



CERNER REFERENCE GUIDE

EFFECTIVELY IMPLEMENTING CDC'S ADULT HEPATITIS B VACCINE POLICY



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DYNAVAX

IMPORTANT NOTES ABOUT YOUR CERNER REFERENCE GUIDE

- ✓ The information within this document is specific to Cerner electronic health record (EHR) software and intended for educational purposes only. Health systems are responsible for developing, implementing, testing, and monitoring all Cerner features utilized within their EHR system to ensure proper application and functionality.
- ✓ This document has not been reviewed or endorsed by the developers of Cerner. The information presented may not be complete or up-to-date as systems change without notice.
- ✓ The decision to vaccinate a patient is the responsibility of the provider, in consultation with the patient.
- ✓ This document is intended to be applicable to a wide range of health system sizes, but with an emphasis on the outpatient versus inpatient setting.
- ✓ Your institution/health system may or may not have access to all Cerner features and tools described within this document.

COMMON CERNER USERS AMONG YOUR HEALTHCARE TEAM



PROVIDER
Physician, NP, PA



NURSE



PHARMACIST



**HEALTH SYSTEM
MANAGEMENT**



PATIENT

INTRODUCTION TO YOUR UNIVERSAL CERNER GUIDE

This reference guide is a resource to help facilitate hepatitis B vaccination within health systems, in consideration of the Centers for Disease Control and Prevention (CDC) routine hepatitis B vaccination recommendations in adults.^{1,2*} With hepatitis B vaccination now deemed routine in this population, millions of adults in the United States are recommended for vaccination.³ This reference guide highlights **decision support tools, chart functionalities, and population health strategies** specific to Cerner software that can be leveraged to implement hepatitis B vaccination strategies targeting appropriate adult patients.

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*The CDC Advisory Committee on Immunization Practices (ACIP) updated its guidelines to recommend that all adults aged 19–59 years should receive hepatitis B vaccination. Additionally, all adults aged 60 years and older with risk factors for hepatitis B infection should be vaccinated. Adults aged 60 years and older without known risk factors may receive hepatitis B vaccination.¹

HEPATITIS B LANDSCAPE IN THE UNITED STATES

Hepatitis B remains a major public health concern, with 12 million Americans infected with the virus and up to 2.4 million living with chronic infection.^{4,5} While the 1991 pediatric vaccination policy helped decrease rates of hepatitis B in children, many adults are still vulnerable and cases are on the rise.⁶ To combat the growing number of hepatitis B cases, the CDC now recommends universal hepatitis B vaccination in eligible adults.^{1,2}

WHY DID THE CDC'S POLICY CHANGE TO UNIVERSAL VACCINATION?



In 2019, ~50% of new cases were among adults 30–49 years¹



In many states, the rate of new cases in adults has increased in the last decade^{1,7}



Due to the lack of an effective adult vaccination strategy, 4 out of 5 adults **born before 1991** do not have vaccine-induced immunity⁷

ADULT HEPATITIS B VACCINATION GUIDELINES IN THE US

The CDC's Advisory Committee on Immunization Practices (ACIP) issued updated hepatitis B vaccination recommendations for adults.² The *Morbidity and Mortality Weekly Report (MMWR)* published the recommendations as official guidelines in April 2022.¹

New guidelines simplify hepatitis B vaccine recommendations in adults^{1,2}

ALL ADULTS AGED 19–59 YEARS



SHOULD RECEIVE HEPATITIS B VACCINATION

ADULTS AGED 60 YEARS AND OLDER
WITH RISK FACTORS*



SHOULD RECEIVE HEPATITIS B VACCINATION

ADULTS AGED 60 YEARS AND OLDER
WITHOUT KNOWN RISK FACTORS



MAY RECEIVE HEPATITIS B VACCINATION

CDC, Centers for Disease Control and Prevention.

*Please refer to the hepatitis B vaccination guidelines noted in the *MMWR* publication for the specific risk factors for hepatitis B.¹

WHAT YOU WILL FIND WITHIN THE REFERENCE GUIDE

This guide discusses **decision support tools**, **chart functionalities**, and **population health strategies** specific to Cerner that health systems can leverage to increase vaccination rates for hepatitis B among adults.

IDENTIFYING AND ADDRESSING PATIENT INTERVENTIONS

By using features and tools available in Cerner, health systems can create a customized approach to implementing the CDC policy, with the goal of proactively encouraging hepatitis B vaccination among adults aged 19 years and older^{1,2} and tracking hepatitis B vaccine series completion.



