Innovative practice in the management of chronic Hepatitis C: introducing the nurse practitioner model

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KEY WORDS

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ABSTRACT

Chronic hepatitis C is a major health burden world wide. Only 1% of people with hepatitis C in Australia have access to treatment. This paper addresses the issue of motivating people with hepatitis C to seek treatment and the strategy of introducing the nurse practitioner role to effect this change.

Objective
To demonstrate that the introduction of a nurse practitioner service model is an effective and safe way of increasing access to treatment for people with chronic hepatitis C.

Setting
A multidisciplinary liver service at Royal Perth Hospital, a tertiary referral centre in Perth, Western Australia.

Subjects
People with chronic hepatitis C managed in a state wide chronic hepatitis C service.

Primary Argument
To make any impact on controlling the hepatitis C epidemic in Australia, the number of people in treatment will have to triple annually. Improved access to treatment includes the removal of mandatory liver biopsy as a requirement to treatment and an increase in the accessibility and availability of effective medicines. Nurse practitioners can function independently within clinical protocols approved by the designated service and the Director General of Health. The scope of practice of nurse practitioners includes the legislated right to prescribe specific medications and initiate diagnostic investigations as specified in clinical protocols. The hepatology nurse practitioner works in collaboration with medical practitioners, co-ordinates the treatment of patients with chronic hepatitis C, and helps to facilitate interdisciplinary referrals within the multidisciplinary team.

Conclusion
The introduction of the nurse practitioner model with the ability to prescribe specific medicines and initiate diagnostic investigations within approved clinical protocols can facilitate improved access to hepatitis C treatment programs. It is expected that the nurse practitioner's expert knowledge and skill and the application of evidence based practice in the hepatitis specialty will assist in the provision of a safe, competent and high quality standard of care to patients.

INTRODUCTION

It is estimated that 130 million people worldwide are affected by hepatitis C (HCV), resulting in 1.4 million deaths annually (Alter 2006; Marcellin et al 2002; Lauer and Walker 2001). Hepatitis C has become the single most important cause of liver disease in many countries, including the United States, Europe and Australia and is the most frequent reason for liver transplantation in these countries. About 75-80% of people infected with hepatitis C will develop chronic infection and about 10-15% will develop cirrhosis over 15-20 years (Poynard et al 2003; Alter 2002; Gane 2002; Poynard et al 1997). In an effort to increase access to treatment for people with hepatitis C, the role of the nurse practitioner has been introduced in the Liver Service at Royal Perth hospital. This paper discusses the role of the hepatology nurse practitioner can improve access to treatment for people with chronic hepatitis C.

Hepatitis C in Australia

Hepatitis C is a significant public health issue for Australia with around 1% of the community affected. Hepatitis C is one of the most commonly reported notifiable infectious diseases in Australia and the most common reason for Australians to need liver transplants (Australian Government 2005). In 2006, the prevalence of chronic hepatitis C in Australia was estimated to be 271,000 (NCHECR 2007). Of these:

- 68,500 had been exposed to the hepatitis C virus but not chronically infected,
- 157,000 had chronic hepatitis C with stage F0/1 liver disease,
- 40,000 had chronic hepatitis C with stage F2/3 liver disease,
- 5,400 had hepatitis C related cirrhosis,
- 216 had hepatitis C related liver failure, and
- 108 had hepatitis C related hepatocellular carcinoma (NCHECR 2007).

By 2020, projections of the number of people living with hepatitis C are likely to be between 321,000 and 836,000 (Australian Government 2005). In order to decrease the burden of this disease, the number of people receiving treatment for hepatitis C needs to triple (NCHECR 2006).

Effective treatments for hepatitis C are available and early implementation of therapy can prevent the complications of cirrhosis. Effective treatment with combination therapy of pegylated interferon and ribavirin can lead to a sustained virological response (SVR) of 50-80% depending on viral genotype and stage of fibrosis (Hadziyannis et al 2004; Fried et al 2002; McHutchison et al 2002; Manns et al 2001; Fried et al 2001). Despite the availability of treatment, it is estimated that only 1% of people with chronic hepatitis C in Australia are receiving treatment (Australian Government 2005). In Australia, liver biopsy had been a barrier to the uptake of treatment for hepatitis C due to its invasive nature and associated morbidity and rarely mortality. With the removal of mandatory liver biopsy as a prerequisite to treatment for hepatitis C, it is anticipated the number of people treated will increase.

It has been predicted that chronic hepatitis C will become a major burden on the health care system in Australia over the next 10-20 years (Laws et al 2003). In 2004-2005 the estimated prevalence cost of hepatitis C in Australia was $156 million. This was based on an estimated 211,105 persons living with hepatitis C. The estimated lifetime treatment cost per incident case was $13,845 undiscounted and $5,797 discounted at 5% per annum (Australian Government 2006).

