

an upward trend: the underlying incidence of asthma seems to have been increasing over recent decades in children in industrialised countries<sup>3,4</sup>; awareness of asthma is believed to have increased during the observation period; and a labelling shift from bronchitis to asthma has probably occurred during this period.

Because an increased incidence of new admissions to hospital for asthma was not observed, other factors must have had a moderating influence on the risk of admission. The factors favouring an increased incidence of asthma may mainly contribute mild cases of asthma, which would add little to the risk of admission to hospital and readmission. This is probably not, however, a major factor, since the relative contribution of short admissions was unchanged throughout the period. The reduced risk of readmission over the study period therefore suggests that the treatment of chronic asthma has improved. The reduced length of stay in hospital for both first admissions and readmissions substantiates this interpretation of our data.

In conclusion, these data provide evidence suggesting that the management of asthma in Danish children has improved, leading to less frequent readmission and to shorter stays in hospital.

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## Outcome and use of health services four years after admission for acute myocardial infarction: case record follow up study

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Acute myocardial infarction affects around 250 000 people each year in the United Kingdom. To our knowledge, medium term outcome and use of resources, other than revascularisation rates,<sup>1</sup> have not been reported in a non-selected population.

### Subjects, methods, and results

All patients resident in Nottingham Health District who had been admitted in 1992 for acute myocardial infarction to either of Nottingham's two hospitals were identified from the Nottingham heart attack register.<sup>2</sup> We reviewed all hospital and general practitioner case notes for investigations, interventions, readmissions, clinic visits, and symptoms up to August 1996. Data on deaths were obtained from the Office for National Statistics.

Overall, 900 patients were admitted for myocardial infarction (mean age 66.6 years; 561 men). Data extraction was completed in 899 (99.9%). The table shows the outcomes in the 695 patients who were discharged alive.

In all, 537 patients received a clinic appointment on discharge (eight did not attend and seven others had died). The remaining 158 did not receive follow up—medical records did not indicate why.

Only 126 (24%) patients who were followed up had had a previous myocardial infarction compared with 66 (42%) of those who were not ( $\chi^2 = 20.47$ ,  $P < 0.001$ ). The two groups did not differ in size of infarct (as measured by rise in creatine kinase concentrations ( $\chi^2 = 1.51$ ,  $P = 0.219$ ), location of infarct ( $\chi^2 = 0.72$ ,  $P = 0.399$ ), or Killip score at hospital presentation ( $\chi^2 = 2.27$ ,  $P = 0.132$ )). Patients without follow up were,

however, less likely to have received thrombolysis ( $\chi^2 = 25.01$ ,  $P < 0.001$ ) and to have been under the care of a cardiologist; 142 of the 519 (27%) patients managed by a physician and 16 of the 176 (9%) managed by a cardiologist were not followed up ( $\chi^2 = 24.97$ ;  $P < 0.001$ ). These patients were no more likely to require readmission in the four years after infarction, but after adjustment for age, sex, and previous infarction 79 (50%) had died compared with 130 (24%) ( $z = 3.44$ ,  $P = 0.001$ ). There were no differences in the proportion of deaths from coronary heart disease in the two groups (52 of the 78 deaths (67%) in those not followed up *v* 88 of the 129 deaths (68%) in those followed up;  $\chi^2 = 0.54$ ,  $P = 0.817$ ). By the end of the study 135 patients had never had an outpatient cardiology review and 62 had had no further hospital contact.

Of the 488 patients alive at August 1998, 282 were recorded as having or not having angina. Ninety eight had documented ongoing anginal symptoms, of whom 45 required two or more antianginal drugs; none of the 21 patients under the care solely of their general practitioner but 20 of the 24 patients under specialist review were being investigated.

### Comment

Survivors of myocardial infarction comprise a mixed group with varying degrees of underlying coronary disease, cardiac impairment, and socioeconomic status, all of which influence health care needs.<sup>3</sup> The prospects for a patient surviving an infarction are not particularly

Use of health services and outcome in unselected cohort of patients admitted for acute myocardial infarction during median of 4 years of follow up

	No of patients	No of occasions/appointments
<b>Investigation and intervention</b>		
Electrophysiological studies	64	82
Echocardiography	247	375
Exercise tolerance test	142	186
Angiography	104	123
Revascularisation	78	86
Other surgery	3	3
<b>Readmission</b>		
Total No of readmissions	470	933
Definite myocardial infarction	75	80
Unstable coronary syndrome	108	202
Unexplained chest pain	39	56
Congestive heart failure or left ventricular failure	72	114
Other cardiac reason	51	61
Stroke or transient ischaemic attack	19	19
Collapse	12	15
All other	284	191
Died on readmission	97	
<b>Outpatient clinic or follow up</b>		
Attendance at outpatient clinic:		
6 months after initial event	532	1081
>6 months after initial event	403	1748
Follow up by GP or no follow up initially	158	
No outpatient attendance since infarction	117	
<b>Died</b>		
Total No of deaths	207	

favourable, and patients require hospital based care over years.

Guidelines recommend formal follow up after discharge,<sup>4</sup> but we found that clinical review was not universal. Opportunities were missed to optimise secondary prophylaxis and expedite cardiac rehabilitation, not least among those who did not receive routine follow up whose mortality was inexplicably high.

Demand did not fall with time: many survivors continued to attend clinic years after their infarction, reflect-

ing the long term nature of coronary disease. Two thirds were readmitted with symptoms suggestive of further infarction (most on more than one occasion) or heart failure. Half underwent some form of cardiac investigation. Our angiography rate of 840 per 1 million population (63% of whom have had myocardial infarction) is close to British Cardiac Society recommendations<sup>5</sup> but low by standards in the United States.

Opportunities to reduce the impact of disease are being missed. The least that should be offered is to review all patients, optimise treatment to minimise symptoms and cardiac risk, and advise general practitioners when to refer for a specialist opinion.

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### A memorable patient

#### “Now I can be remembered”

During a visit to a psychiatric hospital in eastern Europe I was approached by a fluent English speaking patient and asked to take a photograph of another patient as a special favour. The hospital itself displays many of the problems of institutions in general and the more specific problems of neglected, ostracised, and stigmatised institutions in particular. Consequently, though it was mid-winter and viciously cold, many of the patients were clothed in nothing more than threadbare pyjamas and primitive, sockless footwear, and the most frequently gestured request was a touching of hand, palm up, against the gastric area of the abdomen, indicating hunger.

Despite this, the photographic subject turned up beaming gratitude and wearing his best clothes—worn out trousers, a shirt, tie and jacket, and a dapper hat. Through the interpreter he told me his story: now in his 50s, he had been an inpatient for the past two decades. In recent months he had been feeling physically worse and some weeks ago was diagnosed as having lung cancer and given the clear message that his days were numbered. His family had distanced themselves from him many years previously, psychiatric morbidity acquiring the familiar level of stigma, and

though he had no way of knowing for sure, thought he might now be the last of his name.

About a mile away from the back of the hospital, through the vast fields, reminders of totalitarian collective farming, there is a small patch of land fenced off crudely to separate it from its arable surroundings. Within are numerous primitive wooden crosses, many askew, most now nameless. This is the hospital's own graveyard, the final resting place for many of its disowned and forgotten residents. But a few of the crosses have little photographs at their centres, portraits of the deceased.

This man had no material possessions left in the world except enough clothes to dress with dignity. He seemed to have no ill feeling or malice and showed no signs of self pity despite his pathetic tale. His only concern now in life was that he would not be anonymous in death. “Now I can be remembered,” he said and beamed a metallic toothed grin at me, thanking me, and gently shaking my hand before returning to his ward.

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