Systematic review of international evidence on the effectiveness and costs of paediatric home care for children and young people who are ill


CRD summary
The review concluded that care closer to home appeared to deliver equivalent clinical outcomes for children and young people who are ill, when they are offered to suitable groups and when appropriate care protocols are in place. The authors’ conclusions reflect the evidence but should be considered tentative as the evidence base was small and the synthesis was limited.

Authors’ objectives
To assess the effectiveness of paediatric care closer to home for children and young people with acute, chronic, complex or palliative care needs.

Searching
Twenty-one databases including MEDLINE, CINAHL, The Cochrane Library (including DARE) and Dissertation Abstracts were searched for published and unpublished articles from 1990 to April 2007. Search strategies were reported. Reference lists of included papers and relevant reviews were examined.

Study selection
Randomised controlled trials (RCTs) and comparative studies that evaluated interventions of care provided closer to home (as defined in the review) for children (<18 years old) with any acute, chronic, complex, life threatening or life-limiting illness were eligible for inclusion. Interventions were to prevent immediate admission to hospital. Excluded studies were: those not in English (other than RCTs); studies that compared equipment use, resettlement from long-stay hospitals or routine home monitoring or studies limited to education or training relating to a health condition without a clinical component; and studies from a previous review.

Home care was provided for very low birth weight or medically fragile babies, chronic or long-term conditions, acute physical conditions, mental health problems and home chemotherapy as alternatives to clinic-based care and as telemedicine support. Interventions included elements such as counselling, cognitive behavioural therapy, rehabilitation and accelerated discharge. Comparison groups were ongoing hospital or clinic care or conventional discharge. Studies were conducted in USA, Finland, Germany, Australia, Brazil, Canada and UK (three studies).

Two reviewers independently selected studies for inclusion. A third reviewer resolved any disagreements.

Assessment of study quality
Study quality was assessed using the Jadad scale (maximum score 3) and EPOC (Cochrane Effective Practice and Organisation of Care) risk of bias tool (maximum score 7). It appeared that one reviewer assessed study quality and a second reviewer checked for accuracy.

Data extraction
Data on clinical, physical and psychological outcomes, health service use and social outcomes were extracted by one reviewer and checked by a second reviewer.

Methods of synthesis
Data were combined in a narrative synthesis due to wide variation between studies.

Results of the review
Eleven RCTs (1,015 participants, range 22 to 399) and 26 comparative studies were included in the review. Only data on RCTs were included in the analysis. Study quality was generally low: two studies scored 3 on the Jadad scale, four scored 2 and five scored 1; one study scored 6 on the EPOC scale, four scored 5 and the rest scored 4 or under.
Supported early discharge for very low birth-weight or medically fragile babies resulted in fewer days of hospital care and improved weight gain compared to a conventional discharge group (one RCT).

There were no significant differences between outpatient care compared to hospital care for metabolic control or insulin dose for children with newly diagnosed insulin-dependent diabetes mellitus (one RCT) or for children with mental health problems for clinical and social outcomes or impact on family or carers (two RCTs).

For children with acute physical conditions, care closer to home resulted in higher days of care and readmissions (two RCTs) and a higher level of complications (one RCT) compared to control groups. All three trials reported no significant differences between groups for parent and family satisfaction with services.

Improvements in quality of life were reported for a trial that compared home chemotherapy with hospital administered chemotherapy. Results were mixed for adverse events.

Mixed results for clinical and psychological outcomes for treatment of chronic headaches were reported (one RCT). Improved clinical and mental functioning outcomes were found for rehabilitation of children with traumatic brain injury treated at home compared to in a clinic (one RCT).

**Cost information**
The overall quality of data was mixed. Studies of home care for very low birth-weight or medically fragile babies suggested that care closer to home may save healthcare costs (five studies). Two further studies of care closer to home reported potential to save healthcare costs and reduce financial costs for families but difficulties in other parts of the health economy prevented potential savings from being realised (two studies). Reduced healthcare costs and fewer days off work for family members were reported for home versus hospital traction for femoral shaft fractures (one study). Home chemotherapy suggested lower costs for families (two studies) and home treatment for febrile neutropenia suggested reductions in healthcare costs (one study). Care closer to home offered cost advantages for technological care (three studies). Other evidence was regarded as weak or unexplored.

**Authors’ conclusions**
Models of care closer to home appear to deliver equivalent clinical outcomes for children and young people who are ill when they are offered to suitably chosen groups and when appropriate care protocols are in place.

**CRD commentary**
The review question was clear with broadly defined inclusion criteria. A wide range of sources were searched and efforts were made to reduce language and publication biases. Study quality was assessed using appropriate tools and the results were reported for individual studies. Appropriate methods to reduce reviewer error and bias were used throughout the review process.

A narrative synthesis was appropriate given the variation between studies in terms of participants, treatments and outcomes. The authors acknowledged data limitations including small study samples that may be underpowered and low study quality. Results for some outcomes were reported in single studies.

The authors’ conclusions reflect the evidence presented but should be considered tentative as the evidence base was small and the evidence synthesis was limited.

**Implications of the review for practice and research**
**Practice:** The authors did not state any implications for practice.

**Research:** The authors stated a need for further robust research to investigate the role of care closer to home in the lives of families from minority communities or those in socio-economically deprived groups and in rural areas. Factors that influence whether families feel able to use care closer to home services, views of children and the impact on primary and community care service require exploration.

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Record Status
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.