Comparative effectiveness of care coordination interventions in the emergency department: a systematic review
Katz EB, Carrier ER, Umscheid CA, Pines JM

CRD summary
The authors concluded that the evidence on the effectiveness of emergency department-based care co-ordination interventions was mixed. There were potential limitations in the review process, and the quality of some included studies was uncertain. The authors’ conclusion reflects the limited evidence presented, but its reliability should be considered cautiously.

Authors’ objectives
To evaluate the effectiveness of care co-ordination interventions, in the emergency department.

Searching
MEDLINE, CINAHL, Web of Science, Cochrane Central Register of Controlled Trials (CENTRAL), and Scopus were searched to 2010, without language and publication restriction. The search strategies were reported and the bibliographies of retrieved articles were screened for further studies.

Study selection
Eligible for inclusion were controlled studies of care co-ordination interventions, in the emergency department, reporting objective clinical outcomes, such as emergency department re-visits, hospitalisations, or follow-up with an out-patient clinician or primary care provider. Interventions had to contain one of the following four predefined aspects: incorporation of information from previous health care visits into the current visit; provision of emergency department education on continuing care needs after discharge; development of a treatment plan and next steps for appropriate aftercare; transfer of information about the current visit to continuing care providers.

Randomised controlled trials (RCTs) and quasi-experimental studies were included; their participants, interventions, and outcomes varied substantially. The studies were conducted in rural, urban, and sub-urban settings, across the world (one specifically reported the UK), and most were single-centre evaluations. No theoretical framework was used in most studies.

One reviewer selected studies for inclusion in the review. Questions or concerns about any decision were referred to the review group.

Assessment of study quality
The quality of RCTs was assessed, by one reviewer, using the five-point Jadad scale. The quality of quasi-experimental studies was not assessed.

Data extraction
Data were extracted, by one reviewer, to enable the presentation of percentage rates, relative risks, odds ratios, and 95% confidence intervals. Questions or concerns about data extraction were referred to the review group.

Methods of synthesis
Studies were synthesised in a narrative, according to the four categories of intervention described in Study Selection, above. Study tables were presented to highlight the nature and extent of heterogeneity.

Results of the review
Twenty-three studies were included; 14 were RCTs (ranging from 178 to 2,033 patients) and nine were quasi-experimental studies (ranging from 125 to 4,392 patients). Ten RCTs scored three, and four scored two, on the Jadad scale, indicating moderate-to-poor quality. None of the studies used blinding.

Treatment plan and follow-up: Nineteen studies, including seven RCTs, four of which involved asthmatic patients,
developed a post-discharge emergency department care and treatment plan or steps for obtaining follow-up. Twelve of these studies effectively improved their primary outcome of follow-up with a primary care provider, emergency department re-visits, or use of prescribed medication. Three quasi-experimental studies showed favourable reductions in emergency department re-visits (one was statistically significant), and four RCTs showed an increase in repeat emergency department or primary care visits (one was statistically significant).

**Education**: Four studies, two RCTs and two quasi-experimental studies, evaluated emergency department educational services to help with continuing care needs. The two quasi-experimental studies were effective, with one showing a significant increase in follow-up appointments, and the provision of information about diagnostics or medication side-effects.

**Information to follow-on care**: One of the two RCTs looking at the effects of transferring information about the current emergency department visit to continuing care providers was effective in improving follow-up rates, information receipt, and patient management.

**Information from previous care**: A statistically significant improvement in information transfer per visit was shown in one quasi-experimental study that focused on the incorporation of information, from a previous health care visit, to the current emergency department visit.

The authors stated that publication bias was possible.

**Authors' conclusions**
The evidence on the effectiveness of emergency department care co-ordination interventions was mixed. About two thirds of interventions, co-ordinating with out-patient providers, increased the follow-up rates or reduced repeat emergency department visits.

**CRD commentary**
The review question was clear and the inclusion criteria seemed broadly replicable. A number of relevant data sources were searched, and steps were taken to minimise publication and language bias, to reduce the potential for missed studies. The potential for error and bias in the review process was a limitation of this review, as only one reviewer was involved in making the main decisions throughout.

An appropriate quality assessment tool was applied to the RCTs, but the results were presented in summary form, making it difficult to judge the individual aspects of potential bias. The quality of the included quasi-experimental studies is unknown. Adequate study details were provided, and the chosen method of synthesis was appropriate, in light of the substantial clinical heterogeneity. The authors correctly pointed out several limitations to their review methods.

Their conclusion reflects the evidence presented, but its reliability should be considered cautiously.

**Implications of the review for practice and research**
**Practice**: The authors stated that emergency departments should prepare for changes to physician compensation that account for emergency department use and costs. They should be aware of the available community medical care resources, so that the most effective local interventions can be selected.

**Research**: The authors stated that further research was needed to understand more clearly which care co-ordination interventions or activities were most effective, and their cost to the stakeholders.

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.