Comment. This survey indicates that a nonnegligible proportion of HCWs do not endorse the concept of inviting patients to ask about hand hygiene, a finding reported by other studies.7,8 The relatively low rate of endorsement is partly explained by the negative feelings associated with disclosing omission. Similar to their tendency not to disclose minor medical errors,9 HCWs may prefer to keep patients in relative ignorance regarding appropriate hand hygiene behavior to avoid delicate situations.4 Support from HCWs is central to the success of patient participation endeavors,1,6 and failure to enlist their open support may undermine the outcome of such programs.

Our study has some limitations. Our response rate was low, and both participation and desirability bias may be present. Our study was conducted in a single center with a longstanding experience in hand hygiene promotion (although without any patient participation component), and our results might not be fully generalizable to other settings. Caregivers’ reactions to real-life patient inquiry should be addressed further.

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Table. Factors Associated With Endorsement of Patient Participation to Improve Hand Hygiene (Multivariate Analysis)

<table>
<thead>
<tr>
<th>Belief/Perception</th>
<th>Endorsement of Patient Participation to Improve Staff Hand Hygiene</th>
<th>AOR (95% CI)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient participation should be promoted to prevent medical errors</td>
<td>8.4 (3.2-22.1)</td>
<td>&lt;.001</td>
<td></td>
</tr>
<tr>
<td>Patient participation would improve staff hand hygiene compliance</td>
<td>6.4 (2.4-16.8)</td>
<td>&lt;.001</td>
<td></td>
</tr>
<tr>
<td>Hand hygiene omission is consequential</td>
<td>0.1 (0.02-0.5)</td>
<td>.006</td>
<td></td>
</tr>
<tr>
<td>Patient inquiry would be humiliating</td>
<td>0.3 (0.1-1.0)</td>
<td>.02</td>
<td></td>
</tr>
<tr>
<td>Patient inquiry would question their professional attitude</td>
<td>0.4 (0.2-1.0)</td>
<td>.05</td>
<td></td>
</tr>
</tbody>
</table>

Abbreviation: AOR, adjusted odds ratio.

Hepatitis B Screening in a US Academic Primary Care Practice

Chronic hepatitis B virus (HBV) infection is a major cause of cirrhosis, liver failure, and hepatocellular carcinoma globally, with its highest burden in Asia.1,2 In the United States, up to 2 million persons have chronic HBV infection, of whom more than 50% are of Asian ancestry.1,3 In Asian Americans, HBV testing has been shown to be cost-effective.4 The Centers for Disease Control and Prevention recommends HBV screening in persons born in Asia in addition to their US-born children who were not vaccinated as infants.5

See Editor’s Note at end of letter
To date, data on HBV screening practices in the United States have been sparse and based primarily on patient and provider surveys. This study describes HBV testing in Asian Americans at an academic primary care practice and explores the reasons for lack of adherence to screening recommendations.

**Methods.** Mayo Clinic Rochester is a large multidisciplinary group practice that is located in Minnesota’s Olmsted County. Although known for specialty care in patients referred from elsewhere, Mayo Clinic also provides a large share of primary care to local residents. Out of approximately 140,000 residents of Olmsted County, 110,000 are seen at 6 practice locations by more than 200 physicians. The latest census indicated that Asian Americans account for 5% of the population of Olmsted County, similar to the percentage nationally.

Our practice incorporates a process called impanelment, whereby a designated primary care provider is assigned to an individual patient who meets certain criteria in order to maintain accountability and continuity of care. This study included patients who were impanelled from January 2005 to December 2009 and who gave research authorization and self-identified as Asian at registration.

In eligible patients, demographic and insurance information was obtained from the registration and billing data, respectively. The laboratory database was queried for any HBV serologic test and serum activities of aminotransferases between January 1994 and January 2010. This time frame was chosen based on the availability of electronic data. A chart review was performed on a 5% sample of randomly selected patients who were tested for HBV. Further details about the clinical circumstance in which the HBV testing was performed were determined.

**Results.** A total of 4055 Asian Americans were impanelled for primary care from 2005 through 2009. As shown in the Table, 1377 patients underwent at least 1 serologic test for HBV, including 1242 (31%) who underwent tests for hepatitis B surface antigen and 135 who underwent other HBV tests. The remaining 2678 underwent no testing for HBV. Among those who were tested, 105 (8.5%) were positive for hepatitis B surface antigen. Compared with untested patients, older and female patients were more frequently tested. Having insurance was not associated with increased HBV testing; in fact, insured patients were tested less frequently than those without insurance (31.9% vs 58.5%, respectively; *P* <.01).

In the 5% random sample (*n* = 75) of patients, the most common reason for HBV testing was pregnancy (25%) followed by preemployment examination (12%) and other medical indications such as abnormal laboratory data, occupational exposure, or adoption. In only 1 patient, the medical record specifically indicated that the provider performed HBV testing for a screening purpose following the guideline of the Centers for Disease Control and Prevention. There were 8 other patients in whom HBV testing was performed without a specified reason. Therefore, at most, a total of 9 patients (12%) underwent HBV testing for a screening purpose. Consistent with the most common reason for testing being pregnancy, obstetrics-gynecology was the most common specialty to order HBV testing.

