

Medicine and cardiology can have a high innovative potential in Turkey

Talented cardiology workforce will be critical to accelerate goal-targeted clinical and basic scientific research and technological innovation.

For the number of clinical research conducted, Turkey is ranked 35th in the world and 19th in Europe and has a share of 0.6% in total clinical research conducted in the world (1). During 1981–2006, approximately 50% of articles published in Thomson IS journals in Turkey were of health sciences origin (2). Turkey's contribution in cardiovascular publications has regressed since 2006 and increased in journals with a low impact factor. Since the late 2000s, Turkey is stuck in a "middle-income trap," which has led to a decline in scientific publications and to a "middle science trap" (3). Analysis of international patents has revealed that the United States, European Union, Japan, Germany, and BRICS countries has the highest biotechnology patent application rates during 2010–2012 but that Turkey lagged behind with a rate of 0.03% (4). Analysis of the total patent applications from Turkish Universities revealed that 28 patent applications from 139 universities in 2009 increased to 792 applications from 183 universities in 2016, whereas 10222 patent applications were submitted by Massachusetts Institute of Technology (5).

Very successful students in Turkey join medical faculties and get occupied and thus wasted in routine hospital work and non-targeted low-quality academic paper publishing. Academic circles are publishing papers for increasing academic learning, but these papers are of low quality and no patents or innovations are accompanying those papers. Cheating in academic publishing is possible by statistical manipulations, plagiarism, publishing in lowest quality journals and publishing aimlessly for only increasing article numbers.

To facilitate knowledge transfer from university to industry, a new organizational entity has been established at universities: the technology transfer office (TTO). The economic benefit of university to society depends partly on the abilities of their respective TTOs to facilitate exploitation of academic inventions in commercial applications. TTOs facilitate the commercializa-

tion of research results for the public benefit, retain and recruit high-quality researchers, build closer associations with industry, generate income for further research and education, and thus promote economical growth and help to solve societal problems. Recent disillusionment and low performance in the fields of cardiology and medicine can partly be overcome by TTOs in universities. A large amount of money is available for medical device development in the world, and this money can attract brightest doctors for innovation and device development. Medical doctors are unaware of the facilitation of patent application, industry connection, and innovative potential of TTOs. In our case, we established a core group comprising a cardiologist, neurosurgeon, chemist, and mechanical engineer, which produced prolific ideas, approaches, and 12 patent applications that could have large innovative potential.

Physicians can get more financial rewards from cooperation with TTOs, and brightest minds will not be wasted in non-functional academic paper publishing and routine hospital work. Turkish economy can also benefit and get out of the middle income trap with the help of technologies and devices invented by medical innovators.

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References

1. <http://www.sanayi.gov.tr/DokumanGetHandler.ashx?dokumanId=017882b9-01fe-4b8c-86dd-b5d9ca996e60>
2. <http://cabim.ulakbim.gov.tr/wp-content/uploads/sites/4/2016/03/T%C3%BCrkiye-Bilimsel-Yay%C4%B1n-G%C3%B6stergeleri.pdf>
3. Onat A. Status of Turkey's top publications in cardiovascular medicine, revisited after 4 years. *Turk Kardiyol Dern Ars* 2016; 44: 320-8
4. <http://www.turkstat.gov.tr/>
5. <http://www.hurriyet.com.tr/universitelerin-patent-sayisi-artti-40423914>

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