

Does audit improve DNR decision making?

ABSTRACT—The use of 'do not resuscitate' (DNR) orders in hospitals has been the subject of considerable comment in both the medical and the lay press. Guidelines have been produced to help make DNR decisions but, as yet, there have been no published accounts of these in practice. We have used audit to develop DNR policy in our hospital, and have reviewed practice after the introduction of guidelines. This led to early consultant involvement in making decisions in 55 of 80 patients (69%) who were assessed as DNR at the time of death or discharge, documentation of reasons for DNR in all 55 of these and documentation of discussion with nurses in 49 (89%). Consultants agreed with DNR decisions made by their juniors in 31 of 34 cases (91%) and changed 'for CPR' decisions to DNR in 24 of 108 (22%). We have demonstrated that audit is an appropriate way to change and develop practice in sensitive areas such as this.

After cardiopulmonary resuscitation (CPR) came into widespread use in the early 1960s it became apparent that its use was inappropriate for some hospital inpatients [1–5], most obviously the terminally ill but also patients with disseminated malignancy, severe sepsis, advanced cardiac or renal failure and prolonged hypotension who almost never survived [2–6].

Approaches to deciding about exclusion from CPR attempts differed in the United States of America (USA) and the United Kingdom (UK). In the USA the legal and ethical arguments surrounding 'do not resuscitate' (DNR) policies encouraged the evolution of formalised, legally valid, written protocols called 'DNR orders' [7]. These were introduced in the 1970s and required physicians to use CPR for all patients unless a DNR order had been written.

In the UK it was not felt necessary to have such rigid procedures and doctors continued to decide about the value of CPR attempts in an informal way. Indeed, in 1982 an editorial in the *British Medical Journal* claimed that there was no need for written, formalised DNR procedures in Britain [2]. Recently, however, it has become clear that formal guidelines for making DNR decisions are also needed in the UK.

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The government's Chief Medical Officer has written to all doctors in England and Wales, suggesting that the medical profession should develop policies for making DNR decisions [8]. The British Medical Association and the Royal College of Physicians of London support this view, as do several other authors [9–12].

Recent surveys of DNR decisions in the UK have confirmed that there is a need for more formal policies [13–15]. They have highlighted the lack of uniform guidelines for making decisions and a considerable discrepancy between what is documented in nursing and medical notes. In many cases a reason for a DNR decision is not documented. Some surveys have found that patients with conditions where CPR would usually be inappropriate (such as disseminated malignancy) seem to remain for CPR [13,14].

We have audited the use of DNR orders in our district general hospital to define a consensus approach to DNR decisions. We had three specific aims.

1. To determine if previous practice in our hospital matched published guidelines.
2. To determine if audit, using standards and a proforma, improved practice.
3. To determine whether consultants and juniors agreed about DNR decisions.

Methods

The audit was in four stages.

Stage 1—review of existing practice

Casenote survey. We surveyed the medical and nursing casenotes of all current adult patients in our hospital (excluding obstetric cases) on 31 May 1992. Hospital number, age, consultant, diagnoses, documentation of DNR decisions in medical and nursing notes, reasons for DNR (if given) and documentation of discussion about CPR with patients or relatives were recorded.

Staff questionnaire. We distributed 210 questionnaires by internal post to all medical staff and to trained nursing staff working in acute areas. Trainee and auxiliary nurses were excluded as were those working in obstetrics, paediatrics or non-acute areas. Staff were asked about knowledge of current resuscitation policy on their ward or unit, who usually made the initial DNR decision and what mechanisms existed for review.

Stage 2—set standard

On the basis of the questionnaire and survey results, a standard procedure for making and documenting CPR

decisions was agreed among four clinicians with an interest in this area. The standard was then presented to other colleagues for approval. The standard required that for all patients admitted to given wards under the care of a physician an A4, single sided DNR audit form should be completed on admission and inserted in the medical casenotes recording the following:

- a provisional resuscitation decision (either 'for CPR' or 'DNR') by the admitting doctor
- a review of this decision within 48 hours by the consultant (or after discussion with the consultant)
- if the consultant's decision was 'DNR', the reason for this
- documentation of communication with nursing staff.

Stage 3—implement standard

The policy was implemented for all general medical and care of elderly patients admitted to our hospital for a period of three months from 1 November 1992 to 31 January 1993.

Stage 4—review practice

After January 1993 practice was reviewed and compared to the standard by collection and analysis of all the CPR audit forms from casenotes after death or discharge.

Results

Inpatient casenote survey

On the day of the survey there were 351 inpatients (193 women) aged 16–96 years in the two district hospitals. All of these casenotes were available. A DNR decision had been written in either medical and/or nursing notes for 67 patients (19%) and a reason for the DNR decision was given in 39 (58%) of them. The principal diagnoses of those patients who were for DNR are given in Table 1.

