

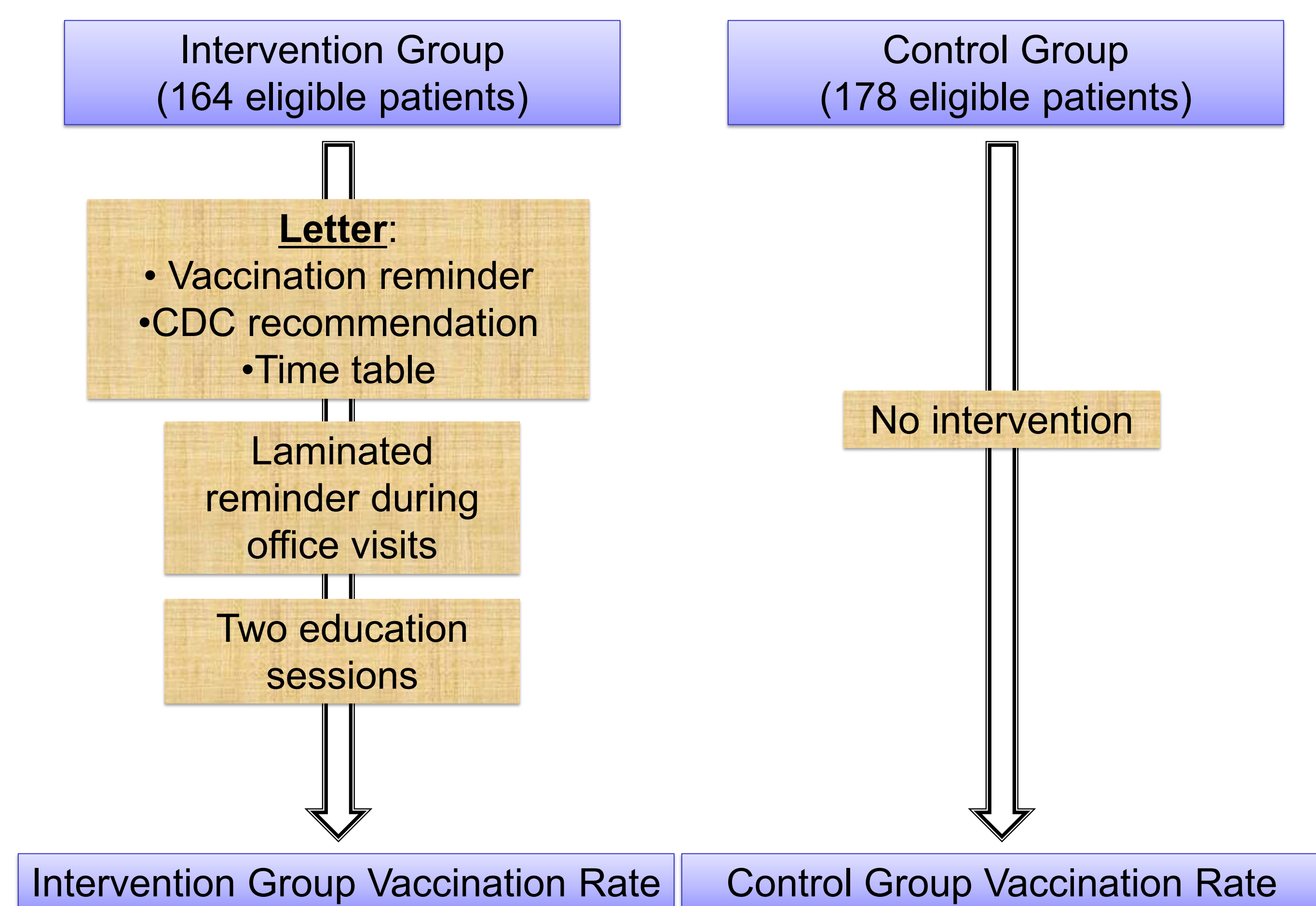
Improving Hepatitis B Vaccination Rates in Patients with Type I and II Diabetes Mellitus

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INTRODUCTION

- Chronic hepatitis B Virus (HBV) infection leads to cirrhosis and hepatocellular carcinoma in 20-30% of affected patients.
- Diabetic patients have a higher risk for acute HBV infection than non-diabetics due to regular skin breaks and are more likely to remain chronically infected.
- The Advisory Committee on Immunization Practices recommends hepatitis B vaccination for all adults aged 19-59 with diabetes (Type I and II), but in ambulatory practices, vaccination rates are often low.
- This multi-intervention quality improvement project aimed to improve hepatitis B vaccination among diabetic patients in a residency teaching clinic using a mailed letter campaign and visual vaccine reminders at office visits.

METHODS



Dear @M@ @LNAME@,

Vaccination reminder

I am writing to let you know that you are **DUE** for a Hepatitis B shot (vaccine).

Hepatitis B is a virus that causes liver damage and sometimes liver cancer.

The vaccine protects you from the virus. People with diabetes need the vaccine.

The United States Centers for Disease Control and Prevention (CDC) recommends that all adults 19-59 years of age who have diabetes should hepatitis B vaccination. Hepatitis B vaccine is given as a series of 3 shots over a period of 6 months (0, 1, 6 month schedule). All 3 shots are needed to protect you from hepatitis B.

CDC recommendation

Diabetes and Hepatitis B Vaccination

Information for Diabetes Educators

What is hepatitis B?