Decision Support Tools

Functionalities for specific user groups that require response from the user.



Chart Functionalities

Tabs or screens accessible within a patient chart that provide key information to users. The information displayed can trigger a user to make a decision or perform a specific evaluation for that patient.









Population Health Strategies

Interactive databases that generate customized and filtered patient lists across an entire health system based on selected criteria. These patient lists can be leveraged to create batch functions. Examples of batch functions include, but are not limited to, sending a chart message, ordering a vaccine or medication, or flagging vaccination statuses.

AVAILABLE CERNER FEATURES AND TOOLS



Below is a curated list of Cerner features and tools available to help healthcare teams identify and address hepatitis B vaccination gaps.

FEATURE/ TOOL	TYPE	DEFINITION	INTENDED END USER	OUTPUT
Section 1: Decision Support Tools				
Discern Alert	 ALERT	Customizable alerts that pop up within a patient chart, triggering an action/decision from the Cerner user	<ul style="list-style-type: none"> • Provider (Physician, NP, PA) • Pharmacist • Nurse 	<ul style="list-style-type: none"> • Suggested intervention accepted and activated (eg, order placed) • Suggested intervention dismissed or postponed
Health Maintenance Alert	 ALERT	Customizable alerts that appear within the Health Maintenance section of the patient's chart, suggesting an action/decision from the Cerner user	<ul style="list-style-type: none"> • Provider (Physician, NP, PA) • Pharmacist • Nurse 	<ul style="list-style-type: none"> • Suggested intervention accepted and activated (eg, order placed) • Suggested intervention dismissed or postponed
PowerPlan	 ORDER ENTRY	Order entry workflow allows providers to order multiple components of the patient's plan of care including lab tests, x-rays, medications, vaccinations, and patient education	<ul style="list-style-type: none"> • Ordering providers and eligible co-signers 	<ul style="list-style-type: none"> • Vaccine ordered and administered
Section 2: Chart Functionalities				
Visit Summary	 PRINT DOCUMENT	Printed information provided to patient after a visit or hospitalization summarizing the encounter, and includes instructions, current medication list, follow-up appointments, and vaccination status	<ul style="list-style-type: none"> • Provider (Physician, NP, PA) • Pharmacist • Nurse 	<ul style="list-style-type: none"> • Patient notified of vaccination recommendation • Patient schedules a vaccination appointment or receives it at a pharmacy
HealthLife Patient Portal Reminder	 PATIENT PORTAL	Descriptive and personalized reminder messages for vaccinations and screenings sent by the patient's provider	<ul style="list-style-type: none"> • Provider (Physician, NP, PA) • Patient 	<ul style="list-style-type: none"> • Patient notified of vaccination recommendation • Patient schedules a vaccination appointment or receives it at a pharmacy
Immunization Forecaster	 PATIENT CHART	Type of preventive care tracking tool, which helps healthcare team members identify care gaps related to missing and overdue vaccinations	<ul style="list-style-type: none"> • Provider (Physician, NP, PA) • Pharmacist • Nurse 	<ul style="list-style-type: none"> • Passive – no direct action from generated tracking tool • Vaccine manually ordered and subsequently administered and documented

(Continued on next page.)

AVAILABLE CERNER FEATURES AND TOOLS

Below is a curated list of Cerner features and tools available to help healthcare teams identify and address hepatitis B vaccination gaps. (continued)

FEATURE/ TOOL	TYPE	DEFINITION	INTENDED END USER	OUTPUT
Section 3: Population Health Strategies				
Discern Informatics Query and Recall Report	 DATABASE	Functionality that allows users to filter patient data to identify gaps in care	<ul style="list-style-type: none"> • Provider (Physician, NP, PA) • Health system management 	<ul style="list-style-type: none"> • Report generated and reviewed for vaccination eligibility • Vaccine manually ordered and subsequently administered and documented
HealthIntent	 DATABASE	Aggregation and filtering of population health and patient data	<ul style="list-style-type: none"> • Provider (Physician, NP, PA) • Health system management 	<ul style="list-style-type: none"> • Reports and data sets generated and reviewed for vaccination eligibility

GUIDANCE FOR THE IMPLEMENTATION OF CERNER FEATURES AND TOOLS DISCERN ALERT



DECISION SUPPORT TOOL > Alert

Discern Alerts are customizable alerts that can appear within various sections in a patient chart when specific criteria are met, triggering an action or decision from the user.

