PRIORITY BRIEFING
The purpose of this briefing paper is to aid Stakeholders in prioritising topics to be taken further by PenCLAHRC as the basis for a specific evaluation or implementation research project. They were complied in 2-3 days.

Does the addition of an Acute GP Service improve patient outcomes and reduce costs for specific health conditions?

Question ID: 4
Question type: Intervention
Question: For specific health conditions, does the addition of an Acute GP Service improve patient outcomes and reduce costs?

Population: Acute medical admissions received by Derriford Hospital via GP referral focusing on the following conditions: atrial fibrillation, exacerbation of chronic obstructive pulmonary disease, chest infection, pulmonary embolism, non cardiac chest pain, cellulitis**.** As a further sub-group we would like to examine complexities such as co-morbidity, age and sex.

Intervention: The Acute GP Service (AGPS) ensures the patient is actively managed, from the point of referral, by an experienced clinician. Liaison with referring GP includes:
1. Level of treatment patient requires
2. Alternatives to admission
3. Potential issues with discharge
(This service is currently running but patients outcomes have not been evaluated against usual care).

Control: Patients with similar medical conditions who have followed the normal medical admissions path (patient referred by GP to secondary care via the senior house officer (SHO) covering the medical take), to be selected or randomised on the Medical Assessment Unit (MAU), or, comparison with patients undergoing normal medical take at a comparator site.

Outcome: The following outcomes will be measured: patient satisfaction questionnaire/patient rated outcome measures, service efficiency, evaluation of patient safety, admissions and re-admissions, length of stay in acute setting, quality of life/specific functional outcomes e.g. for complex, frail elderly and disease specific quality indicators e.g. display of evidence based practice/NICE guidance compliance. This information may then be used to design similar services and disseminate knowledge and encourage development of the service nationally.

Acute GP service:
The AGPS is a team of experienced GPs with Specialist Interest who are based on the MAU at Derriford. Their role is to manage the referrals to the adult medical

take (admissions) and ensure all options are explored before a decision to admit to the hospital is made. They receive referrals from community practitioners (such as GPs, District Nurses, Emergency Care Practitioners, Practice Nurses) and secondary care based staff such as DVT Clinic, Pre Op Assessment, Emergency Department (ED). Most of the referrals are made by phone where the referrer is asking for admission because they feel they have run out of options for the patient. The idea is to utilise the knowledge of the specialist GPs to ensure optimum use of community pathways or to manage the patient in an ambulatory way rather than as an inpatient under a secondary care team. Many patients come to the MAU and are seen by the GPs there and discharged on the same day, rather than opting for the traditional inpatient method of management. Patient choice is at the forefront of the decision making ensuring risks of not being admitted are explored and understood by all concerned. The service is different from those working with EDs in so much as those tend to offer primary care services to patients attending with minor illness, whereas the AGPS is about ambulatory care for those who would have historically been admitted to hospital.

The Health Problem
Most of the literature refers to inappropriate admissions in emergency departments. In this situation it is estimated that between 3.4 and 41% of admissions are avoidable. No similar information has been found with regard to MAU admissions. The AGPS service in Plymouth has bee running for four years and has continued to be evaluated in terms of patient satisfaction and cost effectiveness. It is reported that approximately 22% of the patients referred are managed without an inpatient stay.

Guidelines:
The Royal College of Physicians report on 'Acute Medicine: making it work for patients' does not refer to the specific use of a GP in MAU units. However, they do encourage multi-disciplinary working and communication in order to provide more efficient services for patients.

NHS Priority

Regional
SW SHA Priorities framework 2008-11
AGPS may help to ensure:
- that 95% of acute medical patients will have an assessment by an acute physician consultant within 4 hours of admission
- levels of patient satisfaction are improved
- the productivity of clinical activity is improved

Local perspective
- DPCT individual plans, with personalised health action plans for people with a long term illness or disability who wish to have these (AGPS could potentially help with this)
- DPCT 30% reduction in emergency bed days
- Plymouth Hospitals NHS Trust aim to provide a comprehensive range of accessible services in acute care and good communications
- RDE aim to deliver services in a comfortable, friendly environment in which staff can care for patients effectively

Existing Research

Published research
Inappropriate admissions is a common problem. The use of an acute GP service to help reduce the level of inappropriate admissions has been investigated in a number of research studies although the focus was primarily on emergency care. Several studies aim to determine the causal factors of inappropriate admission[1,2,3] concluding that the availability of the family to care for the patient and the scope for providing outpatient care are two of the main influencing factors. One study has attempted to determine efficiencies in an MAU in another

UK hospital.[4] Their model is designed to be able to calculate the level of resource needed to cope with varying levels of MAU patients, however it does not compare MAU patient outcomes with those outcomes in patients who go through other processes.

