

Can nursing care decrease death & dependency? Final results of the Quality in Acute Stroke Care (QASC) Trial

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Background: The Quality in Acute Stroke Trial (QASC), a single blind cluster randomized controlled trial of a multidisciplinary implementation intervention, targeted clinicians' evidence-based management of fever, hyperglycaemia and swallowing dysfunction following acute stroke.

Methods: 19 NSW acute stroke units (ASUs) were randomised to the intervention (n=10) or control (n=9) group. The intervention consisted of evidence-based treatment protocols to manage fever, hyperglycaemia and swallowing dysfunction, multidisciplinary team building workshops, staff education and local ASU coordinator engagement. The control group ASUs received an abridged copy of the Australian acute stroke guidelines relevant to the management of fever, hyperglycaemia and swallowing. Patient outcome data were obtained via computerized assisted telephone interviews 90-days post-admission. Intention-to-treat analyses were undertaken adjusting for baseline data and clustering.

Results: A total of 1699 patients participated (690 pre-intervention; 1009 post-intervention). Patients from intervention ASUs were significantly less likely to be dead or dependent at 90-days (42% vs 58%) ($p=0.002$) than patients from control ASUs with improved SF-36 mean physical health scores (45.6 vs 42.5, $p=0.002$), irrespective of stroke severity. Our intervention resulted in significant reductions in: mean temperature reading ($p=0.001$); number of febrile ($>37.5^{\circ}\text{C}$) patients ($p<0.001$); mean blood glucose ($p=0.02$); and improved swallowing screening within 24 hours of admission ($p<0.001$).

Conclusion: Patients who received care in ASUs delivering the multidisciplinary intervention demonstrated an absolute reduction for 90-day death or dependency of 16%. This effect is larger than any drug or organisational treatment of proven effectiveness for stroke. This finding is of international significance, made all the more compelling in that it resulted from teamwork and evidence-based nursing care.