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INCONTINENCE STROKE PROJECT INSPIRING REHABILITATION EXCELLENCE (INSPIRE) -A MIXED METHODS APPROACH TO PILOTING A COMPLEX INTERVENTION TO IMPROVE CONTINENCE CARE FOLLOWING STROKE

Hypothesis / aims of study

Although urinary incontinence (UI - any involuntary leakage of urine) affects up to 60% of stroke survivors, the evidence upon which to base UI interventions in stroke care settings is alarmingly inadequate (1). INSPIRE aimed to develop and evaluate the implementation of a complex, stroke-specific, UI intervention within a stroke care setting.

Study design, materials methods

Working with a multidisciplinary Advisory Group we developed and evaluated the implementation of a complex intervention for the screening, assessment and management of post-stroke UI which targeted three levels of care (service, staff and patient levels of care) in a mixed (acute and rehabilitation) stroke ward.

Intervention

(a) Service Level - Using the National Sentinel Stroke Audit Tool and our INSPIRE standards for UI support after stroke, deficient aspects of care were identified and improved upon.
(b) Staff Level – The multidisciplinary stroke team were invited to attend a two hour INSPIRE continence training session. The training provided an overview of stroke related continence issues, as well as guidance on the use of the INSPIRE screening, assessment and protocol tools. Practical learning was applied within sessions (e.g. Frequency Volume Charts, catheter valves). Access to equipment and products for the management and containment of UI was also considered.
(c) Patient Level - consistent screening procedures, individualised assessment and management plans, documentation of UI screening, assessment and management plans which would in turn result in better continence care.

Participants

Reflecting the complexity of this intervention, nursing staff (registered nurses and clinical support workers) were both participants and were responsible for delivery of part of the intervention. Patients who were consecutive admissions to the pilot stroke ward were approached to participate in the study. People with mild-moderate language impairment (aphasia) after stroke were given adapted versions of the consent and information sheets. Those unable to consent (incapacitated because of severe communication or cognitive impairment) were recruited via their informal carer or welfare guardian. We could think of no relevant reasons to exclude patients from participating.

Data collection

(a) Service Level - National Sentinel Stroke Audit Tool and our INSPIRE standards for UI support, Saxer's Continence Knowledge and Practice Instrument.
(b) Staff Level - Nursing staff screened all patients for UI upon admission. Where continence problems were identified staff conducted a full INSPIRE assessment.
(c) Patient level - Modified Rankin Scale and the Barthel Index, the presence and type of continence symptoms were recorded, International Consultation on Incontinence Questionnaire (ICIQ-UI short form), the Urogenital Distress Inventory (UDI-6), the Incontinence Impact Questionnaire (IIQ-7), and the Incontinence Severity Index. We also collected patients' and staff views on their involvement in the INSPIRE study using semi-structure interviews.

Results

Thirty patients (mean age 68 (SD 14) years) with a mean hospital stay of 18 days (SD 17) were recruited. Twenty-two people had continence problems.
(a) Service Level – INSPIRE targeted the availability of specialist products, equipment and support (including UI screening, assessment and management tools). As a result of INSPIRE, the range of continence containment products was reviewed and a medium size containment product was subsequently included in the standard procurement list. We established the nature of local referral pathways between the ward and specialist support (e.g. district nurse and continence specialists) and access to specialist equipment (e.g. bladder scanners) and ensured these were communicated to ward staff.
(b) Staff Level – All 33 nursing and allied health professional members of the multidisciplinary stroke team received continence training. Medical team members chose not to attend. Training had a positive impact on nursing staff knowledge – n=24; mean improved score +2 (95% CI: 1.0, 3.2 t=4.041, df=23, p=0.001). Scores improved across all sections. During the interviews staff reinforced these findings. Staff were also observed to act upon their newly acquired knowledge. They initiated a discussion with staff from Emergency Admissions and A&E settings to explore alternative methods of continence care, resulting in a reduction in the number of catheterisations amongst stroke patients admitted from these settings.
(c) Patient level - Staff screened patients daily for UI throughout patients' hospital stay. A total of up to 174 screening procedures were completed. Most (n=137; 79%) resulted in the required documented outcome of 'continent' or 'incontinent' (Table 1). Patients with moderate to severe communication problems however, were less likely to be screened by staff (80% of unscreened group were people with severe communication problems compared to 65% of screened group) as were those with cognitive problems (80% of unscreened group were people with communication or cognitive impairment compared to 65% and 45% of screened group respectively) (Table 2). We also observed that 70% of patients had documented continence care plans, a considerable improvement on national levels reported to date (2).

Table 1: Continence screening (Wk = week; Mth = month)

Continence Screening	Wk 1	Wk2	Wk3	Wk4	Mth2
Expected (24hrly completion)	182	82	63	42	30
Completed					
with documented outcome	50	36	21	10	20
with no documented outcome	8	16	7	5	1
% completed	**32**	**63**	**44**	**36**	**70**

Table 2: Continence screening week 1- patients with communication or cognitive impairment

Communication Problems	**Screened n=20**	**Unscreened n=10**	**Cognitive Status**	**Screened n=20**	**Unscreened n=10**
Mild	4	1	Confused	3	4
Moderate	7	5	Disorientated	4	1
Severe/Global	6	3	Drowsy	2	2
None	3	1	Fluctuating consciousness	0	1
			Full awareness	11	2

Interpretation of results

Our pilot demonstrated the implementation, feasibility and necessity of a complex multi-level intervention to address UI after stroke. Improved staff knowledge scores were encouraging, given the small sample size. Increased UI screening and care plan documentation rates are welcome, but still short of ideal. The difference in screening for UI between patients with communication or cognitive impairment and those without is cause for concern. Adapted tools and procedures are required to ensure inclusion of these often excluded patient groups.

Concluding message

Our pilot demonstrated the feasibility of the highly complex INSPIRE intervention in an in-patient stroke population. The effectiveness of this intervention now needs to be examined within a randomised controlled trial design.

References

1. Thomas LH, French B, Watkins C, Leathley M, Sutton C, Cross S, Barrett J (2008) Treating urinary incontinence in post stroke adults. Continence UK 2 (3), 43-48
2. National Sentinel Stroke Audit Phase II (clinical audit 2008) (2009) Report for England, Wales and Northern Ireland. Prepared on behalf of the Intercollegiate Stroke Working Party by Clinical Effectiveness and Evaluation Unit. Royal College of Physicians of London April

Specify source of funding or grant	**Chest, Heart and Stroke Scotland - NEW GENERATION OF STROKE REHABILITATION TRIALS**
Is this a clinical trial?	**No**
What were the subjects in the study?	**HUMAN**
Was this study approved by an ethics committee?	**Yes**
Specify Name of Ethics Committee	**Scotland A Research Ethics Committee (followed by local NHS Lanarkshire Ethics Committee approval).**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**