The AGPS is reported to be supported by a retrospective study, performed by Bristol Royal Infirmary, of a similar GP Support Service. The results showed that of all the GP emergency referrals made for MAU admission, the GP Support Service attempted to intervene in 33% either by offering an alternative care plan to the community GP over the phone or by offering further assessment in the GP Support Unit, based at the hospital. Of these, alternatives to admission were found for 84%. However, we have been unable to contact the researchers involved in this study to confirm their findings and have been unable to identify any publications resulting from their work (except a handbook for the service).

Ongoing Research:
No ongoing research in this area was found.

Feasibility:
Links to Derriford Hospital and Bristol Royal Infirmary. The AGPS has been functioning in Plymouth Hospitals for a number of years but without formal evaluation. Thorough evaluation is needed to determine if the service has improved outcomes for patients and the hospital.

References

1) Al-Omar, B. A., A. F. Al-Assaf, et al. (2006). "Factors influencing inappropriate hospitalization in Riyadh, Saudi Arabia: physicians' perspectives." East Mediterr Health J **12 Suppl 2**: S195-206.
This study investigated factors causing inappropriate hospitalization from the physicians' perspectives at government, primary and military hospitals in Riyadh, Saudi Arabia. A self-administered questionnaire to 250 physicians showed that the majority were aware of inappropriate admissions. Problems with inappropriate admissions occurred more frequently at public hospitals (both government and military) than private hospitals. The reasons believed to contribute most to inappropriate admission and hospitalization were the inability of the patient's family to take care of the patient, to satisfy the patient's request, and the absence of someone to get the patient out of the hospital.

2) Campbell, J. (2001). "Inappropriate admissions: thoughts of patients and referring doctors." J R Soc Med **94**(12): 628-31.
Research on inappropriate hospital admissions has tended to neglect the views of the referring doctors and the patients. In this study, the Appropriateness Evaluation Protocol was applied to a random sample of 102 emergency medical admissions. The patients and doctors were then presented with a list of possible alternatives to admission that might have been used at the point of referral. Case notes were available for 88 patients. As judged by these, 28% of admissions were inappropriate, the commonest reason being the potential for treatment or tests to have been performed as outpatient procedures; next commonest was the possibility of lower level care. The response rate to the questionnaires was about two-thirds, for both doctors and patients. Of the general practitioners and casualty doctors who responded, 60% specified alternatives to admission that they would have considered, and the equivalent figure for patients was 70%. For both groups the major preferences were same-day outpatient assessment and admission to a community hospital. Referring doctors and patients, in this survey, favoured alternatives to acute medical care in proportions much higher than that of supposedly inappropriate admission.

3) Campos Rodriguez, F., I. De la Cruz Moron, et al. (2006). "[Appropriateness of hospital admissions to a pulmonology department]." Arch Bronconeumol **42**(9): 440-5.
OBJECTIVES: To analyze the rate of inappropriate admissions to a pulmonology department over the period of a year and to establish the reasons for such admission and predictors. PATIENTS AND METHODS: All 2004 admissions to the pulmonology department of the Hospital de Valme were analyzed using a version of the Appropriateness Evaluation Protocol (AEP) developed for concurrent review. Two physicians who were not directly involved in admitting the patients performed the review. A logistic regression analysis was performed in order to identify the independent predictors of inappropriate hospital admission. RESULTS: Of the 633 admissions analyzed, 92.1% (n = 583) were appropriate

and 7.9% (n = 50) were inappropriate. The main reason for considering an admission to be inappropriate was that the patients in question could have been managed as outpatients (70%), whereas appropriate admissions were most frequently justified by the need for parenteral treatment (76.3%) or respiratory therapy (62%). In the logistic regression analysis, the variables that were independently associated with inappropriate admission were nonurgent admission (odds ratio, 2.82; 95% confidence interval, 1.28-6.21; P = .01), and a neoplasia diagnosis as the reason for admission (odds ratio, 8.57; 95% confidence interval, 2.69-27.24; P < .0005). CONCLUSIONS: The rate of inappropriate hospital admissions was lower than that reported in other studies. Most inappropriate admissions were of patients who could have been managed as outpatients. An admission diagnosis of neoplasm and nonurgent admission were independent predictors of inappropriateness.

4) Oddoye J P, Yaghoobi M, et al. (2007). "A multi-objective model to determine efficient resource levels in a medical assessment unit." Journal of the Operational Research Society **58**(12): 1563-1573.
This paper details models that determine the efficient allocation of resources on a medical assessment unit (MAU) of a general hospital belonging to the National Health Service (NHS) UK. The MAU was established to improve the quality of care given to acute medical patients on admission, and also provide the organizational means of rapid assessment and investigation in order to avoid unnecessary admissions. To analyse the performance of the MAU, doctors, nurses and beds are considered as the three main resources. Then a model is developed using the goal programming approach in multiobjective decision making and solved to deal with MAU performance. The developed model is solved under three different sets of patient admissions with the same resource levels using past data from the MAU. The results of the model are used to analyse the needed resource levels. Conclusions as to the appropriate staffing levels and functions of the MAU are drawn.