CONSIDERATIONS

- It is important to ensure correct inclusion/exclusion criteria are incorporated to avoid unnecessary or incorrect popups
- Appropriately set up the hepatitis B vaccination Discern Alert to encourage healthcare teams to speak with their patients about vaccination and preventive care
- Include a link to the hepatitis B [MMWR publication](#) in your alert to give your healthcare team members key information to make informed decisions

HEPATITIS B VACCINATION – IMPLEMENTATION CHECKLIST

- Select title of alert: Adult Hepatitis B Vaccination Status
- Create Evoke (trigger event), Logic (inclusion/exclusion criteria), and Action (content/actions) parameters, which will indicate the ACIP criteria logic necessary to trigger the alert
- Include key message: Your patient is [RECOMMENDED to receive/OVERDUE for/MISSING A DOSE of] routine hepatitis B vaccination
- Select inclusion criteria for vaccination eligibility based on:
 - Patient Age: Patients aged 19 years and older^{1*} **AND**
 - Hepatitis B Vaccination History: No history of vaccination
- Select exclusion criteria for vaccination eligibility based on:
 - Patient Age: Patients aged 18 years and younger¹ **OR**
 - Contraindications to Hepatitis B Vaccination **OR**
 - Hepatitis B Vaccination History: Completion of hepatitis B vaccine series
- Create Discern Rules based on the inclusion and exclusion criteria above to identify patients recommended to receive hepatitis B vaccination

ACIP, Advisory Committee on Immunization Practices; CDC, Centers for Disease Control and Prevention; MMWR, *Morbidity and Mortality Weekly Report*.

*In order to comply with Boolean logic and address shared decision making, consider flagging adults aged 60 years and older without risk factors as *may be recommended to receive* hepatitis B vaccination.

GUIDANCE FOR THE IMPLEMENTATION OF CERNER FEATURES AND TOOLS HEALTH MAINTENANCE ALERT



DECISION SUPPORT TOOL > Alert

Health Maintenance Alerts appear in the Health Maintenance section of the patient's chart; they are used by providers and nurses to identify patients who may be recommended to receive vaccination.

CONSIDERATIONS

- Automate a Health Maintenance Alert for adult hepatitis B vaccination so that healthcare team members can stay on track with the updated vaccine recommendations
- Ensure the patient's vaccination history is current to avoid unnecessary or incorrect alerts
- Activate Health Maintenance Alerts for pharmacists and nurses – they can recommend and/or administer vaccines

HEPATITIS B VACCINATION – IMPLEMENTATION CHECKLIST

- Select title of alert: Adult Hepatitis B Vaccination Status
- Create Health Maintenance Expectation Schedules, Series, and Rules based on the criteria below, which will indicate the ACIP criteria logic necessary to trigger the alert and identify patients recommended to receive hepatitis B vaccination
- Include key message: Your patient is [RECOMMENDED to receive/OVERDUE for/MISSING A DOSE of] routine hepatitis B vaccination
- Select inclusion criteria for vaccination eligibility based on:
 - Patient Age: Patients aged 19 years and older^{1*} AND
 - Hepatitis B Vaccination History: No history of vaccination
- Select exclusion criteria for vaccination eligibility based on:
 - Patient Age: Patients aged 18 years and younger¹ OR
 - Contraindications to Hepatitis B Vaccination OR
 - Hepatitis B Vaccination History: Completion of hepatitis B vaccine series

ACIP, Advisory Committee on Immunization Practices; CDC, Centers for Disease Control and Prevention; MMWR, *Morbidity and Mortality Weekly Report*.

*In order to comply with Boolean logic and address shared decision making, consider flagging adults aged 60 years and older without risk factors as *may be recommended to receive* hepatitis B vaccination.

GUIDANCE FOR THE IMPLEMENTATION OF CERNER FEATURES AND TOOLS POWERPLAN



DECISION SUPPORT TOOL > Order Entry

PowerPlans provide streamlined order entry workflow by including all necessary individual orders associated with specified clinical care outcomes into one submission, such as lab tests, x-rays, medications, and vaccinations.

