

# Effectiveness of an Online, Tailored CME Curriculum on Chronic Hepatitis B Virus Management

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# **BACKGROUND AND OBJECTIVES**

- Approximately 800,000 -1.4 million persons are estimated to have chronic hepatitis B viral (HBV) infection[1,2]
- Untreated HBV infection can lead to significant morbidity and mortality, including hepatocellular carcinoma (HCC) and liver failure
- Only 10%-15% of persons with chronic HCV infection are thought to receive treatment[3]
- The US Department of Health and Human Services has identified the need to "build a U.S. healthcare workforce prepared to prevent and diagnose viral hepatitis and provide care and treatment to infected persons" as one of the top priorities in its Action Plan for the Prevention, Care, & Treatment of Viral Hepatitis (Updated 2014-2016)[2]
- This study evaluated the effectiveness of an online, tailored (personalized) learning curriculum in improving healthcare providers' overall performance with respect to the evaluation and ongoing care of persons with chronic HBV
- This educational curriculum sought to
  - Improve provider ability to interpret laboratory tests and characterize HBV infection
  - Increase application of guideline-based recommendations for patient monitoring and treatment
  - Improve effective communication between patients and providers

# Figure 1. The Personalized Learning Pathway: A Targeted Approach to Education Self Assessment Personalized Activities Post-Assessment

PRACTICE GAPS

Interpretation of clinical and laboratory data

to inform clinical decision making

Application of guideline-recommendations

for patient evaluation, monitoring, and

treatment

Communication strategies to promote

patient engagement in care

# **METHODS**

# STUDY DESIGN: THE PERSONALIZED LEARNING (PL) MODEL

- Healthcare providers often participate in educational activities that reinforce what they already know versus those that address their true educational needs[4,5]
- Changes to practice are more likely to occur if learners evaluate their own practice and commit to change following participation in educational endeavors[6]
- Personalized Learning is a needs-driven educational solution that directs learners to educational programming based on their individual practice gaps (Figure 1)
- An online clinical practice self-assessment (SA) was used to identify individuals' gaps in knowledge, skills, or performance as they related to caring for patients with chronic HBV infection
  - The SA contained a series of case vignettes with 19 associated questions, and was pilot tested for clarity and accuracy
  - Each SA question was aligned to 1 of 3 practice gaps and 1 of 6, interactive,
     CME-certified multimedia educational modules (Figure 2)
  - A tailored communication and educational reinforcement plan ensured continued learner engagement throughout the program
- Each physician was directed to 1 or more relevant CME modules based on their individual educational needs identified through the SA
- The SA and all 6 CME modules were launched online simultaneously on June 26, 2012

### ASSESSMENT OF EDUCATIONAL EFFECTIVENESS

- Each CME module included post-assessment questions matched to questions from the SA
- Educational effectiveness was measured through statistical comparison between the SA and post-assessment responses
- The study population for this analysis was limited to:
  - Physicians who completed both SA and post-assessment questions
- Physicians indicating they cared for patients with chronic HBV
- IBM SPSS Statistics 20 was used for data extraction, transformation, and statistical analyses
- Data are presented in aggregate to maintain study participant confidentiality