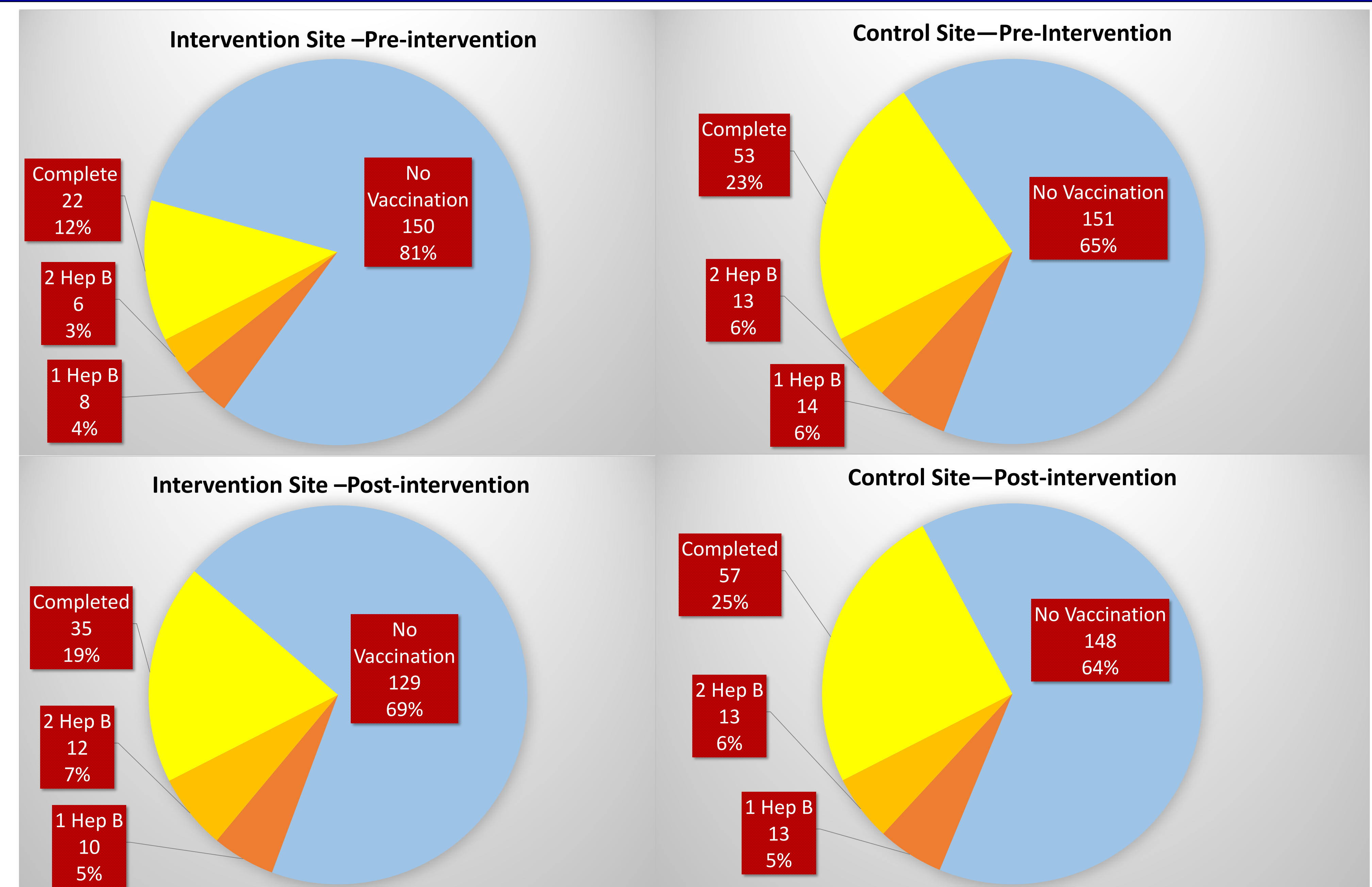
Hepatitis B is a contagious liver disease that results from infection with the hepatitis B virus.

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 infected with the hepatitis B virus. Some people are able to fight the virus and clear the infection. 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 damage to the liver and lead to complications such as liver failure or liver cancer.

How is hepatitis B spread?



RESULTS



▲ Figure 1. Hepatitis B vaccination status distribution in each group. Out of **164** letters sent, **21** patients were vaccinated. The return-rate was **12.8%**
▼ Table 1. Hepatitis B vaccination status Pre-/Post-Intervention

	Intervention Group			Control Group			p
	Pre	Post	% change	Pre	Post	% change	
Completed vaccination (No. pt(%))	22 (12%)	35 (19%)	7%	53 (23%)	57 (25%)	2%	0.0159 (0.9939 - 11.0216)
Received ≥ 1 vaccination (No. pt(%))	36 (19%)	57 (31%)	12%	80 (35%)	83 (36%)	1%	0.0001 (6.0792-18.6059)
No vaccination (No. pt(%))	150 (81%)	129 (69%)	-12%	151 (65%)	148 (64%)	-1%	

DISCUSSION

- Education, provider reminders, and patient engagement through letter outreach effectively improved hepatitis B vaccination significantly over 11 months.
- The comparison clinic has an on-site endocrinologist, which could explain the higher vaccination rate at baseline, and illustrates the importance of patient and clinician education.
- Hepatitis B Vaccination involves a series of 3 shots, therefore harder to complete compared to other vaccination such as flu shot, Tdap, etc.
- One limitation of the intervention is patient accessibility by mail or phone.
- The follow-up period is only 11 months; a longer study might better assess the impact of the intervention as more patients could complete all 3 vaccinations.
- It is unclear if multiple reminders or more education will further improve the vaccination rate, and further investigation might clarify these questions.

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