



Title: Hospital or Physician Volume and Quality of Health Care.

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Aim:

To aid in organizational planning of health services, the Norwegian Ministry of Health asked SMM to summarize research results concerning the relationship between volume of hospital or physician activities and quality of care.

Results and Conclusions:

The report reviews the literature published from 1997 to 2000 and summarizes a systematic review from 1997 (CDR-report 8: The relationship between hospital volume and quality of health outcomes, University of York). Studies on volume and quality of care are mainly observational in design. Information from such studies must be interpreted with caution since various sources of bias may flaw the results. RCTs on the other hand are not a suitable study design to answer these questions. Each study was graded according to the level of case-mix adjustment, and conclusions were based on studies with adjustment for age, sex, severity of illness, and/or comorbidity.

There is no evidence to suggest a general relationship between volume and quality of care. The relationship must be studied separately for each procedure or diagnosis. For the following conditions, patients treated in high volume hospitals and/or surgeons have better outcomes in terms of mortality, morbidity, or organ survival: cancer in the esophagus, pancreas, and liver, abdominal aorta aneurysms, carotid endarterectomy, congenital heart disease, acute myocardial infarction and PTCA, organ transplantation, and AIDS.

In trauma treatment, no relationship was found between hospital volume and mortality. For orthopedic procedures (hip or knee arthroplasty or hip fracture) the results are inconsistent.

Methods:

The CRD and Cochrane databases were searched to identify systematic reviews. Primary literature was identified after searches in MEDLINE, EMBASE, and HealthSTAR for the period 1997 through 2000.

Relevance to Norwegian health services:

The challenge for Norwegian hospitals is to maintain high volume or easy access to services. The current volume levels for Norwegian hospitals are presented for selected procedures and discussed in relation to the evidence on the volume-outcome relationship. High-risk elective procedures (cancer, coronary heart diseases) were performed in very low volume hospitals (1-2 procedures per year), and centralizing these services may benefit the patients. Continuous monitoring of the quality of care should be introduced to establish knowledge about the performance of Norwegian hospitals.