#### Personalized Learning: Breaking Down the Barriers in Personalized Learning: Breaking Down the Barriers in Hepatitis B: Treatment and Retention in Care Hepatitis B: Treatment and Retention in Care WHAT IS PERSONALIZED LEARNING? Here is a customized list of recommended CME-certified activities, based on your self-assessment results Personalized Learning allows you to assess your knowledge and skills in a particular area that are essential to designed to help you improve your knowledge and skills related to patient care. delivering high-quality patient care and provides you with a customized plan for improvement Breaking Down the Barriers in Hepatitis B: Treatment and Retention in Care will help you assess and anaging HBV Infection: A Clinician's Handbook CME improve your knowledge and skills in the following clinical area nic HBV Infection: A Preventable and Treatable Public Health Crisis. · Use of clinical and laboratory data to inform clinical decision making Effective communication to facilitate patient adherence to treatment he Art of Communication: A Team Approach to Adherence in Patients th Chronic HBV Infection CME GET STARTED lonadherence to HBV treatment is a major cause of antiviral resistance, treatment failure, tart by completing the following baseline assessment. After you submit your responses, you will immediatel ceive a plan of CME-certified activities tailored to your needs to help you improve your knowledge and skills fter the Diagnosis: Next Steps in the Care of the Patient with Chronic Case #1: A 51-year-old Asian male software engineer presents to his primary care physician (PCP) for a Nancy Reau takes a case-based approach to evaluation and treatment of chronic HBV routine insurance physical examination required by his employers. He has no significant medical or family history of note. He is currently asymptomatic and does not take any regular prescription medications. Examination indicates a well-appearing man with BP of 120/70 mm Hg and BMI 24 kg/m2. His PCP notes that he emigrated to the United States from China at the age of 35 and requests hepatitis B serology and onic HBV and Pregnancy: Addressing the Needs of Mother and Child liver tests, results of which indicate that he is HBsAq positive, ALT 29 U/L, AST 20 U/L. Further serology and quantitative HBV DNA testing is requested and indicates HBV DNA < 100 copies/mL (below detection IBV screening is critical so that timely treatment of the pregnant woman and preventive HBeAg negative, and HBeAb positive. 1. How would you interpret these laboratory values? Care of the HBV/HIV Coinfected Patient: Management and Treatment CME Immune, recovering from past infection lelissa Osborne discusses evaluation and treatment of the patient with HBV/HIV Acute, resolving infection Chronic, active infection Chronic, inactive infection V Reactivation: What It Is, Why We Should Be Concerned, and What Case #1 cont: He returns to the clinic after 18 months after failing to keep scheduled follow-up appointments. He states that he has been busy at work, but otherwise remains asymptomatic. He is taking Perrillo discusses strategies to address HBV reactivation in immunocompromised nultivitamins and an herbal supplement obtained from his local health food store. Laboratory tests now