CONSIDERATIONS

- Leverage unique PowerPlan capabilities for vaccination orders by including patient education, such as Vaccine Information Statements (VIS), and scheduling patients' multidose hepatitis B vaccine to ensure series completion
- Utilize narrow selection functionality when creating vaccination order fields to help streamline provider workflow – allow providers to select the preferred product as the only choice
- Activate PowerPlans for pharmacists and nurses – they may be permitted to enter PowerPlans for cosign by providers*

HEPATITIS B VACCINATION – IMPLEMENTATION CHECKLIST

- Create a new PowerPlan or update an existing one (eg, Wellness Visit, Preventive Care Interventions, Discharge Plan)

- Select inclusion criteria for vaccination eligibility based on:
 - Patient Age: Patients aged 19 years and older^{1*} **AND**
 - Hepatitis B Vaccination History: No history of vaccination

- Select exclusion criteria for vaccination eligibility based on:
 - Patient Age: Patients aged 18 years and younger¹ **OR**
 - Contraindications to Hepatitis B Vaccination **OR**
 - Hepatitis B Vaccination History: Completion of hepatitis B vaccine series

- Include hepatitis B vaccine product details

CDC, Centers for Disease Control and Prevention.

*Not all health systems allow pharmacists and/or nurses to enter orders for cosign by providers. Check with your health system's policy before granting access to these user groups.

GUIDANCE FOR THE IMPLEMENTATION OF CERNER FEATURES AND TOOLS VISIT SUMMARY



CHART FUNCTIONALITY > Print Document

The Visit Summary is provided to patients after a visit or hospitalization. It includes instructions, current medication list, follow-up appointments, and vaccination status.

CONSIDERATIONS

- Review the Visit Summary with each patient, leveraging the opportunity to schedule their hepatitis B vaccination prior to discharge or leaving an appointment
- Use the **Clinical View Manager Tool** to add additional, customizable content to the Visit Summary
- To ensure users receive correct vaccination schedules for their patients, confirm the vaccine product details are entered into the alert specifications
- Counsel patients on routine vaccinations at every encounter as a critical preventive care strategy

HEPATITIS B VACCINATION - IMPLEMENTATION CHECKLIST

Select recommended vaccination: Adult Hepatitis B Vaccination

Sample message copy:

- You are RECOMMENDED to receive hepatitis B vaccination. Schedule an appointment to receive vaccination
- You are OVERDUE for your next hepatitis B vaccination dose. Schedule an appointment to receive vaccination
- You have NOT COMPLETED your routine hepatitis B vaccination series. Schedule an appointment to receive vaccination

Select inclusion criteria for vaccination eligibility based on:

- **Patient Age:** Patients aged 19 years and older^{1*} **AND**
- **Hepatitis B Vaccination History:** No history of vaccination

Select exclusion criteria for vaccination eligibility based on:

- **Patient Age:** Patients aged 18 years and younger¹ **OR**
- **Contraindications to Hepatitis B Vaccination** **OR**
- **Hepatitis B Vaccination History:** Completion of hepatitis B vaccine series

Include hepatitis B vaccine product details

Select Publish to complete the Visit Summary and provide to adult patients recommended to receive hepatitis B vaccination via the [HealthLife Patient Portal](#) , email, or printed copy

CDC, Centers for Disease Control and Prevention.

*In order to comply with Boolean logic and address shared decision making, consider flagging adults aged 60 years and older without risk factors as *may be recommended to receive* hepatitis B vaccination. CERNER Reference Guide | 11

GUIDANCE FOR THE IMPLEMENTATION OF CERNER FEATURES AND TOOLS HEALTHELIFE PATIENT PORTAL REMINDER



CHART FUNCTIONALITY > Patient Portal

HealthLife is Cerner's patient portal, where patients can see upcoming appointments, prescriptions due for refill, and overdue vaccinations. A messaging feature allows providers to send personalized reminder messages for vaccinations and screenings through the HealthLife Patient Portal system.

