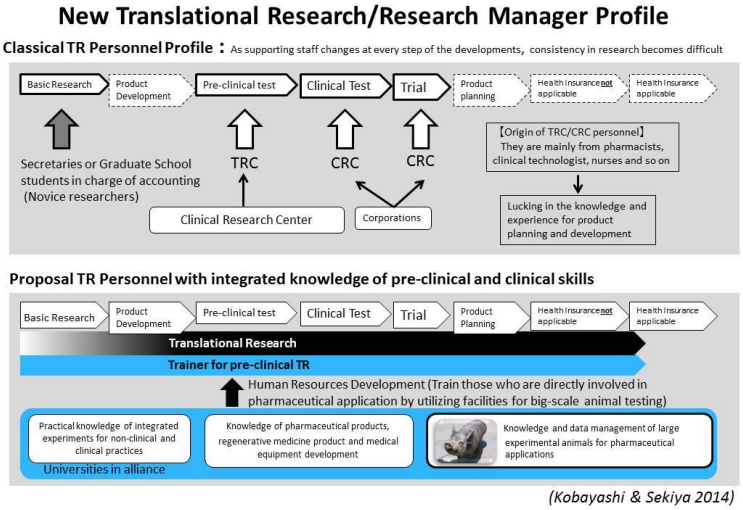
TR centers located at university hospitals in our country are mainly focused on clinical experiments. On the other hand, at pre-clinical TR, different from the basic research, it is more than important that clinicians develop researches with the product image generated after a series of clinical trials. Currently at TR centers in Japan this kind of talented personnel is scarcely found. I would like to shout that **TR managers** with the knowledge of integrated evaluation method between non-clinical and clinical researches should be trained on a nationwide scale.

Overseas top-notch laboratories at universities, managers in charge of researches (Research managers) ask graduate school students as novice researchers to purchase necessary goods and keep books. On the contrary, in Japan graduate school students or secretaries at medical offices are generally in charge. The profile of pre-clinical TR manager is a person who can coordinate (manage) integrated pre-clinical and clinical TR with the knowledge of the outcomes. The candidates should be talented with superb clinical abilities accompanied by the outstanding scientific research experiences with firm theory. They also should have overall leadership management skills with which he can make seamless TR movements feasible (Figure 1).

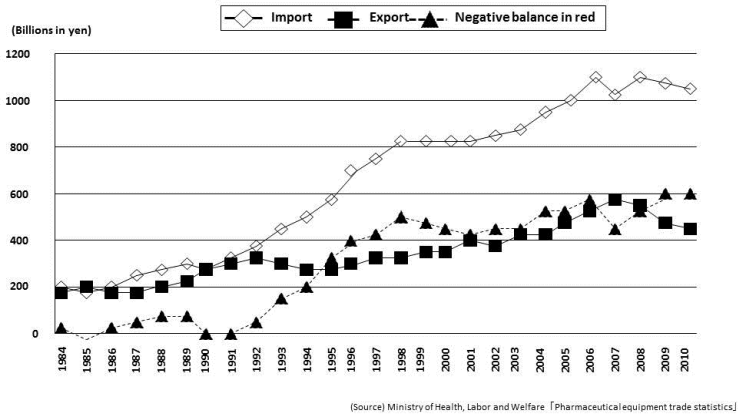


(Kobayashi & Sekiya 2014)

In order to make the above idea viable, we need to have a core to accelerate the alliances among universities as a new framework. From the points of necessity medical university, I can point out the week point of ours. At faculty of medicine 6-year consistent education on medical science and treatment is given without obligations of handing in the graduating manuscripts based on the researches at the end of last semester as other faculties obligate. Furthermore, the education on intellectual properties (including patents) has just begun in the curriculum of graduate school of medicine.

To the contrary, at faculties of pharmacy and engineering where the developments of pharmaceutical products and medical equipment are concentrated, the education on the practical knowledge of medical care site has not been enough. It is a clear evidence that 20-year tendency of the excess in importing medical equipment has not been improved due to the fact that the government only has budgeted for manufacturing without knowing the medical care site (Figure 2).

The 20-year Medical devise Equipment Trade Imbalance

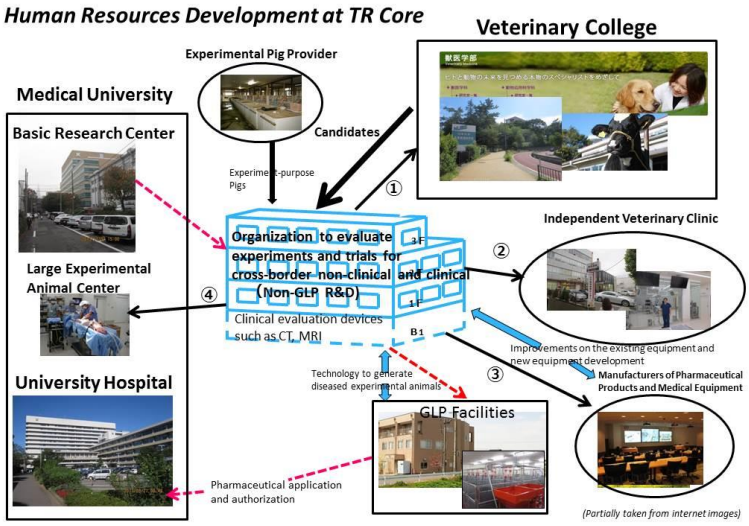


(Source) Ministry of Health, Labor and Welfare「Pharmaceutical equipment trade statistics」

So, it is essential to improve **medical-engineering and industry-academia collaboration** from the classical style.

Judging from the above background, it is obvious and necessary that the core educational venue to provide a chance to ñShare time and space together ñ, for which the collaboration to treat patients among medical, pharmaceutical and engineering faculties becomes possible. However, in reality it would not be possible for those without medical license to share time and space at hospitals to treat patients. Therefore, the facilities to experiment large animals as means of integrated pre-clinical and clinical

research and development act an important role. The key person to manage the experimental animals peri-operatively at the medical facility should be trained, jointing with **veterinary college** where the animal welfare is highlighted. I would like to propose the following medical-veterinary collaboration. While the graduates mainly prefer to work at veterinary clinic and animal husbandry, it is regrettable that only few of them are in the experiment where they must sacrifice the tested animals in Japan. However, I can clearly show this gateway to maximize their abilities; talented young graduates from veterinary college can choose from the flowing 4 directions (Figure 3).



The staff of veterinary college, independent vet clinic, pharmaceutical or medical device manufacturer or director of medical experimental facility.

Human resources development for the new era of TR manager is achievable by sharing time and space at the TR core where the young fellows from medical, pharmaceutical and engineering faculties get together with the purpose of implementing medical technique to treat patients such as operations done to the experimental pigs whose body size is equal to that of human.

It leads to the birth of young clinician who can develop revolutionary medical equipment continuously from the country famous for ñ**Made in Japan**ò.

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