NSW HEALTH

2007 NSW Health Awards Entry

Entry Title (50 characters or less)

Advanced liver disease: A new system for supporting patients

Abstract (120 Words)

Chronic liver disease is a common clinical scenario world-wide. The burden of illness from chronic liver disease will increase markedly over the next few decades due predominantly to alcohol and hepatitis C. Excessive alcohol consumption is associated with a variety of adverse health consequences including cirrhosis of the liver. In Australia, alcohol is second only to tobacco as a cause of preventable morbidity and mortality. (1) Once end stage disease develops patients can consume considerable health resources. In 2004 a Gastroenterology Liaison Nurse Service was established to co-ordinate the management of patients with chronic gastrointestinal disease and in 2006 we evaluated the cost effectiveness and patient acceptability of the service to patients with resistant ascites (accumulation of fluid in the abdomen due to liver failure). The Gastro Liaison Nurse service had resulted in fewer unplanned admissions, fewer emergency department presentations, reduced length of stay and decreased associated costs with high patient acceptability.

Aim (30 Words)

To assess whether a Gastro Liaison Nurse service was acceptable to patients with decompensated liver disease and whether the service improved the cost effectiveness of management of their resistant ascites.

Nature of the Problem (100 words)

Once end stage liver disease develops patients accumulate abdominal fluid that is resistant to drug therapy and requires recurrent draining. Untreated, patients risk infection and poor quality of life. Prior to our intervention because of difficulty accessing their General Practitioner or an outpatient appointment patients often only presented when distressed with litres of fluid overloaded. This resulted in prolonged hospitalisation often via Emergency Department with considerable associated costs from inefficient resource use. We believed that a system to monitor patients' weight would enable need for hospitalisation to be anticipated and fast tracked to direct ward admission and treatment with supporting investigations done prior to admission.

Extent of the problem (150 words)

Alcohol dependence and harmful use was ranked 17th in the leading causes of burden of disease and injury for Australia in 2003.(2) We reviewed the data and found that at risk alcohol drinking affects 37.2 % of men and 27.3% of women in NSW and in the Hunter New England Health region, 700/100,000 separations for males and 350/100,000 separations for females were due to alcohol related disease.(3,4) The proportion of people drinking at a risky/high risk level has increased from 8.2% (1995) to 10.8% in 2001 and 13.4% in 2004-2005 (table 1).The largest number of alcohol related hospital separations were due to alcoholism and alcoholic liver cirrhosis, 31,132 deaths from disease and injury caused by alcohol 1992 and 2001 in Australia. From 1993-94 to 2000-2001, there were over 500,000 hospitalisations due to high-risk drinking in Australia.(2) We were aware that a proportion of our patients were being recurrently admitted for drainage of ascites. We formally assessed the size of the problem and the patients' views in a review in 2006 of the first 10 patients introduced to the new service. The results are shown in table 3, 4 and 5 which shows the number of hospital admissions (table 3), the type of admissions and length of stay (table 4), and the number and cost of pathology tests (table 6) in six months before the service was introduced and compares the results with first six months of the new system (see attachment 1).

Strategic importance (100 words)

The Hunter New England Annual Operational Report 2006-2007 has as focus areas in its balanced score card on resource accountability including effective management of resources; internal networking and processes; person-centred care and continuous service review; health promotion and empowering communities in relation to health.(4) We believe our service redesign has addressed particularly these areas.
NSW Health in its Future Directions for Health also emphasises fiscal responsibility, service redesign and creating better experience for people using health services all of which are addressed by our initiative. (5)
Hepatitis C is on the national agenda. Our service is amenable to the management of all patients with liver failure.

Planning and implementing solutions (300 words)

The chronic liver disease monitoring program was established at John Hunter Hospital in 2004. The details of the overall Gastro Liaison Nurse service have been previously described (Hunter New England Health Maggie Award winning entry, 2005) In brief, two experienced gastroenterology nurses shared a position based on the gastroenterology ward and supported by a multi-disciplinary team. On discharge or on outpatient review patients with chronic disease needing ongoing care, were informed of the service, introduced to a Gastro Liaison Nurse and given a simple business card with the contact details of the Gastro Liaison Nurse. The Gastroenterology Liaison Nurse's key responsibilities were:

a) To be available by phone for information, advice and assistance when patients were aware that their disease had deteriorated, were confused about their disease or medications or needed care team assistance.
b) To communicate to General Practitioners, consultants and the healthcare team members management problems and promote appropriate intervention including appropriate advice and therapy.
c) To organise blood tests in the community to monitor deterioration.
d) To arrange admission, transfusion, tap or other disease management when needed.
e) To help patients gain access to outpatient review when needed not according waiting lists.

Patients with Chronis liver disease were identified when they were admitted for drainage and approached by their gastroenterologist Anne Duggan or a Gastro Liaison Nurse. Patients who consented to participate were asked to monitor their weight daily after discharge and to contact the Gastro Liaison Nurse weekly by phone. They could also contact the nurses directly if they had concerns and would be contacted if they didn't ring in weekly. Patients recorded their weight on a specially designed form which had their ideal weight recorded for reference. When patients exceeded their ideal weight by five or more kilos a planned admission to hospital was organised for drainage as a day only patient with relevant pathology tests ordered prior to admission. We assessed the impact of the program on total admissions, length of stay, and utilisation of pathology requests over a six month period. We surveyed the patients for their feedback.
The project was a collaborative efforts of medical and nursing staff with key involvement from the patients and their carers and family. Management supported the service and patients' General Practitioners were over time familiarised with the service offered.