CONSIDERATIONS

- Use population health strategies, like [Discern Informatics Query](#) and [Recall Report](#), to select patients recommended to receive hepatitis B vaccination reminders through the patient portal
- Use **Clipboard forms** to encourage patients to keep their vaccination status updated in their HealthLife Patient Portal, especially whether they have received vaccination outside of your health system

HEPATITIS B VACCINATION – IMPLEMENTATION CHECKLIST

Input subject of HealthLife Reminder: Hepatitis B Vaccination

Sample message copy:

- You are RECOMMENDED to receive hepatitis B vaccination. Schedule an appointment to receive vaccination by clicking here
- You are OVERDUE for your next hepatitis B vaccination dose. Schedule an appointment to receive vaccination by clicking here
- You have NOT COMPLETED your routine hepatitis B vaccination series. Schedule an appointment to receive vaccination

Select inclusion criteria for vaccination eligibility based on:

- **Patient Age:** Patients aged 19 years and older¹* **AND**
- **Hepatitis B Vaccination History:** No history of vaccination

Select exclusion criteria for vaccination eligibility based on:

- **Patient Age:** Patients aged 18 years and younger¹ **OR**
- **Contraindications to Hepatitis B Vaccination** **OR**
- **Hepatitis B Vaccination History:** Completion of hepatitis B vaccine series

CDC, Centers for Disease Control and Prevention.

*In order to comply with Boolean logic and address shared decision making, consider flagging adults aged 60 years and older without risk factors as *may be recommended to receive* hepatitis B vaccination. CERNER Reference Guide | 12

GUIDANCE FOR THE IMPLEMENTATION OF CERNER FEATURES AND TOOLS IMMUNIZATION FORECASTER



CHART FUNCTIONALITY > Patient Chart

The Immunization Forecaster houses details of vaccination records, including those from manual entry and from medication administration records. This screen allows providers to view a patient's vaccination history as well as a list of vaccines suggested by Cerner based on the current CDC schedule and the patient's demographics.



CONSIDERATIONS

- Direct all healthcare team members to this tab by using a [Discern Alert](#) and/or [Health Maintenance Alert](#) allowing them to help screen patient vaccination status
- To effectively leverage the Immunization Forecaster, update the patient's vaccination history by recording administered vaccines, especially those not administered within your health system – it is important to document prior hepatitis B vaccinations to track series completion!
- For additional information, click on the link to the CDC schedule, allowing you to view updated CDC recommendations directly on its website



HEPATITIS B VACCINATION – IMPLEMENTATION CHECKLIST

- Create a [Discern Alert](#) and/or [Health Maintenance Alert](#) to remind your healthcare team to review the Immunization Forecaster
- Select inclusion criteria for vaccination eligibility based on:
 - **Patient Age:** Patients aged 19 years and older^{1*} **AND**
 - **Hepatitis B Vaccination History:** No history of vaccination
- Select exclusion criteria for vaccination eligibility based on:
 - **Patient Age:** Patients aged 18 years and younger¹ **OR**
 - **Contraindications to Hepatitis B Vaccination** **OR**
 - **Hepatitis B Vaccination History:** Completion of hepatitis B vaccine series

CDC, Centers for Disease Control and Prevention.

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GUIDANCE FOR THE IMPLEMENTATION OF CERNER FEATURES AND TOOLS DISCERN INFORMATICS QUERY AND RECALL REPORT



POPULATION HEALTH STRATEGY > Database

Discern Informatics Queries and Recall Reports allow providers to create Patient Lists that help identify patients who may be recommended to receive vaccination by searching patient databases within a health system as per selected criteria (eg, demographics, previous vaccinations).

CONSIDERATIONS

- Develop a Patient List that tracks hepatitis B vaccinations within your health system
- Utilize the **Report Design** and **Discern Analytics** to create a custom list with relevant filters to select/sort patients within the electronic health record
- Encourage all healthcare team members to review the Patient List and determine appropriate next steps for vaccination

HEPATITIS B VACCINATION – IMPLEMENTATION CHECKLIST

- Select title for list:** Adult Hepatitis B Vaccination Status
- Select inclusion criteria for vaccination eligibility based on:**
 - **Patient Age:** Patients aged 19 years and older^{1*} **AND**
 - **Hepatitis B Vaccination History:** No history of vaccination
- Select exclusion criteria for vaccination eligibility based on:**
 - **Patient Age:** Patients aged 18 years and younger¹ **OR**
 - **Contraindications to Hepatitis B Vaccination** **OR**
 - **Hepatitis B Vaccination History:** Completion of hepatitis B vaccine series
- Set up filters to extract relevant data for user, including but not limited to:**
 - **Associated provider**
 - **Patient population**
 - Adults aged 19–59 years
 - Adults aged 60 years and older with risk factors[†]
 - Adults aged 60 years and older without risk factors
 - **Patient location (eg, adult outpatient clinic, emergency department)**
 - **Vaccine product and doses completed**
 - **Date range**

CDC, Centers for Disease Control and Prevention.