Chronic Hepatitis C in Western Australia

In Western Australia (WA) there are about 20,000 people affected by HCV, with 1,200 new notifications of hepatitis C each year. The Sexual Health and Blood Borne Virus Program, in consultation with key stakeholders, developed a Hepatitis C Action Plan 2006-2008 (Western Australian Department of Health 2006). This plan details a state wide, comprehensive public health approach to the prevention of and improved access to treatment for hepatitis C. A state wide hepatitis C model of care that incorporates the nurse practitioner role is also being developed as part of the health reform process in WA.

Increase access to treatment

To reduce the impact on health costs in the future, access to treatment for people with chronic hepatitis C needs to be improved, and awareness increased to prevent new infections. Western Australia is the largest state in Australia with many small populations scattered across a vast geographical area. It will require a focussed strategy if access to treatment for patients in rural and remote areas is to be increased.

To date several strategies have been used to improve access to treatment. These include:

- An increased in the number of liver/hepatitis clinics in tertiary hospitals,
- The introduction of shared care programs between general practitioners (GP) and tertiary hospitals,
- The establishment of hepatitis C clinics in secondary hospitals, regional centres, private clinics and prisons, and
- A hepatitis C GP training program and accreditation for prescribing.

Although these strategies have met with some success, other issues such as: technological advances; the complexities in treatment programs (McHutchison et al 2002); and the significant rise in the number of hepatitis patients in Western Australia, prompted the Liver Service team at Royal Perth Hospital to review its practice in the management of client care. As part of this review, it was decided that the clinical nurse consultant (CNC) role needed to be expanded to that of nurse practitioner (NP). The nurse practitioner scope of practice has a legislative base which authorises the NP to order diagnostic tests, prescribe appropriate medicines and refer clients on to other health professionals.

Nurse practitioners

It was envisaged that the introduction of an NP model of care would provide increased opportunities to improve the disease treatment processes, target lifestyle factors associated with hepatitis C and increase the range of health settings for treatment and prevention of the disease.

To ensure the success of the hepatology nurse practitioner (HNP) role in the Liver Service at Royal Perth Hospital (RPH), the incumbent was expected to have postgraduate education and demonstrate competence to practice at a level commensurate with a nurse practitioner. In 2003, a postgraduate degree in Clinical Specialisation commenced at the School of Nursing and Midwifery, Curtin University of Technology, Perth, WA. This course was approved by the Nurses Board of Western Australia for authorisation as a NP. The NP course includes a clinical internship developed by the Liver Service specifically for the HNP. In 2004, the current HNP was awarded this degree in the clinical specialisation of hepatology and was registered by the NBWA as a nurse practitioner. The new title of HNP was the first of its kind in Australia.

Following amendments to various acts and regulations by the Western Australian Parliament and Department of Health, a legislative framework and a code of practice were produced which provided the foundation for the HNP's scope of practice. This scope of practice was subsequently approved by the Director of Nursing and Head of Liver Service at RPH. A key part of the legal framework is that the HNP must work within the approved clinical protocols that guide the HNP's scope of practice in the designated area of the Liver Service.

The expanded scope of practice for nurse practitioner includes:

- prescription of Schedule 1 and 4 medications (as defined in the clinical protocols);
- Performance of advanced physical assessment;
- Initiation of routine pathology and diagnostic tests; and
- Referrals to other members of the multidisciplinary team.

This expanded scope of nursing practice was recognised as an excellent way of enhancing the RPH Liver Service. HNP activities would include critical analysis, assessment, diagnosis, intervention, evaluation, rehabilitation care, counselling, education, clinical and professional leadership and health promotion. The role is seen as a combination

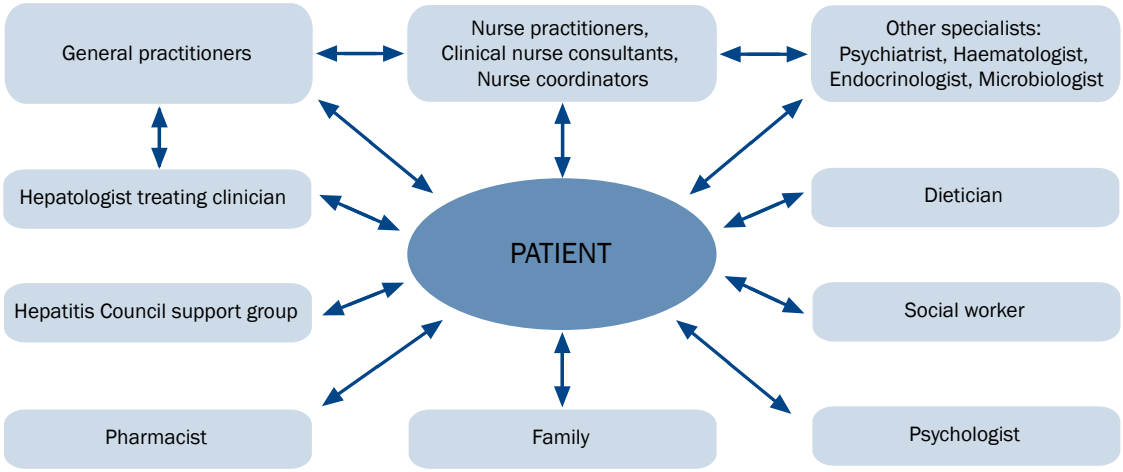
of expert clinical, managerial, educational, leadership and teamwork skills that focuses on the health care consumer (Australian Nursing and Midwifery Council 2006).