Outcomes and Evaluation (200 words)

In 2006 we retrospectively compared the management six months pre and post the program for 10 consecutively enrolled patients. Data was extracted on the number of admissions, number of unplanned admissions, admissions via the Emergency Department and length of stay as well as the number of ascitic taps and frequently ordered pathology tests such as full blood count, electrolytes/urea/creatinine and liver function tests. The results are shown in tables 1 to 4. The natural history of chronic liver disease is of gradual progression. It is likely that our patients deteriorated over the audit period. In spite of this there was a reduction in the number of unplanned admissions to hospital, and a decrease in the length of stay.

Table 1: Demographic Data

Demographic Data	**n=10**
Mean Age (Range)	54.5 (45-71)
Gender (M: F)	8 : 2
Mean time in program in months (range)	12 (7-20)
Alive at end of program (total)	9 (10)

Table 2: Hospital Admissions

Patient ID	**Pre-program admission**	**On-program admission**
1	1	1
2	2	8
3	3	0
4	0	3
5	1	0
6	1	0
7	1	0
8	2	2
9	1	0
10	1	0
Total	13	14
Total excluding patient No.2	11	6

Table 3: Planned vs. ED Admissions and Average Length of Stay

	Pre-program	**On-program**
Percentage of admissions planned (no.)	46% (6/13)	71% (10/14)
Percentage of admission via ED (no.)	54% (7/13)	29% (4/14)
Length of stay in hospital (days)	6.54	4.25
Length of stay in ED (hours)	9	7.75

Data are given as number (percentage). Percentages may not add up to 100% due to rounding error

Table 4: Number of ascitic taps and common pathology tests including cost

	Pre-program (6months)	**On-program (6months)**
Number of ascitic taps	9	13
FBC	106	78
EUC	124	88
LFT	110	46
Cost of FBC/EUC/LFT (AUD)	$6805.42	$4218.02

We surveyed the 20 participants on the program in October 2005 (data not shown). The response rate was 50%. Patients reported that the most important factors that affected their willingness to participate were reduced frequency and duration of hospital admissions and better disease control. Most participants did not find phone-calls from Liaison Nurses to be intrusive, and many welcomed the notion of talking to health professionals about their disease on a regular basis and being able to ask questions.

Sustaining change (100 words)

The service continues in 2007 confirming its sustainability. Forty five patients with chronic liver disease and ascites have now been treated by the Gastro Liaison Nurse (20 since deceased). The formal assessment of the service now allows it to be evaluated by other gastroenterologists to assess the effectiveness and acceptability of service for their patients. Once aware of the results of the survey it will promote buy-in from Emergency Department and promote contact of new patients to the service and fast-tracking of patients needing treatment. An estimated cost of a non-insured patient gastro beds with basic ward cost and not including consultant cost is $450 per day. The system's cost effectiveness should promote ongoing funding of the service here and its consideration in other chronic disease contexts.

Future Scope (100 words)

This program empowers patients by educating them about their disease and giving them a key role in its management by monitoring their weight and initiating calls. The system's cost effectiveness and simplicity makes it readily transferable. Our experience is positive, and our qualitative data goes towards allaying fears that patients feel that regular phone calls and weighing is too intrusive. In short, our data indicates that liver disease monitoring programs are not only acceptable to liver patients, but may be viewed as an improved service redesign with wide applicability to similar chronic disease groups with monitoring needs.

References

Magnus Halland, Olivia Lawrence, Ainslee Daley, Mel Young and Anne Duggan:

1. New South Wales Population Health Survey 2005 (HOIST). Centre for epidemiology and Research, NSW Department of Health. Health behaviours. Alcohol.

2. Australian Bureau of Statistics. Alcohol consumption in Australia: A Snapshot, 2004-05. http://www.abs.gov.au/AUSSTATS/abs@.nsf/mf/4832.0.55.001/

3. The Health of People of NSW: Report of the Chief Health Officer 2005 http://www.health.nsw.gov.au/public-health/chorep/beh/beh_alc_age.htm

4. Health of the Hunter New England e-Resource, 2006 A report on the health of the Hunter New England population HNE Health related behaviours Deaths and illness attributable to alcohol http://www1.hnehealth.nsw.gov.au/hneph/HHNE2006/beh/beh_alcaf4.htm

5. HNE Health Balanced Scorecard http://asok.hahs.health.nsw.gov.au:7001/Portal/navigate.do?PortalPage=PortalPage%2Bomi%3A%2F%2FFoundation%2Freposname%3DFoundation%2FPSPortalPage%3Bid%3DA5HYRY3V.BB0007PT

6. NSW Health: Future Directions for Health in NSW- towards 2025. Fit for the Future. http://internal.health.nsw.gov.au/pubs/2007/pdf/future_directions.pdf