



## Introduction

Chronic hepatitis B (CHB) is underdiagnosed and undertreated in the US (1) as well as in Australia (2). Estimates suggest that at least one third of ~170,000 infected people are unaware and <3% are currently being treated in Australia (2). Two key objectives of the first Australian National Hepatitis B Strategy are to “Reduce the proportion of people with CHB who have not been diagnosed”, and to “Improve the health and wellbeing of people with CHB...” (3). This can only be achieved if psycho-sociocultural aspects within affected populations are addressed. Many health promotion efforts fail because this is not adequately done. A literature review of hepatitis B health promotion targeted at Asian migrants shows that few testing campaigns involve collecting information other than demographics, screening rates and prevalence, and studies involving targeted interventions rarely report on psycho-social factors or a theoretical background.

## Health Promotion Theory

Applying behavioural theory helps to explain why health promotion campaigns work AND why they may not. For example, information on perceived threat and efficacy, or cues to action (4), may have explained why three quarters of susceptible people in the San Francisco HepB Free campaign failed to complete their course of HBV immunization (5). The constructs of perceived threat and efficacy are part of many traditional health promotion models. Psychological variables interact with cultural and other factors to influence people’s decisions to be either pro-active or reject a message. This part of my research is inspired by the work of Bastani and colleagues who use their Health Behaviour Framework (HBF) (6) for hepatitis B health promotion in Asian migrant communities. A new model was devised based on the HBF and the Extended Parallel Process Model (EPPM), which has also been successfully used in cancer prevention projects (7).

## The CIDAM (Chronic Infectious Diseases Action Model)

The CIDAM (Chronic Infectious Diseases Model, see *Figure 1*) combines components of the HBF and the EPPM with new elements to increase predictive power and enable balanced messages with a high probability of acceptance in the target populations.

From HBF:	From EPPM:	New elements:
<ul style="list-style-type: none"> <li>• Doctor variables</li> <li>• Cultural factors</li> <li>• Short-term / long-term behaviours</li> </ul>	<ul style="list-style-type: none"> <li>• Emotional factors</li> <li>• Critical point of fear (efficacy minus threat)</li> <li>• Danger and fear control processes</li> </ul>	<ul style="list-style-type: none"> <li>• Medical-social self-efficacy</li> <li>• Antenatal variables</li> <li>• Cues to action</li> </ul>

An example of a cue to action is receiving a recommendation from a doctor which consistently shows to be predictive of HBV screening (8). Medical-social self-efficacy explores doctor/patient communication issues (Caltabiano, unpublished). General practitioners are being surveyed as part of the overall project in order to create better connections between the target population and their doctors.