In 39 cases (58%) DNR decisions were written in both nursing and medical notes; in 22 (33%) they

were written in the medical notes alone and in six (9%) in the nursing notes alone. In one case a specific statement indicating that the patient was for CPR was written in the medical notes, but 'DNR' in the nursing notes. Sixteen patients were identified from the casenotes who apparently had untreatable metastatic malignancy, but only three of them had documented DNR decisions.

Staff questionnaire

Questionnaires were returned by 65 nurses and 55 doctors, representing a response rate of 57%. Fifty (42%) respondents stated that they were unaware of any policy (either written or non-written) for making DNR decisions on their ward or unit. A further 41 (34%) were aware of a non-written policy but not of a written one.

When asked who made the initial DNR decision on their ward, 14 (12%) respondents said that this was usually the consultant, 54 (45%) that it was the registrar, and 37 (31%) the SHO or house officer. All but two stated that there was no mechanism for routine regular review of DNR decisions which were reviewed only if clinically indicated.

Review of practice after introduction of the standard

Over the three months period 712 patients were admitted to the study wards. Audit forms documenting resuscitation decisions on admission had been completed and returned for 309 (43%) of them. One hundred and forty two resuscitation decisions were recorded as having been reviewed by a consultant.

In 60 patients (19%) junior staff had made a DNR decision on admission; 34 (57%) of those were reviewed by consultants and DNR was confirmed in 31. In three the consultant reversed the DNR decision, and in 25 cases the initial DNR decision had not been reviewed at the time of the patient's death [17] or discharge [8]. In one case the form was lost (Fig 1).

Junior doctors made 'for resuscitation' decisions on admission in 249 patients. Consultants reviewed 108 (43%) of these decisions; they confirmed the decision in 84 and changed it to DNR in 24 (Table 2). The other 141 'for CPR' decisions made by junior doctors on admission had not been reviewed by consultants at the time of the patients' death or discharge.

In 48 of the 55 cases (87%) where the consultant had made or confirmed a DNR decision, this was done within 48 hours. Reasons for DNR were documented in all 55 and in 49 (89%) cases there was written confirmation that nursing staff had been informed of the decision.

Discussion

The British Medical Association (BMA) (in conjunction with the Royal College of Nursing and the

Table 1. Principal diagnosis of those patients 'not for resuscitation'.

Cerebrovascular accident	23
Cardiorespiratory	13
Dementia	12
Carcinoma (all)	7
Severe sepsis	4
Post CPR attempt	2
Other	6
<i>Total</i>	<i>67</i>

Resuscitation Council) and the Royal College of Physicians of London (RCPL) have recently published statements proposing a more formal approach to DNR decision making [9,10]. The BMA and RCPL agree that ultimate responsibility for decisions should rest with consultants. This view is supported by the government's Chief Medical Officer [8].

DNR decisions should be clearly documented in notes, along with reasons for making them. Decisions made on admission by junior medical staff should be reviewed as soon as possible by consultants, and subsequently at regular intervals [9,10]. Because there is as yet no clear advice on the difficult issue of how much, or how little, to involve patients and their relatives in DNR decision-making [16], we have not addressed this area in our audit. It is also apparent from the tone of their statements that the BMA and the Chief Medical Officer wish policy to be developed by the profession itself, perhaps through audit [8,9].

Our initial survey confirmed the findings of previous UK studies; no fixed policy seemed to be used for making DNR decisions, conflicting instructions were written in medical and nursing notes and some patients who seemed to be appropriate DNR candi-

Table 2. Agreement of consultants and juniors where both had been involved.

		Consultants' decisions		
		For CPR	DNR	Total
Juniors' decisions	For CPR	84	24	108
	DNR	3	31	34
Total		87	55	

dates remained for CPR. In our survey a higher proportion of DNR candidates had reasons for this documented than in previous UK surveys and this may reflect local interest in this subject [13-15].