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GUIDANCE FOR THE IMPLEMENTATION OF CERNER FEATURES AND TOOLS HEALTHINTENT



POPULATION HEALTH STRATEGY > Database

HealthIntent is a population health management platform that gives healthcare teams the ability to explore outcomes data at the health system level.

CONSIDERATIONS

- Utilize HealthIntent to cleanse and organize large-scale data that captures hepatitis B vaccination in your entire health system's patient population
- Streamline patient identification by creating appropriate reports and notifications for your healthcare team based on HealthIntent data analysis

HEPATITIS B VACCINATION – IMPLEMENTATION CHECKLIST

- Select inclusion criteria for vaccination eligibility based on:**
 - **Patient Age:** Patients aged 19 years and older¹* **AND**
 - **Hepatitis B Vaccination History:** No history of vaccination
- Select exclusion criteria for vaccination eligibility based on:**
 - **Patient Age:** Patients aged 18 years and younger¹ **OR**
 - **Contraindications to Hepatitis B Vaccination** **OR**
 - **Hepatitis B Vaccination History:** Completion of hepatitis B vaccine series
- Set up filters to extract relevant data for user, including but not limited to:**
 - **Associated provider**
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 - **Patient location (eg, adult outpatient clinic, emergency department)**
 - **Vaccine product and doses completed**
 - **Date range**

CDC, Centers for Disease Control and Prevention.

*In order to comply with Boolean logic and address shared decision making, consider flagging adults aged 60 years and older without risk factors as *may be recommended to receive* hepatitis B vaccination. [†]Please refer to the hepatitis B vaccination guidelines noted in the *MMWR* publication for the specific factors that increase risk for hepatitis B.¹

CERNER REFERENCE GUIDE

TAKE THE NEXT STEP

Help your team implement the CDC's adult hepatitis B vaccine policy with the key features and tools outlined in this document.



STEP 1 | COMMUNICATE

Early and often across multiple channels

[Click here](#) or scan the QR code to access and use communication templates



STEP 2 | EDUCATE

Staff about the CDC policy on universal adult hepatitis B vaccination^{1*}

For educational resources, [click here](#) or scan the QR code



STEP 3 | EVALUATE

Progress toward implementation goals

For tips on tracking your goals, [click here](#) or scan the QR code



CDC, Centers for Disease Control and Prevention.

*The CDC Advisory Committee on Immunization Practices (ACIP) updated its guidelines to recommend that all adults aged 19–59 years should receive hepatitis B vaccination. Additionally, all adults aged 60 years and older with risk factors for hepatitis B infection should be vaccinated. Adults aged 60 years and older without known risk factors may receive hepatitis B vaccination.¹

References: 1. Weng MK, Doshani M, Khan MA, et al. Universal hepatitis B vaccination in adults aged 19–59 years: updated recommendations of the Advisory Committee on Immunization Practices – United States, 2022. *MMWR Morb Mortal Wkly Rep.* 2022;71(13):477–483. 2. Murthy N, Wodi AP, Bernstein H, McNally V, Cineas S, Ault K. Advisory Committee on Immunization Practices Recommended Immunization Schedule for Adults Aged 19 Years or Older – United States, 2022. *MMWR Morb Mortal Wkly Rep.* 2022;71:229–233. 3. Data on file. Dynavax Technologies Corporation; 2022. 4. Hepatitis B Foundation. Do you know your hepatitis facts from fiction? May 7, 2014. Accessed January 11, 2023. <https://www.hepb.org/blog/do-you-know-your-hepatitis-facts-from-fiction/> 5. Hepatitis B Foundation. Hepatitis B facts and figures. Accessed January 11, 2023. <https://www.hepb.org/what-is-hepatitis-b/what-is-hepb/facts-and-figures/> 6. Hepatitis B virus: a comprehensive strategy for eliminating transmission in the United States through universal childhood vaccination. Recommendations of the Immunization Practices Advisory Committee (ACIP). *MMWR Recomm Rep.* 1991;40(RR-13):1–25. 7. He W-Q, Guo GN, Li C. The impact of hepatitis B vaccination in the United States, 1999–2018. *Hepatology.* 2022;75(6):1566–1578.

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