

# Raising the issue of DNAR orders in vascular surgery patients

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## Abstract

The Tracey Report has recently raised the status of Do Not Attempt Cardio Pulmonary Resuscitation (DNACPR) orders in the hospital setting.[1] Guidelines are in place both nationally and locally to provide advice to clinicians on when to discuss DNACPR, and the approach to be taken. There was concern that on a busy regional vascular surgery unit, discussion of resuscitation status was not regular practice. Consequently, some patients were at risk of being inappropriately resuscitated, particularly out of hours.

The North Bristol Somerset and Gloucester DNAR decision tree[2] was the tool used to decide whether a patient should have a documented discussion and/or a DNACPR form completed. We correlated the outcome of the decision tree with the presence of a DNACPR form or documented resuscitation discussion. Baseline measurements from all vascular inpatients on the vascular surgery unit demonstrated that only 27% had a DNACPR form or documented discussion in concordance with the DNACPR Decision Tree outcome.

The aim of this project was to increase the proportion of patients with concordance of the DNACPR decision tree outcome with documented discussion or DNACPR form.

The following three simple interventions raised concordance from 27% to 64% of patients on the vascular surgery unit.

1. Including resuscitation status of each patient as a column in the doctors daily handover.
2. Posters in staff only areas to highlight the meaning of DNACPR and raise awareness of the DNACPR decision tree.
3. Educational meeting surrounding DNACPR with the vascular surgery consultants, led by a care of the elderly consultant .

This project has highlighted how raising awareness around DNACPR increases discussion amongst the clinical team surrounding resuscitation status of a patient. Consequently, this enables discussion to be had with patient and their family.

## Problem

The Tracey Report has recently raised the status of Do Not Attempt Cardio Pulmonary Resuscitation (DNACPR) orders in the hospital setting.[1] Particularly, how and when resuscitation decisions should be discussed with patients and their families.

As junior doctors rotating through different specialities, it was apparent that medical wards were improving their approach to these decisions and difficult conversations. Discussing resuscitation with vascular patients on and during admission was not common practice. This resulted in the inappropriate attempted resuscitation of patients, particularly out of hours.

## Background

Cardiopulmonary resuscitation involves three key parts: chest compressions, defibrillation, and ventilation. Regarding this treatment it is important to identify two key groups of patients. Firstly, those in which the intervention is futile, and secondly patients that have consistent wishes not to receive the above treatment in the event of an arrest.

The BMA, Resuscitation Council,[3] and GMC,[4] have been updating guidelines that provide clinicians with a framework of when and how to approach DNACPR discussions.

The above guidelines were applied in a number of ways to our local region. A recent development is a unified DNACPR form that applied to patients areas of Bristol, North Somerset and Gloucestershire. In addition, there is a North Bristol Trust resuscitation decision tree to help guide staff of when to discuss and the approach to take when raising the issue of DNACPR, this decision tree is modelled on the NHS Scotland DNACPR decision tree.[5]

See supplementary file: ds5875.pdf - "Framework for Cardiopulmonary Resuscitation (CPR) Decisions "

## Baseline measurement

Baseline measurements were collected from all vascular patients on the vascular surgery unit. The North Bristol Somerset and Gloucester DNAR decision tree,[2] was the tool used to decide whether the patient should have a documented discussion and/or a DNACPR form completed. We correlated the outcome of the

decision tree with the presence of a DNACPR form or documented resuscitation discussion. This gave us a resulting percentage of patients on the ward with DNACPR status consistent with the decision tree outcome.

Our initial data collection (n = 26) showed that only 27% of the sample had a DNACPR form or documented discussion in concordance with the DNACPR Decision Tree outcome.

## Design

Using the PDSA (plan, do, study, act) model for improvement we developed a strategy of how we would bring about change. The time frame for each cycle was approximately three weeks.

The first PDSA cycle was to incorporate a resuscitation status column into the doctors handover sheet. This includes whether the decision needed to be discussed with the patient, if this was suggested by the DNACPR decision framework.

This intervention is sustainable as it will continue regardless of junior rotation, and uses a current constantly updated resource. This also prompts the junior doctor to consider the resuscitation status of the patient when inputting a new patient to the list.

We repeated the data collection after each PDSA cycle to determine the effect of each intervention.

## Strategy

We conducted a total of three PDSA cycles. Each intervention (or PDSA cycle) was conducted with an interval of approximately three weeks. We repeated data collection from all vascular patients on the vascular ward after each intervention, prior to beginning the next cycle.

PDSA cycle 1 intervention:

Incorporating a resuscitation status column on the doctors handover sheet. The aim of this was to try and optimise communication across the multidisciplinary team (MDT) surrounding resuscitation, despite a weekly changing team of junior doctors. Furthermore, it was used to highlight when it had not yet been discussed and therefore act as a prompt that this was required.

PDSA cycle 2 intervention:

Posters around the vascular ward in staff-only areas to raise awareness of the meaning of DNACPR and to highlight the DNACPR decision tree and when DNACPR should be discussed.

PDSA cycle 3 intervention:

Educational meeting with the vascular surgery consultants with teaching surrounding CPR and DNAR decisions, this was delivered by a consultant care of the elderly physician.

## Post-measurement

At Baseline, concordance of patient notes including documented discussion and/or DNAR form with the DNACPR decision framework outcome was 27% (7/26).

