

**CANADIAN ASSOCIATION OF HEPATOLOGY  
NURSES HEPATOCELLULAR CARCINOMA  
COMPETENCIES**

Approval Date: 25 February 2016

Review Date: February 2018

## **CAHN HCC Competencies**

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## **Canadian Association of Hepatology Nurses**

### **Hepatocellular Carcinoma Competencies**

The Canadian Association of Hepatology Nurses (CAHN) approved the Hepatology Nursing Standards in February 2007. The Standards provide a comprehensive framework for the evaluation of professional ethical hepatology nursing practice.

Subsequently, a CAHN working group began to develop competency documents that describe core competencies specific to particular liver diseases/conditions. This Hepatocellular Carcinoma Competencies (HCC) document is the third created. The hepatocellular carcinoma competencies pertain to adults and do not include specifics for pediatrics. Liver transplant, fibrolamellar, and cholangiocarcinoma will be referenced.

#### **Purpose**

The Canadian Association of Hepatology Nurses HCC Competencies document provides a mechanism for nurses to examine their practice, determine their learning needs and ultimately improve their knowledge, skill and judgment related to HCC care.

#### **Introduction**

Liver cancer is among the fastest rising cancers in Canada with HCC being the most predominant.<sup>1</sup> It is important to identify HCC in the early stage through regular screening. HCC can be curable if diagnosed early. The earlier the HCC is diagnosed the greater the number of treatment options available resulting in better outcomes.<sup>2</sup> HCC requires a multidisciplinary team approach where nurses play a vital role in the coordination and management of patient care.

The CAHN HCC Competencies document describes a full range of HCC nursing competencies without identifying educational preparation or specific experience needed for any of the competencies. The document articulates expectations that the regulatory bodies have for Registered Nurses involved in specialty areas of practice. This document can be used by nurses for ongoing self-assessments and by nurses preparing to transition to HCC practice, education, administration and/or research. These competencies are meant to assist nurses with identification of learning needs appropriate for their particular practice context.

Embedded in the competencies are the assumptions that nurses' advocate not only for the individual but also at the policy and/or systems level and that nurses engage in collaborative practice.

As this document reflects current knowledge, CAHN will review and revise it at least every three years. The next review will take place by January 2019.

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<sup>1</sup>Canadian Cancer Society

<sup>2</sup> South Australian Hepatocellular Carcinoma Pathway

## HCC Competency Statements

The competencies are presented within four sections: fundamental knowledge, nursing assessment, interventions and evaluation. Each section contains several competency statements with accompanying knowledge expectations. The nursing assessment section is framed within the twelve determinants of health.

### 1. Fundamental Knowledge Competencies

#### 1.1. Understand the epidemiology of Liver Cancer

- Prevalence and incidence
- Factors effecting demographics e.g., immigration, cultural, ethnicity, gender etc.
- Causes related to liver cancer
- Primary versus secondary liver cancer
- Different types of liver lesions
  - Malignant - HCC, cholangiocarcinoma, fibrolamellar, adenoma, hepatoblastoma, metastasis
  - Benign – hemangioma, cysts, focal nodular hyperplasia (FNH), regenerative nodules, granuloma, etc.

#### 1.2. Define the at-risk population for HCC

- Screening recommendations
- Surveillance guidelines e.g. AASLD, EASL, CASL

#### 1.3. Describe pathophysiology and natural history of HCC<sup>#</sup>

- Histopathology of liver lesions
- Survival rates at 1 year, 5 year
- Staging tools e.g. Barcelona Clinic Liver Cancer Staging System (BCLC)

### 2. Nursing Assessment Competencies

#### 2.1. Describe the importance of income and social status in HCC prevention, care and treatment.

- The role of income security e.g., employed, social assistance, retired
  - Higher socioeconomic status is an indicator of increased likelihood of receiving curative therapy.<sup>3</sup>
- Types of income assistance available
- The impact of barriers such as unsafe shelter, lack of nutrition and lack of affordable transportation on client health
- Strategies clients can use to access services such as addiction treatment programs, travel support, and nutrition supplements

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<sup>#</sup> As HCC is the most prevalent form of liver cancer it will be the primary focus of this document

