

Introduction

Hepatitis B (HBV) is a life-threatening liver infection chronically infecting 257 million people worldwide. It causes up to 887,000 annual global deaths, and is the leading cause of primary liver cancer, the world's 2nd deadliest cancer. The World Health Organization has called for the elimination of HBV by 2030.

Approximately 40% of the world's chronically infected individuals live in China, where an estimated 00 million people are chronically infected, and where up to 500,000 people die annually from HBV-related complications; 55% of liver cancer deaths worldwide occur in China.

To improve health outcomes, we sought to increase uptake of appropriate medical care and promote healthy behaviors among chronically infected individuals in Haimen City, China.

Background

Haimen City is located in Jiangsu Province, approximately 60 miles northwest of Shanghai, with a total population of 1.03 million. Liver cancer has been the leading cause of cancer death in this population since 1970 (when death registration began). The incidence and mortality of liver cancer in Haimen City are among the highest in China, and in the world.



Figure 1. Haimen City, China

The "Gateway to Care" Campaign was launched in August 2010, in collaboration with the Haimen City Center for Disease Control and Prevention (HCCDC). The goals were to increase HBV screening, linkage to care, and sustainability of care/treatment. The program consisted of:

- A targeted citywide public health information campaign that reached over 280,000 households.
- Specialized health education and training for providers, which reached over 90% of all health care providers.
- Establishment of health care infrastructure and management systems for pregnant women.
- Increased screening, vaccination, and care management to key subpopulations (e.g. pregnant women and their infants and families), which screened over 15,000 residents and 5,400 pregnant women.

This patient empowerment program was a collaborative effort between the Hepatitis B Foundation and Haimen City Center for Disease Control and Prevention (HCCDC) in China. The program built on the success of the three-year citywide *Gateway to Care* campaign.

Using MAGIC For Patient Empowerment

program Goal: To empower chronically infected individuals to take an active role in managing their disease to improve their health outcomes.

program overview and activities:

- The program trained village doctors from 52 villages so that they could provide ongoing education, support and guidance to the 1,500 hepatitis B patients who were enrolled.
- Each participating village doctor recruited chronic hepatitis B patients who were identified through the Gateway to Care campaign, for participation in the program.
- Working together at monthly visits and support group sessions, the doctors helped the patients set goals for their chronic hepatitis B management; discuss healthy choices and behaviors to prevent disease progression; identify barriers to becoming more involved in their own healthcare; and implement strategies for overcoming barriers.

The program built on the strong existing relationships between village doctors and their communities. This has been an impactful strategy for smoking cessation and diabetes care.

We developed empowerment training manuals for the village doctors; educational materials for them to share with participants; self-manage goal sheets; pre-post surveys; health assessment tools; and participants progress diaries. The doctors and program participants used these materials throughout the program.

All participants completed a baseline medical evaluation and survey. Those with active liver disease were referred to the city hospital for evaluation by a liver specialist. Those without active liver disease were scheduled for six-month follow-up visits. A major goal of the empowerment program was to help patients understand the importance of regular medical check-ups, and motivate them to keep scheduled appointments. To do this, they needed to overcome barriers such as not having enough time for doctor visits due to work schedules, cost of antiviral treatment, not having enough knowledge about HBV progression and treatment options, and not having any symptoms. The sessions with the village doctors were geared towards overcoming these goals.

MAGIC - The *MAGIC* model was developed by Kaohsiung Medical University as a tool to improve diabetes care. The model outlines clear patient empowerment skills and behaviors, and helps improve evaluation of a program's overall impact.

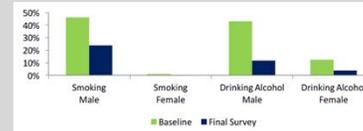
Figure 2. Components of *MAGIC* Model of Patient Empowerment.



Results

- 139 village doctors completed MAGIC training, and 1,392 individuals with chronic HBV were enrolled in the program.
- Village doctors completed at least 2 one-on-one MAGIC education and counseling sessions with each participant; as well as group sessions.
- All participants completed a baseline knowledge/attitudes/behavior survey, as well as a clinical exam; 87% completed a 12-month survey and clinical exam; 86% completed a 12-month survey and clinical exam.
- The check-up rate for participants increased from 58% to 87%.
- Overall, 153 patients became eligible for further medication evaluation (based on clinical results). Of these, 80% reported completing a doctor visit, 74% were recommended to begin treatment, and all but two (97%) successfully began HBV treatment. The two who did not start treatment listed high cost as a remaining barrier.
- There was a dramatic decrease in smoking and drinking alcohol, especially among infected men.

Figure 3. Change in liver-related health behaviors among program participants.



- At the end of 24-months, over 90% of participants felt it was important to receive regular check-ups for their HBV regardless of how they felt or how busy they were.
- There was a large increase in HBV-related knowledge - both among village doctors, as well as program participants.

Figure 4. Change in HBV knowledge among village doctors.

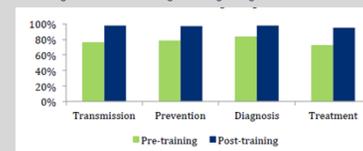
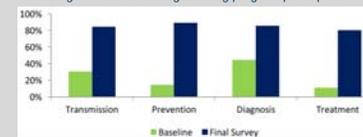


Figure 5. Change in HBV knowledge among program participants.



Results

Focus groups with the village doctors and participants found that:

- Continuing reasons for not seeking HBV-related medical care included cost of treatment; feeling healthy; and spending a lot of time for work out of town (not having time).
- Potential strategies to improve medical care uptake included offering flexible check-up times; sending reminders about medical visits; conducting more one-on-one education and consultation opportunities; and finding ways to make antiviral treatment more affordable.



Figures 6-7. Group *MAGIC* sessions with village doctors and program participants.



Conclusions

The two-year patient empowerment program had a substantial and meaningful impact on this cohort of chronic HBV infected residents in Haimen City, reflected by lifestyle changes, improvements in hepatitis B knowledge, and uptake of medical care.

Results of the program indicate that face-to face education and consultation services provided by village doctors provide effective support that chronic infected individuals and their families need.

The high cost of antiviral treatment is still a barrier to some, and it will be important to address this, especially for asymptomatic patients who need long-term treatment to prevent liver disease progression and liver cancer.

The Hepatitis B Foundation hopes to expand this innovative program and bring it to other highly impacted communities to help reduce the enormous morbidity and mortality from hepatitis B worldwide.

Acknowledgements

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