‘In-reach’ refers to active involvement of health professionals from primary/community care in the management of patients receiving (or presenting for) treatment in secondary care.

Evidence is not definitive but availability of primary care staff to treat less urgent cases in A&E departments may result in better use of NHS resources.

For older patients admitted to hospital there is evidence that comprehensive geriatric assessment can reduce premature mortality and admission to residential care, particularly when conducted in dedicated wards.

Individual discharge planning from the outset can reduce length of hospital stay and reduce risk of readmission within three months.

Current national policy is strongly in favour of integration, which may make implementing in-reach interventions easier.

We found little robust cost-effectiveness evidence for these interventions. There is a risk that apparent savings in hospital costs may merely be transferred to primary or social care.
Background
This evidence briefing was requested on behalf of clinical commissioning groups (CCGs) in the Bristol area. The scope of the briefing is defined as follows:

Population: The primary population of interest appears to be elderly people/people with long-term medical conditions. Given the focus on reducing hospital admissions, studies involving the broader population of people attending A&E departments could also be of interest.

Intervention: ‘In-reach’ refers to active involvement of health professionals from primary/community care in the management of patients receiving (or presenting for) treatment in secondary care. Examples could include in-hospital pre-admission assessment; other pre-hospital triage systems; care co-ordination and discharge planning with input from embedded primary and/or social care professionals; or case management by community matrons.

Comparator: The relevant comparator is likely to be ‘usual care’, which could involve provision of similar services in a different way or (more likely) a somewhat lower level of active management. Usual care is often poorly described in both primary research studies and systematic reviews, which can make it difficult to assess the real effectiveness of an intervention.

Outcomes: Including but not limited to: unplanned or inappropriate hospital admissions; hospital length of stay; hospital readmission; any measures of patient safety; patient satisfaction/quality of life; any measures of costs or cost-effectiveness.

Methods
This briefing is a rapid appraisal and summary based mainly on existing sources of synthesised and quality-assessed evidence, primarily systematic reviews, health technology assessments and economic evaluations. It is not a systematic review and we have not carried out exhaustive literature searches for primary studies.

Systematic reviews and economic evaluations have been identified by searching the following sources:

- DARE (quality-assessed systematic reviews of interventions)
- Cochrane Database of Systematic Reviews
- NHS EED (economic evaluations)
- CRD HTA database.

Summary of included evidence
This briefing includes evidence from 17 systematic reviews, one economic evaluation and one report identified outside the search described above. We have classified the interventions by where they are applied in the care pathway. Key evidence sources cover triage1-3; primary care in emergency departments4,6; comprehensive geriatric assessment7-9; and discharge planning.10-12

A rapid evidence synthesis on initiatives to reduce length of stay in hospitals (see http://www.nets.nihr.ac.uk/projects/hsdr/11102609) is expected to be published in early 2014. Findings from the synthesis will be incorporated in any update of this evidence briefing.
Interventions applied before admission (including in the emergency department)

Triage

Two recent systematic reviews have looked at triage systems in emergency departments and in healthcare more generally. These reviews have some methodological limitations but overall they provide reasonable summaries of a substantial body of evidence. We have not discussed the reviews here because they fall outside the main scope of this briefing but more details can be found in the briefing on urgent care services. A 2013 systematic review (also discussed in the urgent care briefing) found a lack of reliable evidence (no studies met the inclusion criteria) regarding triage of acutely ill patients in the context of pre-hospital emergency services.

Primary care in emergency departments

The use of primary care professionals to provide non-urgent care in emergency departments would seem to meet the definition of in-reach and has been assessed in a Cochrane systematic review. The review included three non-randomised studies involving 11,203 patients and all conducted in the 1990s. Participants were people attending emergency departments and their average age was in the 20s or 30s (where reported).

The studies compared treatment provided by GPs and emergency physicians for patients who had undergone some form of triage. Two of the included studies reported that GPs used significantly fewer resources than emergency physicians, including fewer blood tests, X-rays, hospital admissions and referrals to specialists. However, the third study found no significant differences. Initial triage was done by trained nurses in the studies that showed significant differences and by receptionists in the third study, suggesting the importance of accuracy in the triage process. The review authors concluded that the evidence was insufficient to draw firm conclusions for practice or policy. This reflects both the low quality of the included studies and the fact that no information was available on outcomes like waiting times, length of hospital stay and patient outcomes (including adverse events and mortality).

A scoping review included in a report by the Primary Care Foundation also explored the interface between primary and emergency care. This review similarly found that GPs working in emergency departments made fewer referrals and undertook fewer tests. The review also found that redirecting patients away from the emergency department by referring to primary care services had variable results in terms of future attendances and safety.