<sup>3</sup> Jembre 2012

**2.2. Describe the importance and impact of the client's social support network for living with uncertainty**

- Quality of life
- Access and retention in care
- Emotional and practical (eg transportation to appointments) support from family and friends
- Fatigue of patients and their support
- Caregiver burnout
- Palliative care

**2.3. Explain how the client's level of education and literacy can impact health**

- Assess the client's understanding of information e.g., reading, writing, expression and comprehension
- Use of principles of adult learning e.g., language that is appropriate to the client's education, literacy level and ethno-cultural context
- Facilitate client access to information e.g., peer support groups, internet

**2.4. Explain the impact of employment/working conditions**

- Individual's rights to confidentiality
- Need to plan for periods of inability to work or modified work duties

**2.5. Understand the influence of social environments**

- Importance and impact of social support e.g., community groups
- Access to community resources
- Access to cancer support agencies e.g., volunteer drivers, peer support etc.
- Impact of stigma associated with underlying disease on health behavior and human rights
- Impact of media influence

**2.6. Understand the importance of physical environments**

- Community safety
- Importance of a safe home environment e.g., fall prevention, assistive devices
- Contribution of the physical environment e.g., air/ground/water quality and chemical/biological exposure

**2.7. Understand the importance of personal health practices and coping skills**

- Optimize liver health e.g., balanced nutrition, physical activity, alcohol and substance abstinence
- Choices can be affected by socio-economic environments e.g., self-care, advocacy and coping mechanisms
- Self-esteem, self-worth and resilience can affect health practices
- Use of complementary and alternative (CAM) medicine e.g., acupuncture, massage therapy, Chinese herbs, traditional indigenous practices

**2.8. Explain the importance of healthy child development**

- Experiences in early life that can affect lifestyle choices and behaviours in adulthood e.g., childhood obesity, physical abuse and family alcohol use

### **2.9. Describe the role of biology and genetic endowment**

- Role of genetics in the underlying disease
- Importance of taking a family history
- Identification of at-risk individuals or groups e.g., family screening

### **2.10. Describe the impact of health services on HCC**

- Importance of client self-advocacy
- Role of significant others in client advocacy
- Nurse's role in client advocacy
- Local referral and follow-up process for accessing HCC management
- Understand multimodality care options
- Effect of stigma and discrimination on service access and utilization
- Remote community health services

### **2.11. Understand the role of gender**

- Recognize gender differences in likelihood of diagnosis, natural history of disease and disease progression

### **2.12. Understand the impact of culture**

- Implications related to HCC e.g., alcohol as part of lifestyle, ethnicity
- Need to be culturally sensitive e.g., avoid actions that diminish, demean or disempower the cultural identity and well-being of an individual
- Spiritual and religious beliefs impact decisions e.g., traditional healing beliefs, Jehovah's Witness
- Impact of provider's values on relationships and client decision-making

## **3. A: Intervention Competencies (Client Focused)**

### **3.1 Describe health promotion activities associated with liver health**

- Ongoing surveillance for at risk populations
- Balance nutrition and exercise to maintain an ideal body weight
- Reinforce importance of low sodium and fluid restriction in patients with ascites
- Avoid alcohol, tobacco, illicit substances, solvents and chemical irritants
- Safer sex
- Medication reconciliation
- Immunizations to prevent co-morbid diseases e.g., hepatitis A/B, pneumovax, influenza

### **3.11. Understand harm reduction philosophy, strategies and their effectiveness**

- Harm reduction approaches and their effectiveness e.g., modify dietary, tobacco and substance use

### **3.12. Aware of commonly used complementary and alternative therapies**

- Use and effects of complementary and alternative medicines (CAM)

### **3.13. Explain what the nurse needs to know about HCC assessment**

- Importance of screening due to asymptomatic nature of early presentation
- Knowledge of patients' understanding of their diagnosis of HCC
- The impact of underlying disease and management
- Tests used to diagnose and monitor those with HCC e.g., dynamic imaging modalities, tumor markers, Child-Pugh, total tumor volume
- Clinical importance of the HCC scoring tools e.g., BCLC staging system
- Understand the importance of size and location of tumours
- Signs and symptoms of progression from compensated to decompensated liver function

