Karolinska Hospital: Organizational Innovation in Healthcare

The crisis in healthcare is being experienced in many countries as they struggle to maintain levels of service against a backdrop of rising costs of treatment and greater demand. Resource commitment is already high – for example, expenditure on health is now a major portion of GDP in most of the OECD countries, running at around 8%. Several routes are being pursued to deal with the crisis, including the use of advanced information systems, the introduction of market principles (the purchaser/provider split), the pressure to use generic drugs and bulk purchasing and a lowering of the level of care that can be provided – essentially trading off quality and cost. Increasing resource commitment via taxation is likely to be unpopular, so there is strong pressure to find alternative, innovative solutions. One hospital, the Karolinska in Stockholm, Sweden, appears to have found a way of resolving the problem. It is a large hospital with around 1100 beds and 4000 staff and its annual budget was a massive €207m. Comparisons with international 'best practice' suggested that in a number of areas there was room for improvement, and that most of these were due to organizational rather than clinical problems. For example, in one operating ward 17.5% of operations were cancelled on average; of these only one third were due to patients not turning up because of clinical problems, the remainder being due to inadequate organization.

Key indicator	**Karolinska Hospital**	**Best performer**
Effective utilization of operating theatre (%)	40	88 (Mayo Clinic, USA)
Time between operations (minutes)	59	12 (Mayo clinic)
Bed utilization	87	98 (Sahlgrenska, Sweden)
Proportion of day surgery (%)	20-30	50 (potential based on clinical analysis)

In another set of studies it was found that surgeons spent most of their time – around 65% – waiting and a further 10% on administration; their actual contact with patients only represented 25% of their time. Similar figures emerged for other staff, indicating that much of the ineffectiveness in the hospital's performance was due not to inefficiency when dealing with patients but poor organization of the treatment processes such that patient time was at a low level. This resonates with work done in manufacturing in the 1980s which suggested that value-adding time in factories was often as low as 10% with the remainder being consumed in waiting, unecessary movement and storage, adminstration, etc. For example, the following table indicates the difference between actual time being treated and total time spent at the hospital.

Based on R. Kaplinsky, F. den Hertog and B. Coriat, *Europe's Next Step* (London: Frank Cass, 1995), p. 465

Treatment	**Total time in hospital (days)**	**% time being treated**
Unprioritized prostate gland	255	2
Claudicatio	180	6
Critical ischemi	90	23
Carotis	57	16
Tumor investigation	70	23
Inguinal hernia	183	2

By borrowing ideas from manufacturing, especially based on waste reduction and organized to improve flow, the hospital was able to make significant savings without compromising the level of quality of care. Overall savings were in the order of 15%; in many cases quality of care was actually increased. For example:

Activity	**Before reorganization**	**After reorganization**
Time from referral to release: hernia operation	28 weeks	7 weeks
Time from referral to notice about outpatient visit	1 week to 5 months	<1 week
Audiology waiting list	22 months	12 months (achieved with a 25% reduction in staff)
Cancellations	12%	3%
Co-ordination of testing (which reduces need for multiple visits)	20%	>50%

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