Client compliance to therapy has been shown to significantly improve the sustained response to antiviral therapy (McHutchison et al 1998), however side effects from the medicines often cause clients to discontinue therapy. The HNP's assessment skills and pharmacotherapeutic knowledge are of great value in identifying and providing early treatment for the side effects of the complex medicine regimes. Thus the HNP can potentially reduce a large number of visits to the medical practitioner for the assessment of these side effects.

Role of NP in multi-disciplinary team

Optimising the management of patients with chronic hepatitis C involves combining the most cost-effective drug treatment with the management of psychosocial aspects to achieve the best clinical outcome. A multidisciplinary team approach ensures maximal benefit to the patient with minimal disruption to their lives. The Liver Service multidisciplinary team consists of medical, nursing, paramedical and support staff. An effective team approach continues to develop and be maintained through open communication, mutual respect and a clear understanding of each member's role and responsibilities (figure 1).

Figure 1: Multi-disciplinary team in the management of chronic hepatitis C

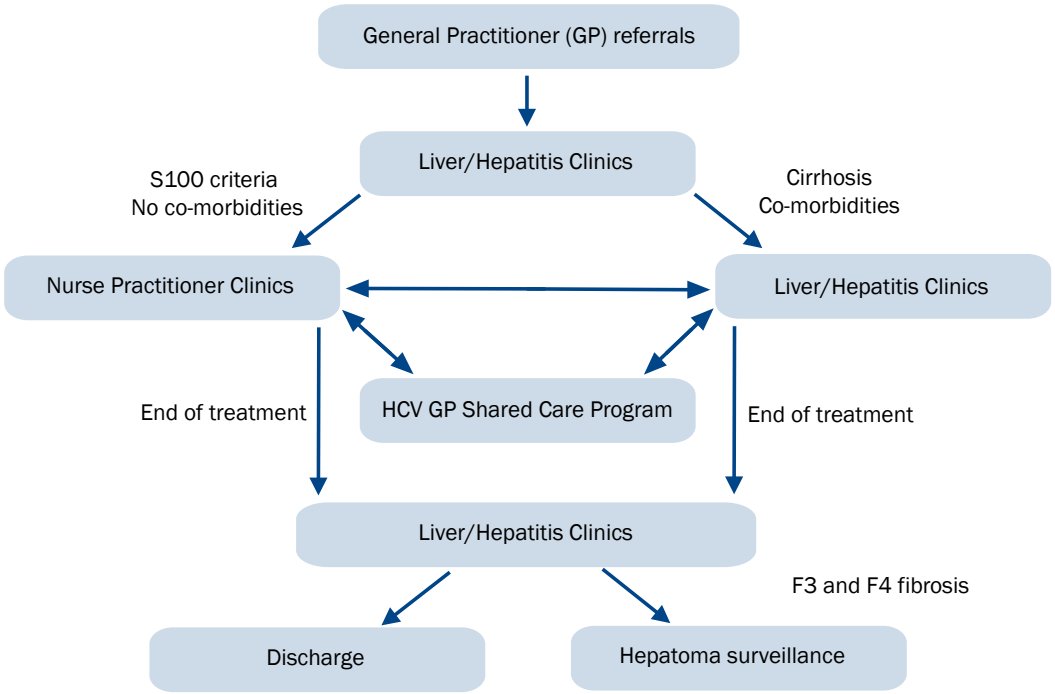


Collaboration between health professionals focuses on the interactions of individuals working together using their skills and knowledge to achieve a common goal. Collaboration between medical and nursing staff provides a more comprehensive and flexible service for patients than that provided by physicians alone (Flanagan 1998). It also increases access and positive outcomes through more frequent patient contact (Kearnes 1994). Medical practitioner and nurse practitioner collaboration necessitates professional, open communication and personal maturity. It involves mutual respect and recognition of individual skills, knowledge and scope of practice (Almost and Spence-Laschinger 2002; Smithson 1999). If trust and respect form part of the health professionals' working relationships then there will be open communication and shared decision making. Working collaboratively will ultimately translate to improved quality of patient care, quality of life and cost effectiveness of health care delivery (Neale 1999).