### **3.14. Describe the management of disease progression of HCC**

- Signs and symptoms of progression e.g., jaundice, muscle wasting
- Screening, surveillance, medical and surgical interventions for complications e.g., worsening of portal hypertension,
- Nurse's role in monitoring interventions
- How and when to access additional services e.g., transplant or palliative care

### **3.15. Describe therapeutics and interventions for HCC**

- Treatment modalities are not mutually exclusive as more than one may be provided
- Curative therapies – transplantation, surgical resection\*, radiofrequency ablation\*
- Adjuvant therapies - alcohol injection, chemoembolization, theraspheres (Y90), radiation and multiple kinase inhibitor such as Nexavar (Sorafenib)
- Monitoring during or post treatment

## **B: Intervention Competencies (System Focused)**

### **3.16. Recognize methods to effect policy change**

- Advocacy role of non-profit/community organizations,
- Governments' role in health policy change e.g., resource allocation and access
- Nurses' role in advocating for health system change e.g., improved access for care and treatment, participation in advocacy organizations such as Canadian Association of Hepatology Nurses
- Nursing activities that can influence policy change e.g., participation in policy development and systems advocacy

### **3.17. Advocate for ongoing health care provider education and learning opportunities**

- Advocate for HCC education and learning opportunities
- Participate in professional development activities related to HCC

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\* Also used as adjuvant therapy

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### **3.18. Describe the importance of collaboration**

- Identify and collaborate with other providers and support systems e.g., tumor board, cancer care team, mental health and addictions services, community support groups
- Identify and participate in local, provincial, national and international health and social service initiatives

## **4. Evaluation Competencies**

### **4.11. Evaluate client responses, clinical outcome, cost effectiveness, and ethical considerations of interventions**

- Evaluate the effect of interventions and progress towards targeted outcomes
- Share and discuss outcomes with appropriate health care professionals e.g., tumor board, health authority administration

### **4.12. Participate in the discovery and the dissemination of new knowledge in HCC**

- Share leading practices/discoveries in your HCC practice
- Participate in research and/or disseminate findings e.g., journal club

### **4.13. Practice self-assessment**

- Evaluate continuing competency in HCC practice and knowledge

## Appendix A

### BCLC Staging System

Barcelona-Clinic Liver Cancer Staging system is a widely utilized and endorsed tool for staging liver cancer

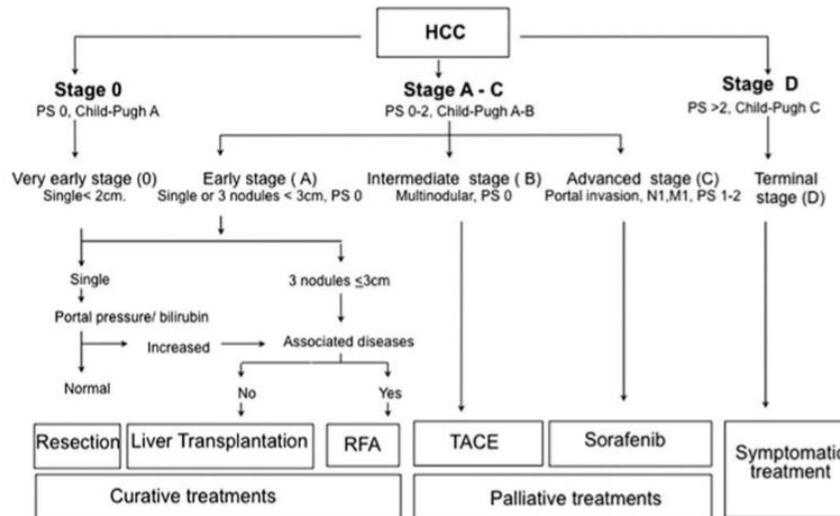


Fig. 2. The BCLC staging system for HCC. M, metastasis classification; N, node classification; PS, performance status; RFA, radiofrequency ablation; TACE, transarterial chemoembolization.