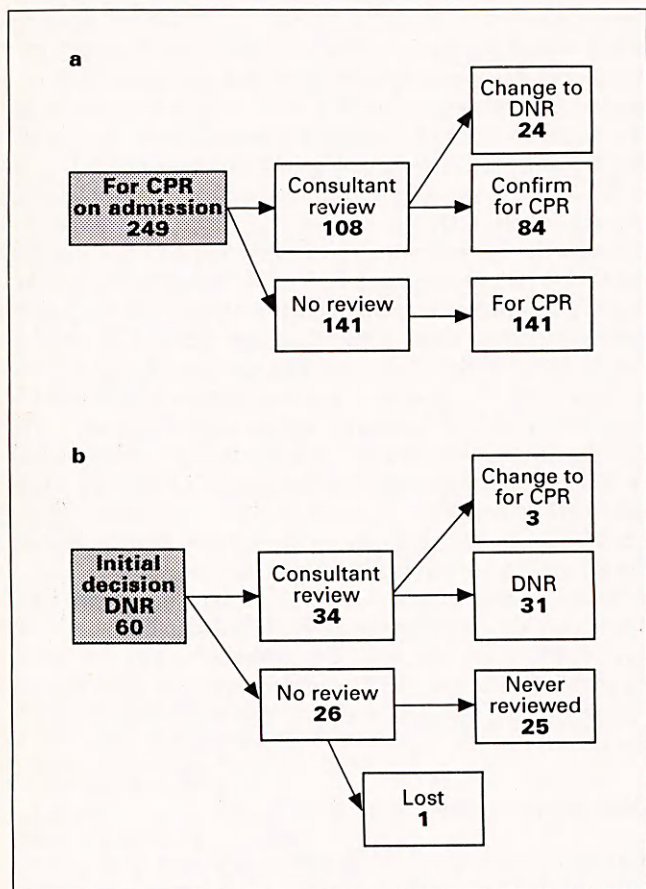
About half of all respondents to our questionnaire were unaware of any CPR policy on their ward and a further quarter were only aware of an unwritten policy. The Health Service Commissioner found that the unit he investigated had an unwritten policy only and suggested that all units should have clear, written policies [8]. Most respondents stated that DNR decisions were usually made by junior doctors without provision for consultant review.

The audit produced improvement in several of these areas. This is in keeping with published evidence that clinical guidelines can improve practice, especially if implemented in a patient-specific way at the relevant time [17].

Consultants were involved in making and documenting DNR decision in 55 of the 80 patients (69%) who were recorded as DNR at the time of death or discharge. In these cases there was a clear record of the decision and, in most cases, documented discussion with nurses. When consultants were involved in the decision this was usually within 48 hours of admission. Consultants confirmed DNR decisions made by juniors in 31 of 34 cases (91%) and changed 'for CPR' to 'DNR' in 24 of 108 (22%). Although the numbers here are small it seems that in our hospital consultants usually agree with DNR decisions made by registrars and SHOs. The suggestion [12] that all patients should remain for CPR until consultants or senior registrars decide otherwise seems unnecessarily rigid. It is also impractical in busy district general hospitals because it is usually the junior doctors who will be involved in CPR when it occurs and the same juniors who decide when to stop resuscitation attempts.

Despite these improvements we still have reservations about some areas of practice. DNR decisions for 25 patients made by juniors had not been reviewed by consultants and 17 of these patients died. We have no

Fig 1 (a) Fate of those initially 'for CPR'. (b) Fate of those initially 'DNR'.



further details of these patients; they may have been terminally ill on admission and a DNR decision was made, quite appropriately, by the duty registrar.

About half of all eligible patients were not entered into the audit either because of a lack of enthusiasm on the part of staff, or the paperwork (one side of A4) may have seemed too much. Some probably felt that it was unnecessary to document and review decisions when patients were very clearly 'for CPR'. The low rate of completion of forms may indicate problems in the implementation strategy used by the group for the guidelines, or in the development strategy (not including enough people) or in the dissemination strategy [17]. DNR rates were, however, similar in the audit group to those of the whole inpatient population before the audit (19%), suggesting that the audit sample was representative of the inpatient population as a whole.

Conclusions

There are several potential sources of inaccuracy in this audit. We have had to assume that a cross sectional survey of inpatients on a given day reflects overall practice; since the results of this survey are broadly in keeping with those from other UK hospitals, this is probably a reasonable assumption. We have also had to assume that those who responded to the questionnaire gave an accurate view of overall practice in our hospital. Because we used a cross sectional survey before the intervention and then a prospective follow-up of admissions, more patients with slow turnover and long stay are likely to be represented in the cross sectional survey.

We want to ensure that an appropriate CPR decision is made for all patients and are particularly keen to avoid CPR attempts in circumstances, such as terminal illness, where they are clearly not indicated. However, asking staff to document all CPR decisions (either 'for CPR' or 'DNR') has not been successful and may have contributed to the limited participation in the audit. In future audit cycles we will concentrate on documenting DNR decisions only.

It is both impractical and unnecessary to suggest that junior doctors should not make DNR decisions, as long as consultants review the decisions made by the juniors soon after admission and subsequently at regular intervals. Reasons for DNR decisions should continue to be clearly documented and nursing and other staff should be involved in the decision-making process, and kept informed of any changes in decisions. How much, or how little, should patients and their families be involved in DNR decisions [16]? This area has not yet been clearly addressed by the professional bodies in the UK [9,10]. Some UK authors have suggested a radical approach to involving patients in DNR

decisions along the lines of American practice [12] but we feel that there are considerable dangers in trying to extrapolate from US experience [18]. We will proceed with caution in this area until it is clear what British patients want—audit may be the best way to develop policy here.

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