Improving Pediatric Hepatitis B Screening in High-Risk San Diego Communities: A Community-Based Pilot Study

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Background

• Chronic hepatitis B virus (HBV) infection is prevalent among immigrants coming to the United States.
• However, HBV screening is suboptimal even in communities with a large immigrant population.
• Prior evaluations suggest that community practitioners’ awareness of HBV infection is inadequate and that clinician-directed educational interventions may be helpful.
Objectives

- To improve the performance of evidence-based guidelines for the screening of at-risk youth for chronic HBV infection.
Methods

- We partnered with a community health clinic (CHC) serving immigrants and a nonprofit organization dedicated to meeting the local community’s health needs.
- We developed and disseminated a clinician-directed quality improvement HBV screening web-based module at the CHC.
- Data on the performance of the CDC HBV screening guidelines at the CHC at baseline and throughout the 6-month pilot study were collected and analyzed using repeated measure analysis.
Web-based Module

• Formative work was performed to tailor development of the educational module and quality improvement project to account for specific practitioner-perceived HBV knowledge deficiencies and clinical workflow adjustments required to improve HBV screening.
• Video lecture
• QI project performed; Clinical Tools
• Data collected at baseline, 3, and 6 months
HBV Educational Video

Practical Clinical Guidance for the Screening for Hepatitis B Virus Infection in Youth

NASPGHAN
UC San Diego

HD • vimeo
**HEPATITIS B**

**General Information**

**What is hepatitis?**

“Hepatitis” means inflammation of the liver. The liver is a vital organ that processes nutrients, filters the blood, and fights infections. When the liver is inflamed or damaged, its function can be affected. Hepatitis is most often caused by a virus. In the United States, the most common types of viral hepatitis are Hepatitis A, Hepatitis B, and Hepatitis C. Heavy alcohol use, toxins, some medications, and certain medical conditions can also cause hepatitis.

**What is Hepatitis B?**

Hepatitis B is a contagious liver disease that results from infection with the Hepatitis B virus. When first infected, a person can develop an “acute” infection, which can range in severity from a very mild illness with few or no symptoms to a serious condition requiring hospitalization. Acute Hepatitis B refers to the first 6 months after someone is exposed to the Hepatitis B virus. Some people are able to fight the infection and clear the virus. For others, the infection remains and leads to a “chronic,” or lifelong, illness. Chronic Hepatitis B refers to the illness that occurs when the Hepatitis B virus remains in a person’s body. Over time, the infection can cause serious health problems.

The best way to prevent Hepatitis B is to get vaccinated.
Results

• Six of eight eligible pediatric practitioners completed the entire module over 6 months.
• Participants were all pediatric practitioners, 7 of whom were female and one male. The racial composition of the group was 50% Hispanic, 25% Asian, 12.5% African American, and 12.5% Caucasian.
# Office-Specific Outcomes

<table>
<thead>
<tr>
<th>Variable</th>
<th>Baseline</th>
<th>3 months</th>
<th>6 months</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBV screening policy developed</td>
<td>20 (45)%</td>
<td>80 (45)%</td>
<td>100 (0)%</td>
<td>0.09</td>
</tr>
<tr>
<td>Staff education re HBV screening policy posted and shared with families</td>
<td>40 (55)%</td>
<td>60 (55)%</td>
<td>80 (45)%</td>
<td>0.39</td>
</tr>
<tr>
<td>HBV screening policy posted and shared with families</td>
<td>0 (0)%</td>
<td>20 (45)%</td>
<td>80 (45%)</td>
<td>0.09</td>
</tr>
<tr>
<td>Process established to identify youth at risk for HBV</td>
<td>20 (45)%</td>
<td>80 (45)%</td>
<td>100 (0)%</td>
<td>0.09</td>
</tr>
</tbody>
</table>
## Practitioner Documentation

### Outcomes

<table>
<thead>
<tr>
<th>Variable</th>
<th>Baseline</th>
<th>3 months</th>
<th>6 months</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child’s risk for HBV based on place of birth</td>
<td>44 (44)%</td>
<td>98 (4)%</td>
<td>94 (13)%</td>
<td>0.12</td>
</tr>
<tr>
<td>Parental HBV status</td>
<td>16 (26)%</td>
<td>86 (26)%</td>
<td>90 (22)%</td>
<td>0.03</td>
</tr>
<tr>
<td>HBV status of persons living with child</td>
<td>4 (9)%</td>
<td>86 (26)%</td>
<td>90 (22)%</td>
<td>0.006</td>
</tr>
<tr>
<td>HBV vaccination status</td>
<td>98 (4)%</td>
<td>100 (0)%</td>
<td>98 (4)%</td>
<td>0.46</td>
</tr>
<tr>
<td>HBV risk behaviors</td>
<td>86 (31)%</td>
<td>98 (4)%</td>
<td>96 (9)%</td>
<td>0.46</td>
</tr>
</tbody>
</table>
Lab Screening Outcomes

- Review of laboratory orders at the community health clinic demonstrated a significant increase in the number of HBV laboratory screenings ordered over the pilot period.
- Baseline: 79 children were screened for chronic HBV infection over the prior year. Of these, only 2.5% (2 of 79) of laboratory screenings included all three blood tests recommended for HBV screening.
- In comparison, across the 6-month pilot study period, 447 patients were screened and 70% had the correct test combination for HBV screening, a statistically significant improvement (p<0.0001).
Module Reviews

• All participants reported that they would continue most or all of the changes in their clinical practice that had been initiated during this pilot study.

• On a scale of 0 (not useful at all) to 10 (very useful):
  – Utility rating of the module 8.2 (SD 2.0)
  – Gain in knowledge 9.4 (0.9)
  – Utility of the provided clinical tools 7.8 (1.9)
  – Improved understanding re: HBV 8.0 (1.4)
Conclusions

• Clinicians participating in a community-partnership project targeting improvement in clinician HBV screening demonstrated notable improvements in HBV screening practices and performance and clinical documentation.
• Results from this pilot study demonstrate the feasibility, clinician acceptance and performance, and efficacy of a certification-accredited, web-based module to improve clinical screening protocols for detection of chronic HBV infection in youth.
Thank You!

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