Presence of a GP in the emergency department was assessed in a recent economic evaluation. Patients who referred themselves to the emergency department and were not in need of immediate treatment were seen by a GP. Costs and outcomes were compared with an earlier period when all patients were seen by emergency department staff (usual care).

Availability of a GP in the emergency department was associated with significantly lower process time, higher patient satisfaction and no difference in the number of correct diagnoses. Total costs based on GP staffing between 10am and 5pm (2007 prices) were significantly lower compared with usual emergency department care (mean difference €71, 95% confidence interval €23 to €121).
Care co-ordination in emergency departments

A systematic review of this topic covered a broad range of participants from children to the elderly. Most interventions did not appear to have an element of in-reach.\textsuperscript{13}

Geriatric assessment in emergency departments

A 2009 systematic review assessed the effectiveness of ‘gerontologically informed nursing assessment and referral’ interventions for older people attending emergency departments.\textsuperscript{9} This review had only limited overlap with the care co-ordination review (three studies were included in both reviews). Nine studies were included in the review. Two of these studies involved risk assessment tools administered by community nurses to older emergency people presenting at the emergency department. The first study was a before-and-after study which reported that re-attendance and re-admission rates were significantly lower at the end of the post-intervention period.

The second study was a quasi-randomised trial with assignment to groups by day of emergency department attendance. This study reported that patients receiving the community nurse intervention showed reduced functional decline at four months compared with control participants but there was no significant effect on depressive symptoms, caregiver outcomes or satisfaction. Intervention group participants were more likely to have a referral to a community health centre or primary care physician and to have received home care services one month after the index emergency department visit. They were also more likely to have made a return visit to the emergency department. The intervention was considered cost-effective in terms of overall societal costs.

The authors of the systematic review concluded that the evidence for the effectiveness of gerontologically informed nursing interventions should be interpreted cautiously. This caveat also applies to the two studies of community nurse interventions as one had no control group and the other was non-randomised and showed mixed results across a range of diverse outcomes.

Interventions applied during admission and at discharge

Comprehensive geriatric assessment following admission

Comprehensive geriatric assessment has been defined as a ‘multidimensional interdisciplinary diagnostic process focused on determining a frail elderly person’s medical, psychological and functional capability in order to develop a co-ordinated and integrated plan for treatment and long-term follow-up’ (quoted in Ellis et al.).\textsuperscript{8} There appears to be potential for in-reach involvement in this process although only involvement of social workers appears to be standard. Two recent systematic reviews have examined different aspects of comprehensive geriatric assessment for elderly people admitted to hospital.

The first review looked at patients who were admitted and discharged rapidly (in less than 72 hours).\textsuperscript{7} This review included five randomised trials (2,287 participants) and found no clear benefit of comprehensive geriatric assessment for mortality, hospital readmission and a range of other outcomes. However, as the number of included trials was small and their overall quality was low, the authors stated that further well-designed trials were justified.
The second systematic review of comprehensive geriatric assessment assessed its use for older people (over 65) admitted to hospital as an emergency for any reason.8,14 This broader review included 22 randomised trials with 10,315 participants. Patients who received comprehensive geriatric assessment were significantly more likely to be alive and living at home after 6 and 12 months of follow-up compared with those who received general medical care (odds ratio 1.25 (95% confidence interval 1.11 to 1.42) at 6 months and 1.16 (1.05 to 1.28) at 12 months. This equated to one extra patient alive and at home after 12 months for every 17 patients who received comprehensive assessment rather than general medical care. Patients who received comprehensive geriatric assessment were also less likely to be living in residential care, but there was no difference in hospital readmissions.

Subgroup analysis suggested that the benefit of comprehensive geriatric assessment was associated with care delivered in dedicated wards rather than by mobile teams. Twelve of the included trials reported on costs, although none were conducted in the UK. Most trials reported hospital costs only and most (but not all) found reduced costs associated with comprehensive geriatric assessment. Four trials reported nursing home costs and all showed reduced costs in the comprehensive geriatric assessment group. The review authors concluded that comprehensive geriatric assessment might be a cost-effective intervention and recommended further economic evaluation.

Core team members in the included trials varied but almost always included a social worker as well as geriatricians and specialist nurses. Comprehensive geriatric assessment appears to be an evidence-informed intervention that can be delivered with an element of in-reach and supports integration between primary, secondary and social care.