# RESULTS

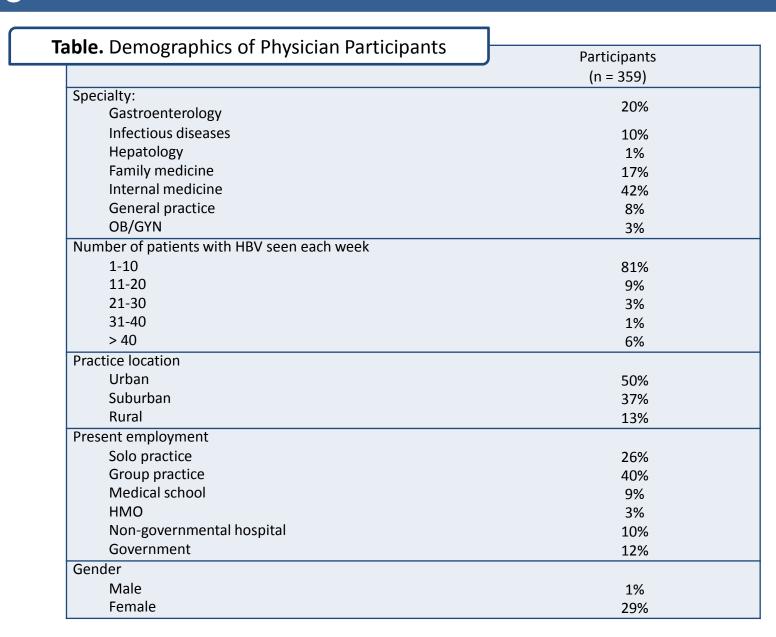
# **PROVIDER DEMOGRAPHICS**

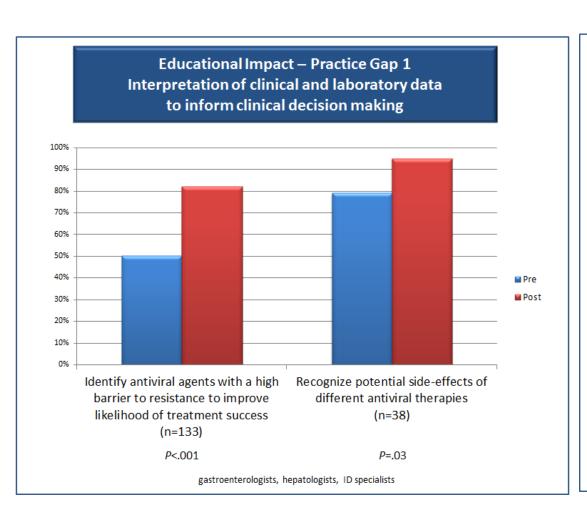
- To date, over 9000 healthcare providers have participated in the PL curriculum, including:
  - 887 gastroenterologists/hepatologists
  - 2869 PCPs
  - 473 infectious disease specialists
  - 685 nurse practitioners and physician assistants
  - 2454 nurses
- The 359 physicians who participated in the PL curriculum between June 26, 2012–September,
   2012 are presented in this analysis
- The study population was stratified based on specialty
  - Primary care physicians (PCPs; family medicine, general practice, and internal medicine)
  - Specialists (General gastroenterologists, hepatologists, infectious disease specialists)

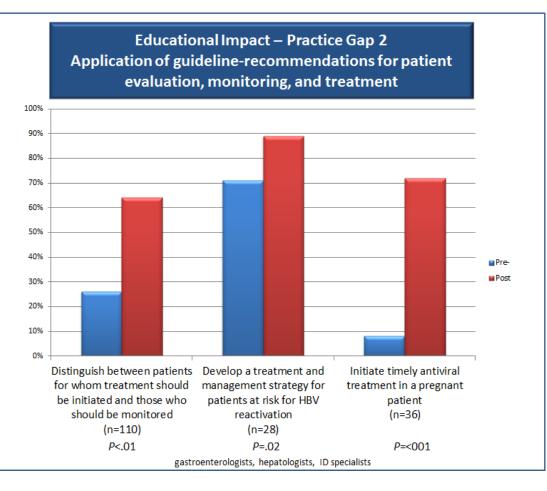
## **EDUCATIONAL IMPACT**

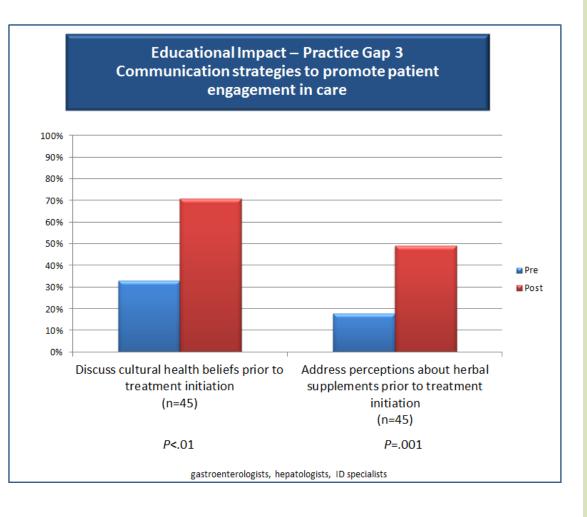
Compared to baseline, both primary care and specialist physicians were significantly more likely to make evidence-based decisions with respect to:

- Distinguishing among indications for patient monitoring vs treatment initiation
- Developing a management strategy for patients at risk for HBV reactivation
- Addressing the needs of pregnant women with chronic HBV infection
- Developing a management strategy for patients with HIV/HBV coinfection
- Incorporating culturally sensitive strategies into patient care









# **DISCUSSION AND NEXT STEPS**

- The Breaking Down Barriers in Hepatitis B: Treatment and Retention in Care Personalized Learning curriculum provided a tailored educational experience based on each providers' individual gaps
- Engagement in the PL curriculum, resulted in significantly improved confidence, competence, and performance across all three practice gaps among PCPs, gastroenterologists/hepatologists, and infectious disease specialists
- The personalized learning model has merit and applicability in several other therapeutic areas, including, but not limited to, hepatitis C, HIV infection, diabetes, menopause, and contraception

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Figure 2. Aligning Education to Each Individual's Practice Gaps

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# DISCLOSURES

Nancy S. Reau, MD, has served as an advisor or consultant for AbbVie Inc.; Gilead Sciences Inc.; and Idenix Pharmaceuticals, and has received grants for clinical research from AbbVie Inc.; Genentech, Inc.; Gilead Sciences, Inc.; Janssen Pharmaceuticals Products, L.P.; and Vertex Pharmaceuticals Incorporated.

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