Audit of resuscitation decisions has little impact on clinical practice

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ABSTRACT – Objective: To determine if clinical audit leads to sustained improvement in resuscitation decision-making.

- Method: Analysis of data from five studies performed over nine years between 1989 and 1998. Two of the surveys included all medical and elderly patients, while three surveys in 1993, 1994 and 1996 included only patients over 75 years of age.

- Results: The three surveys involving only elderly patients revealed significant improvement in recording the decisions made on resuscitation (73% vs 50%; p = 0.02) over a two-month audit cycle, but this improvement was not maintained. Clinical audit and the use of a proforma improved neither the practice of discussing resuscitation with patients nor the involvement of consultants in the decision-making process over the nine-year period.

- Conclusion: Clinical audit may lead to short-term improvements in resuscitation decision-making, but this improvement does not appear to be sustained over time. Other measures need to be considered to improve practice in this area.

A ‘do not resuscitate’ decision (or DNR order) is a statement made in advance that a particular patient should not have a cardiopulmonary resuscitation (CPR) attempt in the event of cardiac arrest. The correct application of the DNR order has been widely discussed in medical literature and increasingly in the lay press. In the UK, a formal approach to this area of practice is favoured and in some states is embodied in law. In contrast, in the UK a more informal decision-making process was favoured by the medical profession. In 1991, some concerns were expressed by the government’s Chief Medical Officer about practice related to DNR decisions, following a complaint to the Health Service Commissioner. From the investigation of this complaint it became apparent that there was no nationally agreed policy for making DNR decisions. Other important points noted in the Commissioner’s report were that:

- DNR orders were frequently verbal, not written;
- the reason behind the decision was rarely recorded;

- documentation was often in medical jargon or codes, and was inconsistent between medical and nursing notes;
- junior doctors made decisions with no mechanism for review by senior doctors;
- patients and their relatives were rarely involved in the decision.

Following the complaint, three sets of guidelines were published to aid clinical practice in this area. The guidelines, published by the British Medical Association (BMA), in conjunction with the Royal College of Nursing (RCN) and the Resuscitation Council, were widely published. They recommended that:

- all DNR decisions should be clearly marked in the medical and nursing notes, without codes or medical abbreviations;
- the reasons behind the DNR decision should be recorded;
- junior doctors’ decisions should be regularly reviewed by senior colleagues;
- the ultimate responsibility should rest with the consultant;
- the patient and, if appropriate, the next of kin should be involved in the decision, although discussion did not have to take place if a DNR order was made on grounds of medical futility.

In a subsequent court case, the judge expressed approval of a hospital DNR policy based on the BMA/RCN document.

Clinical audit is regarded as a useful tool for improving medical practice, and the BMA/RCN guidelines suggested that audit may be a useful method of improving DNR decision-making. Recently, though, there has been less enthusiasm with the audit process as the theory does not appear to work effectively in practice. Improvement in the DNR decision-making process has, however, been reported as a result of audit – although it is unclear whether this is sustained over time.

DNR decisions were first surveyed in our district general hospital in 1988, and changes in practice were subsequently introduced in keeping with the BMA guidelines. Limited audit studies have been regularly repeated since then, and more recently a further major survey was undertaken. This article reports all these results, and compares the first and last audits.

Method

Two major and three limited surveys of resuscitation decisions were carried out, using chi-square to analyse the data. The major surveys (1989 and 1998) included medical...
and nursing notes of all medical and elderly inpatients on a given day. The intervening three surveys (1993, 1994 and 1996) included only patients over the age of 75. In 1993 and 1994, sets of notes were randomly selected over a six-month period two months apart. In 1996, medical and nursing notes were analysed from two wards on one day. Subsequent to the 1989 major survey, a clerking proforma with a specific section for documenting resuscitation decisions was introduced for all patients aged over 75 years admitted to hospital. After each survey the data were presented at hospital-wide meetings, and recommendations regarding clinical practice made to medical staff. After 1993, the national guidelines were incorporated into these recommendations (which had been broadly in keeping with the BMA document).

Results

Major surveys

Frequency of resuscitation decisions in 1989 and 1998. There was no significant difference between the number of resuscitation decisions in the under- or over-75s or in all patients between 1989 and 1998 (p = 0.49, 0.2, 0.87, respectively) (Table 1).

Table 1. Frequency of resuscitation decisions made in 1989 and 1998.

| Year | Under 75 years | Over 75 years | All ages |
|------|----------------|---------------|----------|
|      | No. | %       | No. | %       | No. | %       | N    |
| 1989 | 23  | 19      | 122 | 61      | 56  | 57      | 32   | 178  |
| 1998 | 16  | 15      | 104 | 50      | 88  | 60      | 31   | 192  |

N = total number of patients in each group.