The HNP works within established clinical protocols and in collaboration with other members of the multidisciplinary team as part of service delivery. The HNP also facilitates the hepatitis C shared care program which was established to improve access to treatment for patients with hepatitis C, particularly those in rural and remote areas (figure 2). The hepatitis C shared care program is a collaborative

management plan between GPs and tertiary hospitals to ensure effective and safe management of patients undergoing combination therapy of pegylated interferon and ribavirin. The role of the HNP complements that of other health care professionals and is an integral part of the multidisciplinary health care provision. In a multidisciplinary approach to health care, each profession contributes a different variety of professional competencies and provides a continuation of care that the health care consumer expects (Almost and Spence-Laschinger 2002). The HNP is central to the coordination of members of the multidisciplinary team in facilitating the care and management of patients with chronic hepatitis C and ensuring compliance. This is possible as the HNP is able to order diagnostic tests, initiate direct referrals and treat people with hepatitis C sufferers to strict clinical protocols which have been formulated by the multidisciplinary team.

Figure 2: Nurse Practitioners' role in treatment of patients with chronic HCV



As the HNP has referral rights, it is expected that the improved referral process to other members of the multidisciplinary team will also improve collaboration, appropriateness and efficiency of care (Rolfe and Phillips 1997). The HNP provides a service that is timely and effective. Part of this service is the continuity of patient care, which means the HNP works collaboratively with other health professionals to achieve an optimum health care environment.

Role of NP in the community

Traditionally, hepatitis C treatment has been conducted 'behind closed doors' because of the stigma the community attaches to the disease. This has affected patient compliance and attendance at clinics in public places (Australian Government Department of Health and Ageing 2005).. To address this issue, the Liver Service at Royal Perth Hospital improved its consultation and care by expanding services into the community.

With the expansion into the community, the HNP has become a specialist referral resource and a central point for information and support. This role assists in reducing the number of clients seeking treatment in the acute health care system. It is also an expectation that nurse-client relationships will improve, as the nurse practitioner can have more contact through a

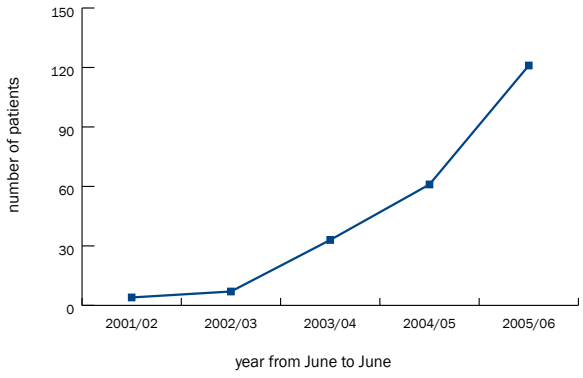
one-on-one relationship with the patient. Trust is a key factor in patient compliance and improved rapport between practitioner and patient could substantially improve treatment outcomes (Smith 1995).

As the HNP has expert knowledge and skills in hepatology, she provides leadership and mentoring to other nurses and health professionals in the community. The health service benefits from the education provided by the HNP to many professional fields, such as the general practitioner shared care program and remote area health care worker training.

Impact of nurse practitioner on management of Hepatitis C

The HNP position in the Liver Service at RPH was established in May 2005. This was the first nurse practitioner position at RPH and the first such position in hepatology in Australia. Autonomously conducted HNP clinics have increased the number of new patients accessing treatment from 60 to 120 per year since the designation of the HNP in the service, without change in the number of medical or nursing staffing levels (figure 3). A patient satisfaction survey conducted 13 months after the implementation of the HNP role was positive. More than 98% of the patients surveyed were satisfied with the quality of service provided by the HNP.

Figure 3: New hepatitis C cases in NP Clinics



Timely access for patients has led to a reduction in complications and in the number of visits to medical practitioners. Medical practitioners now have more time to concentrate on the more complex and complicated cases. The successful HNP model in Western Australia can be adopted in other states in Australia to facilitate the management of chronic hepatitis C.

CONCLUSION

The large number of people with existing chronic hepatitis who are not seeking treatment, compounded by the increasing number of new infections each year, means that hepatitis C will be a major public issue for the health care system in Australia.

The introduction of the HNP, with the ability to prescribe specific medicines and initiate investigations within approved clinical protocols can facilitate improved access to hepatitis C treatment programs. It is expected the HNP's expert knowledge and skill and the application of evidence based practice in the hepatitis specialty will assist in the provision of a safe, competent and high quality standard of care to patients.

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