**Comment.** This study shows that (1) HBV testing in Asian Americans has been inadequate, with only 31% of primary care recipients having evidence for testing for HBV; and (2) even when appropriate HBV testing was performed, it was rarely for the purpose of screening. It is also relevant to point out that the study participants were under consistent, continuous care (impanelled) at an academic practice. Screening for HBV may be even less frequent in other settings. Although limited, previously published data report screening rates for HBV in Asian Americans to be 35% to 70%. Other factors such as concordant ethnicity between the provider and patient

### Table. Characteristics of Study Participants

<table>
<thead>
<tr>
<th>Variable</th>
<th>Tested (n = 1377)</th>
<th>HBsAg− (n = 1137)</th>
<th>Anti-HBs− (n = 135)</th>
<th>Other Than Anti-HBs (n = 2678)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age ≤18 y, %</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age, mean (SD), y</td>
<td>36.7 (15.9)</td>
<td>31.2 (15.1)</td>
<td>35.5 (17.7)</td>
<td>35.2 (20.7)</td>
<td>34.2 (17.9)</td>
</tr>
<tr>
<td>Male sex, %</td>
<td>52</td>
<td>36</td>
<td>31</td>
<td>53</td>
<td>39</td>
</tr>
<tr>
<td>AST and/or ALT, No. (%)</td>
<td>Not done (n = 1)</td>
<td>233 (28)</td>
<td>59 (21)</td>
<td>5 (29)</td>
<td>37 (27)</td>
</tr>
<tr>
<td>Normal (n = 135)</td>
<td>42 (40)</td>
<td>449 (53)</td>
<td>128 (46)</td>
<td>9 (53)</td>
<td>60 (44)</td>
</tr>
<tr>
<td>Abnormal (n = 62)</td>
<td>59 (59)</td>
<td>161 (19)</td>
<td>90 (32)</td>
<td>3 (19)</td>
<td>38 (29)</td>
</tr>
</tbody>
</table>

Abbreviations: ALT, alanine aminotransferase; Anti-HBs, hepatitis B surface antibody; AST, aspartate aminotransferase; HBsAg, hepatitis B surface antigen.

The upper limit of normal for the test, with AST greater than 43 U/L for women and 48 U/L for men and ALT greater than 45 U/L for women and 55 U/L for men (to convert ALT and AST to microkatal per liter, multiply by 0.0167).
may promote HBV screening. We did not find insurance status to be correlated with HBV screening. A possible explanation could be the mandatory HBV screening in pregnant women that occurs independent of insurance status.

In summary, in this academic primary care practice, HBV testing has been inadequate, with an extremely low frequency of provider-initiated screening. Multifaceted approaches, including provider education and automatic reminders in electronic medical records, need to be studied to improve HBV screening in target individuals.

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Author Contributions: Study concept and design: Loo, Kim, Wieland, and Chaudhry. Acquisition of data: Loo, Kim, Larson, and Wieland. Analysis and interpretation of data: Loo, Kim, and Larson. Drafting of the manuscript: Loo and Kim. Critical revision of the manuscript for important intellectual content: Loo, Kim, Larson, Wieland, and Chaudhry. Statistical analysis: Kim and Larson. Obtained funding: Kim. Administrative, technical, and material support: Loo, Kim, Larson, Wieland, and Chaudhry. Study supervision: Kim.

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EDITOR’S NOTE

Increase Screening for Hepatitis B Among Asians

Hepatitis B is a treatable disease. Treatment decreases viral replication and hepatic enzyme levels, causes histologic improvement of the liver, and increases survival in treatment responders. Persons who are infected with hepatitis B also benefit from surveillance for hepatocellular cancer. Of course, for persons to benefit from advances in hepatitis B treatment, they have to know that they are infected. This research letter demonstrates that even in a best-case scenario, where patients are empaneled in primary care practices in an academic setting, screening for hepatitis B among Asians is extremely low. We hope that publication of this research letter reminds practicing physicians that they should screen their patients who were born in Asia or who are Asians who were born in this country but not vaccinated as infants.

Mitchell H. Katz, MD

RESEARCH LETTER

Within-Person Variability in High-Sensitivity C-Reactive Protein

C-reactive protein (CRP) is a marker of systemic inflammation and cardiovascular disease. Based on findings from recent clinical trials, CRP has been recommended as an adjunct screening tool to stratify cardiovascular risk in the general population. However, evidence regarding within-person variability of CRP in the general population is limited. Short-term variability in CRP has important implications for its use and interpretation in clinical practice and research studies. Thus, the objective of this study was to evaluate the short-term, within-person variability in CRP measurements and to quantify the impact of repeated testing on CRP-based cardiovascular risk classification.

See Editor’s Note at end of letter

Methods. We included 541 participants aged 16 to 69 years who completed repeated examinations of the 2001-2002 National Health and Nutrition Examination Survey (NHANES). Briefly, a 5% nonrandom sample of 2001-2002 NHANES participants was recruited for the second examination, occurring approximately 2.5 weeks after the original examination. Participants represented a uniform distribution of individuals by age, sex, and race/ethnicity. The study design and methods for NHANES are detailed elsewhere.