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Applying a “Business Process Reengineering” Model to Radiology

Part I: Six Steps for Streamlining Exam Processes

Business Process Reengineering (BPR) is a philosophy that advocates restructuring an organisation, based around processes rather than the individual tasks that take place in the organisation. The idea is that by approaching workflow without deference to traditional business models, one can analyse and redesign the organisation into a system of more efficient processes for greater competitiveness, with a focus on serving the customer.

The term “process” encompasses the whole chain of service delivery from referral to completion of diagnosis or therapy, if required. Older, hierarchical and task or function-based structures are replaced with a systematic approach that, if applied correctly, can bring significant results. Taking on the perspective of the customer and thinking in a more solution-oriented way empowers radiologists to deliver healthcare more efficiently.

Three Objectives of BPR

Hammer et al. (1993) name three economic objectives aimed at by BPR: reduction of cost, quality improvement and acceleration of processes. What are the six major measures for this improvement?

1. Eliminate non-economic-value-added activities BPR advocates that work that is not of positive impact to the patient should be eliminated, rather than merely added to the list of functions a RIS/PACS or other IT system performs. Within the context of radiology, defining “economic value” is less straightforward due to intangibles such as patient satisfaction as well as performance measures, like time-per-examination, and financial indicators, such as reimbursement.
2. Reduce the number of interfaces in your workflow In radiology, the process of diagnosis delivery begins and ends at “interfaces” with the referring physician. The outbound interface is the report, e.g. the diagnosis. The inbound information is commonly contained in plural documents, such as health records, the case history, and additional forms. We can economise on the number of “interfaces” when redesigning workflow by reducing information ‘interfaces’ that reoccur between admission, assistant medical technicians, physicians and pre- or post-examination steps, such as read and co-read activities.
3. Reduce the division of work in your department Another BPR technique foresees the reduction of the division of work. For radiology, this is not as applicable a step as in the corporate world. A high degree of specialisation makes it necessary to divide the work of assistant medical technicians according to the scanner they are trained on. Managers need to, instead, reorganise workflow taking a customer/patient perspective to combine work steps so that the exam process is smoother.
4. Reduce redundant steps At first glance, “redundancies” may seem a subgroup of the above-mentioned non-economic-value-added activities. In radiology however, redundancies can be of vital importance - they preserve a certain degree of additional safety. Hence, it is important for leaders to neither blindly cut back on those safety-enhancing steps that seem to be non-economic-value added, such as co-read steps, nor overlook the saving potential of redundant activities that are not safety-relevant, such as multiple requests of the same patient data prior to the exam.
5. Increase efficiency Again, the tradeoff of efficiency vs. security arises. From the patient’s perspective, increased efficiency during the exam may be valued positively in terms of time-saving as well as negatively in terms of being stressed. Given these issues, the optimal degree of efficiency may differ in radiology compared to non-healthcare entities.
6. Delegate competencies Empower staff to use their initiative and tell you what they think about how the department can provide a broader range of activities – and what extra tasks they can realistically take on. In any industry this is a matter of training and qualification. Within BPR the establishment of different processes, depending on the degree of complexity, is outlined (see action point 3). For radiology, regulatory requirements limit the degree of competencies that can be delegated, as some decisions can only be made by physicians or medical directors. Nevertheless, it is of interest to design the exam process in a manner so that there are clearly defined decision gates and backup processes for critical cases.

Part II of this article will appear in issue four of IMAGING Management, and will explore this subject in greater detail, focusing on redesigning IT systems from a BPR point-of-view.

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