Documentation of do not resuscitate decisions. Only 4 (7%) of 57 DNR decisions made in 1989 had a reason documented for the decision. In 1998, there was a significant improvement, with 26 (60%) of 43 DNR decisions having a reason documented: futility (13), quality of life (6), both (7) (p <0.001). Of these, 23 (53%) were clearly marked, and 15 (35%) used medical codes or abbreviations (eg ‘not for 333’ or ‘not for crash’). In 1989, there were frequent discrepancies between the nursing and medical notes, with 26 (46%) decisions recorded in the medical and nursing notes, 28 (49%) in the nursing notes alone, and 3 (5%) in the medical notes alone. In 1998, all the decisions (for and against CPR) were recorded in the medical notes; 37 (80%) of these were documented in the nursing notes, but in 4 (9%) cases the decision was different in the nursing and medical notes.

Timing of documented resuscitation decisions after patient admission. In 1998, few patients had any documented decision (for or against CPR) made within 48 hours of admission and therefore, by default, would be subjected to a CPR attempt in the event of a cardiac arrest (Table 2).

Senior medical involvement in resuscitation decisions. In the 1998 survey, consultants were involved in only 4 (9%) of 43 DNR decisions. The others were made by registrars (29) and senior house officers (SHOs) (5). In five cases this information was not recorded. Only nine of the original decisions were reviewed, on average five days later. A registrar reviewed seven decisions, while an SHO and a consultant each reviewed one.

Discussion with patients and/or relatives. There was no documentation in any case notes of discussion with the patient in 1989 or 1998, even in the 13 (60%) decisions made on quality of life issues in the latter survey. Information was not available about the patients’ mental competence to participate in discussion regarding a DNR order.

Surveys in patients over 75 years

1993 survey. An audit cycle of two months was completed in 50 older patients, during which new guidelines were introduced. There was significant improvement (p = 0.02) in the frequency of explicit resuscitation decisions, from 25 (50%) to 36 (73%).

1994 survey. In the second survey, DNR orders were recorded in the medical notes of 32 (89%) of the 36 patients, compared with 9 (36%) of the 25 patients. More decisions were made in the first 24 hours after admission: 25/36 (60%) compared with 12/25 (48%). There was no improvement in documentation of discussion with patients (no cases) or the nursing staff (no cases).

1996 survey. Across 60 patients surveyed, a DNR order was made within 72 hours in 22 (37%) cases, in 16 (73%) of which a reason was documented.

Use of a clerking proforma for patients over 75 years

The clerking proforma, which contains guidelines for resuscitation, has been developed for elderly patients and is used

Table 2. Length of time after admission of documented resuscitation decisions, either for or against cardiopulmonary resuscitation (CPR).

|                  | Within 48 hours | 48-72 hours | 72 hours-7 days | After 7 days |
|------------------|-----------------|-------------|-----------------|-------------|
| Documented decision | 1            | 1           | 15             | 43          |
| No decision (ie for CPR by default) | 15          | 7           | 40             | 70          |
| Total            | 16            | 8           | 55             | 113         |
by doctors admitting elderly to elderly care wards as well as general medical wards. The audit in 1998 showed a non-significant trend in improvement in the number of recorded resuscitation decisions with use of a clerking proforma ($p = 0.07$).

Discussion

The government and other major national bodies such as the BMA and RCN are advocates of clinical audit. In particular, in the 1993 BMA/RCN document, audit was suggested as a means of improving practice in the difficult area of DNR decisions. Despite this, relatively little work has been recently published about DNR audits.

We have described in this article a number of surveys carried out over 10 years as part of the hospital clinical audit programme. They have shown disappointing results. Doctors are still not making resuscitation decisions, and inappropriate medical intervention may occur as a consequence. Despite national guidelines in mainstream literature, consultants are not involved in the vast majority of DNR orders. Poor documentation of decisions persists, discussion with patients does not seem to occur, and there is no apparent cohesive team approach to DNR decisions by health care professionals. There are circumstances in which patients can be excluded from a DNR decision because of medical futility and mental incompetence, but it seems unlikely that all the patients in these surveys fell into such categories.

Why are any short-term improvements not maintained in the long term? Berger suggests that clinical practice will never improve in the long term until the reasons why audit does not succeed have been identified. One barrier to improving practice in this area may be the emotive nature of resuscitation and its many ethical ramifications. It is probably easier for a junior doctor to avoid a long and potentially difficult discussion in the context of a busy working day or night.

Introduction of a proforma appeared to improve practice, so it may be that, if reminded, doctors will take time to make a decision. As middle-grade and junior doctors move through posts relatively quickly, any change in clinical practice may move with them.

Despite regular audit at a local level, our results show that change in practice is difficult to achieve and maintain. Indeed, at our hospital those who carried out the audits have an interest in this area, and hence may have biased the results. As simple audit alone does not improve practice sufficiently in this area, we feel that other measures need to be considered, including on going educational programmes in ethics and communication. We would suggest that it is important for senior nurses and consultants to be more involved in DNR decision-making. They are frequently in post for longer periods of time and are now all expected to participate in clinical governance.

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