HealthManagement
Promoting Management and Leadership

Volume 11 - Issue 2, 2011 - Financial Management

Benefits of PET-CT Versus Other Diagnostic Methods

PET/CT is an established clinical tool that is particularly valuable for cancer-related diagnosis, including both initial diagnosis and follow-up examinations. There are other procedures, like CT/MRT, bone scan, or mediastinoscopy, all of which are also costly. Given the fact that PET/CT is widely used anyway, the question arises whether it is medically responsible and financially favourable to focus solely on PET/CT examinations.

A study on 120 cases of lung cancer has shown that patients are properly restaged during follow-up examinations with PET/CT which sufficiently legitimises this procedure in medical terms. PET/CT can thus replace a combination of the three other procedures, which saves money and spares the patient from needless exams. The impact of switching from a case by case decision on which procedure(s) to use, to only relying on PET/CT entails both direct and indirect effects. A direct effect, for example, is the immediate cost or time comparison between PET/CT and any other examination method. An indirect effect is, for example, the altered restaging for patients. Both groups of effects are discussed in this paper in detail.

Direct Effects

The two most obvious direct effects of using PET/CT instead of other diagnostic methods are the difference in outcome and the difference in cost. With respect to lung cancer, PET/CT basically delivers an output of the same quality compared to CT/MRT, bone scan, or mediastinoscopy. Thus the results of all methods shall be treated as equally useful for follow-up examinations.

The study shows however, that the likelihood of upstaging (follow-up results in an operation rather than no operation) increased by 16 percent in the sample. This immediately changes the result of the examination in terms of quality. Assuming that patients weren't upstaged mistakenly, this implies PET/CT is more effective. Hence, treatment quality increases. Thus, PET/CT becomes valuable in terms of exposing the patient to less follow-up examinations and the physician being able to react earlier.

In terms of the cost, one simply regards the cost per examination of one method or another. PET/CT is cheaper than mediastionoscopy but more expensive than bone scan and CT/MRT. However, early upstaging implies: (a) Less follow-up examinations, which in turn yields immediate savings, and
(b) This might result in chemotherapy treatment rather than surgery which would mean cost savings of about 40 percent per case.

The study further showed that about 8 percent of the patients could be downstaged earlier when using PET/CT. This implies not only more certainty for the patient, but also savings in further follow-ups and the potential for unnecessary treatment.

Indirect Effects

A second view reveals that the choice of examination method also influences the cost per examination. There are indirect effects of the decision over what method to use on the cost structure of all the examination processes. If management decides to only use one rather than three examination methods, so called economies of scale can be realised. Increased standardisation and routine helps staff to decrease process time and handle cases more effectively. For example, the time-intensive step of deciding on the appropriate method and eventually revising this decision can be left out. Using only one method also implies that only one type of device has to be in place. The utilisation of this device can be maximised by concentrating all examinations on this device. Note that this argument doesn't hold, if other devices are fully utilised anyway. Maintenance and related costs decrease as well, as specialisation effects rise. This can be sourcing- related in terms of a help-desk, for example, or material- related in the case of the use of a tracer. As more patients are scheduled per day, management might be able to use tracers reserved for cancelled examinations elsewhere and thus avoid the cost of having tracers expire.

Further economies of scale may incur in the diagonsis routine, as physicians become more specialised and the output (report) naturally more standardised. This in turn also benefits the treating physician.

Conclusion

In conclusion, focusing on PET/CT is clinically favourable in terms of patient convenience and financially favourable in terms of cost savings. It further entails economies of scale by focusing on that one procedure, e.g. decreased marginal costs and enhanced operational efficiency due to routine. Based upon these insights it seems advisable to reconsider further diagnostic sequences for economic reasons. Not only on a stand-alone basis, but also for how they interact. On a holistic basis alone, synergies both in terms of financial impact and patient distress can be identified and capitalised on.

Published on : Tue, 2 Aug 2011