



# Karolinska Institutet

## Institutionen för klinisk forskning och utbildning, Södersjukhuset.

Feedback between dispatch centre and ambulance

– *Strengthening the chain of care*

Akademisk Avhandling som för avläggande av medicine doktorexamen  
vid Karolinska Institutet offentlig försvaras i sal Ihre, Södersjukhuset  
av

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## Abstract

The emergency call to the emergency medical communication centre (EMCC) and the emergency medical dispatchers (EMD) is the first link in the chain of survival. Precise assessment of the call and exact dispatching is essential to achieve early treatment for patients with time-critical injuries or sickness. The EMDs' involvement in the patient care traditionally ends when the ambulance arrives at the scene. Therefore, the EMDs are unable to observe the progress and outcome of the patient, and regular and structured feedback is seldom available. Consequently the EMD and the EMCC organization have few possibilities to learn from errors or good assessments made by the EMD.

The overall **aim** of the thesis was to develop, implement and evaluate a technical feedback system between emergency medical dispatchers and the ambulance personnel. A feedback system was developed out of a Finnish emergency medical service (EMS) model and adjusted to suit the Swedish EMS. In **study I** the feasibility of the feedback system was evaluated. The feedback system had an acceptable margin of error (8.0%) and the most commonly used feedback code was "agree with the dispatcher" (56.6%). During the implementation of the system in the Stockholm EMS an absence of compliance in sending feedback appeared. In **study II** the aim was to identify factors influencing the implementation process. Three factors were identified; motivation, participation and encouragement. The absence or presence of these factors formed the opportunities and the barriers in the implementation of the feedback system.

To evaluate how the feedback system could be used, two studies were conducted.

**Study III**, an organization evaluation with performance indicators was conducted in the Finnish EMS. After the implementation of a new EMCC organization in Finland the percentage and number of high priority ambulance assignments increased. There was also a trend towards better detection of patients with life-threatening conditions in the new EMCC. In **study IV**, 100 calls to the EMCC in Stockholm were identified using the feedback system. The aim of the study was to identify overall factors influencing the assessment of calls to the EMCC. Barriers and opportunities related to the registered nurse (RN) or the caller were identified as the main factors influencing the assessment. The opportunities appeared in the callers' symptom description and the communication strategies used by the RN. Also, a barrier appeared in callers' descriptions of unclear symptoms, paradoxes, and the RN's lack of communication strategies during the call.

**Implications;** the developed and evaluated technical feedback system is feasible for structured and regular feedback. Several factors, including both barriers and opportunities, influenced the implementation of the feedback system. A feedback system can be used for evaluating the EMCC through performance indicators and also when identifying and evaluating specific calls to the EMCC.

**Keywords;** EMS; emergency medical services, EMCC; emergency medical communication centre, EMD; emergency medical dispatcher, feedback, implementation, communication; strategies

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