

LETTER TO THE EDITOR



Impact of imaging diagnostics on the budget – Are we spending too much?

Uticaj *imaging* dijagnostike na budžet – Da li previše trošimo?

To the Editor:

Serbia's financial constraints in health care should be regarded typical for a wider Eastern European context. Sustainability of long-term funding is threatened by a number of determinants including population aging, consequences of worldwide economic crisis and current budget deficit issues. The underdeveloped legal framework imposes no mandatory cost-effectiveness evidence submission in approval and reimbursement consideration strategies on new medical technologies and therefore contributes to the issue¹. Most responsible policies aimed at achieving an optimal value for money in health care focus on prescribing behavior of physicians². The issue of consumption patterns and costs of imaging diagnostic techniques is a particularly underexploited area of research in health economics³. We witness an unprecedented contemporary development of novel medical technologies in clinical radiology affecting market supply. A substantial budget impact could be attributed not only to the high tech services such as CT, PET and NMR, but interestingly even to the simple classical X-ray examinations in case of massive utilization⁴. The key long-term obstacle belongs rather to the demand side of the market equilibrium and the growing burden of prosperity diseases within the national health system⁵⁻⁶. Getting familiar with determinants of imaging diagnostics utilization patterns and related costs could give us grounds for informed cost saving policy. The amount of avoided unnecessary spending could be essentially allocated to cover current deficits, e.g. in the drug acquisition budget.

In order to give some ground estimates on the extent and structure of radiology related consumption a pioneering local retrospective study was conducted. Electronic registry

of 56,007 patient discharge invoices of tertiary university hospital in Kragujevac, Serbia (1,293 beds capacity) was analyzed in 2010. The study provided an in-depth insight into prescription practices of specialty physicians in demanding radiological examination procedures. The observed Serbian tertiary care university hospital is in charge of covering the needs of almost 30% of general population of the central Serbia region. For this reason and due to the paucity of other evidence the authors observed these patterns of care as a likely nationwide state of the art within hospital facilities. In this single year, 16% of patients processed underwent some of nuclear medicine services, while 81% of patients underwent some other imaging diagnostics or emergency radiology services. High tech imaging methods were impressive consumers of hospital budget with CT targeted imaging of particular organs accompanied with the reconstructions on lead (€1,086,895.50). Nevertheless, commonly applied methods of interventional radiology (invasive hemodynamics, followed by selective coronary angiography and cardiac catheterization, PTC revascularisation (without stent implantation) and endovascular treatment of intracranial aneurism exhibited by far the most substantial budget impact (€2,667,510.92). Regardless of monetary value, the authors would like to point out insufficient deployment of interventional radiology methods in Serbia, capable to replace many surgical procedures, greatly shorten the length of hospital stay and reduce the long-term expenses⁷. It should be noted that the average imaging diagnostics costs per patient examined in Serbia vary greatly depending on methods observed: classical radiography €17.2, CT+MR+sonography €77.36, interventional radiology €189.86 and nuclear medicine € 33.23 (see Table 1).

Table 1

Average utilization of imaging diagnostics procedures per 1,000 examined patients and average imaging diagnostics cost per patient (Serbia, 2010)

Examination techniques observed *	Average number of examinations per 1000 patients	Average imaging diagnostics cost per single patient (CSD)
Radiography	370	1,773.00
CT, NMR, Sonography	558	7,996.61
Interventional Radiology	100	19,625.67
Nuclear Medicine	138	3,434.91
	1116 (total)	8,236.02 (average)

*relate to the hospital outpatient, emergency room and inpatient care.