Accessed from: AASLD Practice Guidelines: Management of Hepatocellular Carcinoma

<http://www.aasld.org/publications/practice-guidelines-0>: Jan 16, 2016

## Appendix B

### Glossary of Terms

Adenocarcinoma- cancer that begins in the secretory cells<sup>4</sup>.

Adjuvant therapy- Additional cancer treatment given after the primary treatment to lower the risk of cancer recurrence <sup>4</sup>.

Alcohol ablation- injection of ethanol directly into the tumour resulting in cancer cell death. Also referred to as ethanol ablation, PEI and percutaneous ethanol injection<sup>4</sup>.

ALPPS- associating liver partition and portal vein ligation in staged hepatectomy. Treatment modality for metastatic colon cancer

Benign (non-malignant)- not cancerous<sup>4</sup>.

Chemoembolization- a procedure that blocks the blood supply to a tumour, after injecting chemotherapy into the blood vessels that access the tumour. Various delivery modes exist, eg Lipiodol, DC beads, hepaspheres. Also known as Transarterial Chemoembolization (TACE) <sup>4</sup>.

Child Pugh Turcotte Classification- is a scoring system to measure the severity of chronic liver disease. <sup>5</sup>

Cholangiocarcinoma (CCA)- rare cancer that begins in the cells that line the bile ducts. It can be intrahepatic or extrahepatic. A Klatskin tumour is a tumour that forms where the right and left bile ducts meet outside of the liver.<sup>4</sup>

Curative therapy- treatment modalities that can render a cure. Curative therapies for HCC are Liver Transplantation, Radiofrequency Ablation, Liver Resection.

Cysts- closed sac-like pocket of tissue that are benign. May be filled with air, fluid pus or other material. Can form anywhere in the body including the liver<sup>4</sup>.

Fibrolamellar Carcinoma- rare primary malignancy of the liver. It has been referred to as: eosinophilic hepatocellular carcinoma with lamellar fibrosis, polygonal cell hepatocellular carcinoma with fibrous stroma, hepatocellular carcinoma with increase stromal fibrosis, eosinophilic glassy cell hepatoma, fibrolamellar oncocytic hepatoma <sup>5</sup>.

Focal nodular hyperplasia (FNH)- benign liver lesion that has no malignant potential <sup>5</sup>.

Granuloma-localized nodular inflammation found in tissues<sup>5</sup>

Hemangioma- an abnormal buildup of blood vessels in the skin or internal organs.<sup>4</sup>

Hepatic Adenoma- benign tumour of epithelial origin. Adenomas have been associated with

use of estrogen. Over time adenomas may turn malignant<sup>8</sup>.

Hepatoblastoma- a type of liver tumour found in infants and children<sup>4</sup>.

Hepatocellular carcinoma- a type of adenocarcinoma. The most common liver tumour<sup>4</sup>.

LI-RADS (Liver Imaging Reporting and Data System)- a system for standardizing the performance and interpretation of CT and MRI for diagnosing HCC in at risk patients

Liver Transplantation- replacement of an individual (recipient) liver with a deceased or living donor liver. Transplantation is considered a cure for HCC when certain criteria are followed.

Multi-tyrosine kinase inhibitor- eg. Sorafenib(nexavar®)- an oral chemotherapeutic agent used to slow progression of liver cancer

Malignant- cancerous. Malignant cells can invade and destroy nearby tissue and spread to other parts of the body.<sup>4</sup>

Metastasis- the spread of cancer from one part of the body to another<sup>4</sup>

Radiation- energy released in the form of particle or electromagnetic waves<sup>4</sup>

Radiofrequency Ablation (RFA)- a procedure that uses radio waves to heat and destroy abnormal cells. The radio waves travel through electrodes (small devices that carry electricity).<sup>4</sup>

Regenerative nodules- a form of non-neoplastic nodules that arise in a cirrhotic liver.<sup>8</sup>

Surgical resection- removal of all or part of an organ

Theraspheres® (Y-90)- A type of radioembolization that is low toxicity and targets liver cancer. It uses millions of tiny glass microspheres which contain yttrium-90.<sup>6</sup>

Y90- refer to thearspheres-

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