Discharge planning

Three systematic reviews have looked at discharge planning tailored to the needs of the individual patient. A recently updated Cochrane review looked at the available randomised trials of individual discharge planning versus routine care.12 The review included 24 trials with 8,098 participants. Populations in the included trials varied. The largest group of studies recruited older patients admitted to hospital with a medical condition. For these patients, individual discharge planning was associated with small but statistically significant differences in length of hospital stay (0.91 days (95% confidence interval 0.27 to 1.55); mean length of stay in the control groups ranged from 5.7 to 12.4 days) and readmission within three months of discharge (relative risk 0.82 (0.73 to 0.92)). The authors noted that reductions in length of hospital stay potentially free up resources but it is unclear whether costs are really saved or merely shifted from secondary to primary care. There was no significant effect for mortality or for being discharged from hospital to home (rather than residential care).

The quality of this evidence was rated as moderate using the GRADE system, which means that further research is likely to have an important effect on our confidence in these effect estimates and may change the estimates themselves. Importantly, only one trial included in this review had health care services outside the secondary care setting involved in discharge planning, which means that the relevance of this evidence to in-reach models of care is uncertain.

Another recent systematic review specifically examined the effectiveness of early discharge planning for acutely ill or injured older adults (65 years or older).10 Early discharge planning was defined as being started during the acute phase of illness or injury and was compared with usual care. Nine randomised or quasi-experimental trials were
including. Meta-analysis showed no difference between early discharge planning and usual care for length of stay or mortality. However, early discharge planning reduced risk of readmission within 3 to 12 months by 22% (relative risk 0.78 (0.69 to 0.90)) and reduced length of stay on readmission by 2.47 days (0.81 to 4.13). As with the Cochrane review, the interventions were mainly delivered by secondary care staff but social workers and home-care team members were involved in discharge planning in two studies.

A 2009 systematic review of discharge planning for elderly patients included a wider range of study designs than the Cochrane review. The authors concluded that discharge planning interventions from hospital to home have a robust effect on patient satisfaction and moderate effects on quality of life and resource use. However, uncertainty over parts of the review process, potential for missing studies and a lack of good-quality data suggest that this review is less reliable than the Cochrane review.

Other systematic reviews

We have also located systematic reviews that address broad topics such as ‘organisational interventions to reduce emergency department use’, ‘interventions to improve patient handovers from hospital to primary care’, ‘interventions to reduce hospital readmission in the elderly’, case management (including hospital-initiated case management) and ‘interventions to reduce 30-day rehospitalisation’. These do not appear to add any significant useful evidence to the more narrowly focused reviews discussed above but could be investigated further if required.

Cost-effectiveness

The economic evaluation by Bosmans et al. of addition of GP care to an emergency department is discussed in the appropriate section above. Some of the included systematic reviews also reported limited information on costs or cost-effectiveness and this has been incorporated in the summaries above. No further cost-effectiveness evidence on hospital in-reach interventions was identified by our searches of NHS EED or the CRD HTA database.

Implementation

It is difficult to comment on implications for implementation without more details of the preferred intervention(s) and the organisation of services in the Bristol area. In general, integration of services across primary, secondary and/or social care has proved difficult to achieve in many cases. However, there is now a major drive to achieve better integration of services supported by NHS England and the Department of Health and this background may make it easier to overcome some of the barriers that have existed in the past.
Implications

• In-reach from primary and community to secondary care can occur at various points in the care pathway. We have identified a number of systematic reviews of potentially relevant interventions. In most cases the element of in-reach is limited and is only present in a few of the included studies. Thus, the conclusions drawn relate to the effectiveness of the intervention overall (compared with ‘usual care’) rather than to the added value of the in-reach aspect.

• The evidence for primary care professionals being present in emergency departments is not definitive but availability of primary care staff to treat less urgent cases in accident and emergency may result in better use of NHS resources overall.

• Looking specifically at the needs of older patients, there is potential for elements of in-reach in conducting comprehensive geriatric assessments, both in the emergency department setting and following admission to hospital. The evidence base for assessment in the emergency department is limited. For older patients admitted to hospital there is robust evidence from randomised trials that comprehensive geriatric assessment can reduce premature mortality and admission to residential care, particularly when conducted in dedicated wards.

• Moderate quality evidence suggests that individual discharge planning can reduce length of hospital stay and reduce risk of readmission within 3 months. Discharge planning started during the acute phase of illness or injury may be particularly beneficial for reducing the risk and impact of subsequent readmissions.

• We have found limited economic evidence related to in-reach interventions. Availability of GP care in an emergency department reduced costs compared with usual treatment by emergency care staff in one Belgian study. Most trials of comprehensive geriatric assessment reported that the intervention reduced costs, but normally only hospital costs were taken into account.

• Implementation of in-reach interventions will need to take into account the barriers that exist to integration of services between health and social care. Current national policy is strongly in favour of integration, which may make these barriers easier to overcome.
References