After PDSA cycle 1: n = 20, concordance 35% (7/20)

After PDSA cycle 2: n = 25, concordance 52% (13/25)

After PDSA cycle 3: n = 23, concordance 61% (14/23)

At baseline only 27% of patients had a resuscitation status or evidence of discussion consistent with the DNAR decision framework guidelines from NHS Scotland.

By PDSA cycle 3, 61% of patients resuscitation status or discussion matched the decision framework outcome, bringing about an percentage increase of 127% from baseline.

See supplementary file: ds6893.pdf - "Infograph PDSA Cycle Results"

## Lessons and limitations

Data was collected approximately three weeks after the initiation of each intervention, prior to the next intervention being conducted. With each consecutive intervention there was an increase in the proportion of patients whose DNAR status or documented discussion was consistent with that of the decision tree. At face value, the intervention that produced the greatest increase in concordance were the posters in staff areas. This generated an increase in concordance of 17%, compared to the DNAR column in the handover sheet and education meeting producing increases of 8 and 9% respectively. However, it seems likely that the magnitude of this increase is at least partially attributed to the cumulative effect of the previous intervention and word of mouth spreading information about the project.

The results of this study and the impact of each individual intervention may have been confounded by the Hawthorne Effect (altered behaviour due to the participants awareness of being observed).[6] In the future this effect could be used to its advantage, if subsequent junior doctors were to continue intermittent data collection there would be ongoing awareness that concordance of DNAR discussion/form with the decision tree was being measured, which would hopefully mean that current performance would be maintained or improved upon.

We would hypothesise that the educational meeting with the vascular consultants taught by a care of the elderly consultant, will have the greatest long term impact. This is because junior doctors rotate and ultimately it is the consultants who are able to continue to emphasise the importance of discussing resuscitation status with future junior doctors on rotation.

Overall, it is felt that raising awareness of the importance of DNAR

discussions through both audio (educational meeting) and visual (handover sheet prompts, poster) means has resulted in increased concordance between patients DNAR status or discussion, and the decision tree. It seems doubtful that one intervention alone would bring about lasting change as no one intervention targeted all members of the MDT. Although, this is not something we would know for certain as we conducted the interventions back to back at approximately three week intervals.

We have been extremely grateful for the support from the vascular surgery consultants in conducting this project. We received positive feedback from a number of consultants following the educational meeting about DNACPR, delivered by a care of the elderly consultant. Junior staff report that being aware that their consultants supported the discussion of resuscitation status empowered them to raise the issue as a team more regularly.

As has been suggested, a limitation with this project is that the junior doctors and consultants (with a consultant of the week rota pattern) rotate around regularly. Therefore, the issue of the need to consider resuscitation status in all patients needs to be highlighted with each new rotation. Our interventions address this to some degree by ensuring the resuscitation status of each patient is on the daily handover. Furthermore, information regarding this project and the importance of considering resuscitation status is now included in the vascular surgery information handover document given to all new doctors beginning the job.

## Conclusion

This project has highlighted that simply raising awareness of DNACPR to members of the MDT, including all grades of doctors, increases the number of patients who have their resuscitation status considered and discussed amongst the team. As such, this increases the proportion of patients who have a documented discussion or DNACPR order consistent with that of the local guideline DNACPR decision tree. Multiple interventions were used to inform various members of the MDT and subsequently bring about this change.

The ongoing success of this project relies upon members of the team continuing to raise awareness about DNACPR and continued data collection to ensure this is happening.

The project is being carried forward by the new junior doctors on the vascular surgery team with the aim of spreading this intervention across other surgical specialities. Other areas for progression include a new surgical proforma which will contain DNAR status in the post take ward round. In addition there is a newly appointed care of the elderly consultant who will help with patients with multiple co-morbidities whose medical management is complex, and can provide the surgical team with assistance and advice regarding resuscitation decisions and discussions.

## References

1 R (On behalf of David Tracey personally and on behalf of the

Estate of Janet Tracey (Deceased) v (1) Cambridge University Hospitals NHS Foundation Trust (2) Secretary of State for Health; 2014 EWCA Civ 822:54.

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3 British Medical Association. Decisions relating to cardiopulmonary resuscitation. Guidance from the British Medical Association, the Resuscitation Council (UK) and the Royal College of Nursing. London: BMA; 2014.

4 General Medical Council. Treatment and care towards the end of life: good practice in decision making. London:GMC; 2010. 23 p.

5 Scottish Executive Health Department. Resuscitation policy (HDL (2000) 22). Edinburgh: Scottish Executive; 2000.NHS Scotland. Do Not Attempt Cardiopulmonary Resuscitation (DNACPR) Integrated Adult Policy. Edinburgh:Scottish Government; 2010. Available from: [www.scotland.gov.uk/Resource/Doc/312784/0098903.pdf](http://www.scotland.gov.uk/Resource/Doc/312784/0098903.pdf)

6 Haessler S. The Hawthorne effect in measurements of hand hygiene compliance: a definite problem, but also an opportunity. BMJ Qual Saf. 2014;23:965–7.

## Declaration of interests

Nothing to declare.

## Acknowledgements

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## Ethical approval

Project proposal reviewed by North Bristol Quality Improvement Team. It was determined this project was exempt from ethics approval, as it was felt to be a quality improvement study.

# Framework for Cardiopulmonary Resuscitation (CPR) Decisions