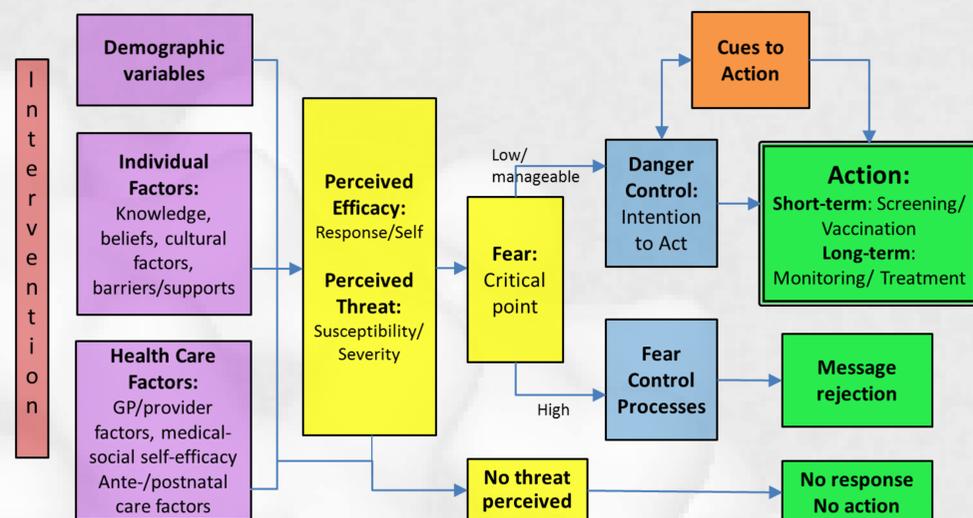


Figure 1. The new Chronic Infectious Diseases Action Model (CIDAM) combines components from the HBF (5) and EPPM (6), plus additional constructs, for use in future development of assessment tools and interventions. Examples of questionnaire items can be obtained from yvonne.drazic@my.jcu.edu.au

## Application

Hmong people are highly affected by CHB (prevalence ~15%) (9). The CIDAM is currently being applied in research with a Hmong migrant community in Far North Queensland, Australia. This involves:

- Construction and translation of an assessment tool (pre/post intervention)
- Intervention based on the results of the pre-intervention assessment
- Post-intervention assessment

## Implication

- Consistent use of the theoretical constructs of the CIDAM will
- improve assessment tools (e.g. before and after intervention)
  - create more effective health messages → increase screening, monitoring and treatment rates → prevent consequences of undetected CHB (cirrhosis, liver failure, liver cancer)
  - inspire more use of theoretical frameworks in future campaigns
  - help distinguish between successful and ineffective elements of a campaign
  - allow for accurate comparisons and evaluation
  - invite replication with different populations, including Aboriginal and Torres Strait Islander communities, as well as other chronic infectious diseases
  - improve health and wellbeing for people with a manageable chronic disease

## Acknowledgments

This project would not be possible without the continuous support of Dr. Benjamin Cowie, Ms Rhondda Lewis, my supervisors (co-authors above), and countless other people I can always count on when I need information or advice. Many thanks to all!



## References

1. Cohen C, Holmberg SD, McMahon BJ, Block JM, Brosgart CL, Gish RG, et al. Is chronic hepatitis B being undertreated in the United States? *J Viral Hepat.* 2011;18(6):377-83.
2. Carville KS, Cowie BC. Recognising the role of infection: Preventing liver cancer in special populations. *Cancer Forum.* 2012;36(1):23-6.
3. DoHA [Australian Government Department of Health and Ageing]. National Hepatitis B Strategy 2010 - 2013. Canberra: Author. 2010.
4. Rosenstock IM. Why people use health services. *Milbank Quarterly*, Wiley Online Library. 2005; 83(4):[1-32 pp.]. Available from: <http://www.milbank.org/quarterly/830417rosenstock.pdf> (Original work publ. 1966).
5. Bailey MB, Shiao R, Zola J, Fernyak SE, Fang T, So SKS, et al. San Francisco Hep B Free: A grassroots community coalition to prevent hepatitis B and liver cancer. *J Community Health.* 2011;1-14.
6. Bastani R, Glenn BA, Taylor VM, Chen Jr MS, Nguyen TT, Stewart SL, et al. Integrating theory into community interventions to reduce liver cancer disparities: The Health Behavior Framework. *Prev Med.* 2010;50(1-2):63-7.
7. Witte K, Meyer G, Martell D. Effective health risk messages: A step-by-step guide. Thousand Oaks, CA: Sage; 2001.
8. Nguyen T, Taylor V, Chen M, Bastani R, Maxwell A, McPhee S. Hepatitis B awareness, knowledge, and screening among Asian Americans. *J Cancer Educ.* 2007;22(4):266-72.
9. Kowdley K, Wang C, Welch S, Roberts H, Brosgart C. Prevalence of chronic hepatitis B among foreign-born persons living in the United States by country of origin. 2011 [cited Accepted preprint].

**Author contact details:** Yvonne Drazic, James Cook University, McGregor Rd, Smithfield, QLD 4878, Australia  
Ph (07)4057 5509 Mob 0437945001 Email yvonne.drazic@my.jcu.edu.au