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 doktorsexamen
vid Karolinska Institutet offentligen försvaras i sal Ihre, Södersjukhuset av
Veronica Lindström
Legitimerad Sjuksköterska

Torsdag den 31 maj 2012, kl 09.00

Huvudhandledare: Professor Maaret Castrén
Karolinska Institutet
Institutionen för klinisk forskning och utbildning, Södersjukhuset

Fakultetsopponent: Professor Bengt Fridlund
Högskolan Jönköping
Hälsohögskolan

Bihandledare:
Leg. Sjuksköterska, Med. Dr Katarina Bohm
Karolinska Institutet
Institutionen för klinisk forskning och utbildning, Södersjukhuset

Betygsämnd:
Professor Regina Wredling
Karolinska Institutet
Institutionen för kliniska vetenskaper,
Danderyd sjukhus

Leg. Sjuksköterska, Med. Dr Ann-Charlotte Falk
Karolinska Institutet
Institutionen för neurobiologi, vårdvetenskap och samhälle

Professor Petter Andreas Steen
Oslo Universitet
Medicinsk fakultet
Institutionen för klinisk medicin

Överläkare, Med Dr Rolf Karlsten
Uppsala Universitet
Institutionen för kirurgiska vetenskaper,
Anestesiologi och intensivvård

Docent Tom Silfvast
Helsingfors Universitet
Institutionen för anestesi och intensivvård

Stockholm 2012
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