

# Elizabeth (Liz) Hall

## 1. Elizabeth Hall

### 1.1 Meet Elizabeth Hall

**Elizabeth (Liz) Hall**

Liz is a long time patient of yours. Last you saw her was when she had C. Difficile but she recovered well after treatment.

Last time you found she had diabetes (Hb A1C 7.1%). You've been titrating up her metformin and she has been on 1gm BID for almost a month.

**Liz**

What do you think?

### Liz (Slide Layer)

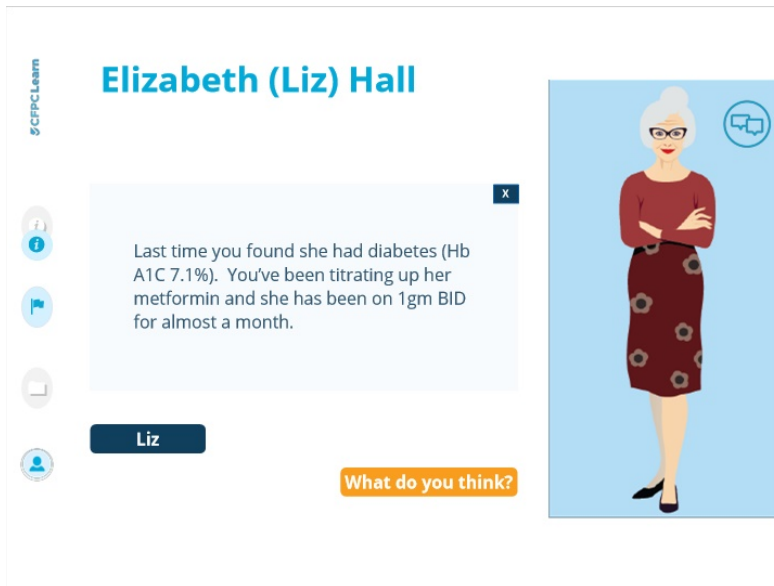
**Elizabeth (Liz) Hall**

**Liz**  
"Doctor! I've been having to go to the washroom 3-4 times a day. I can't get out of the house anymore, it's just horrible!  
Don't tell me it's that C. difficile again"

**Liz**

What do you think?

## Additional (Slide Layer)



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### Elizabeth (Liz) Hall

Last time you found she had diabetes (Hb A1C 7.1%). You've been titrating up her metformin and she has been on 1gm BID for almost a month.

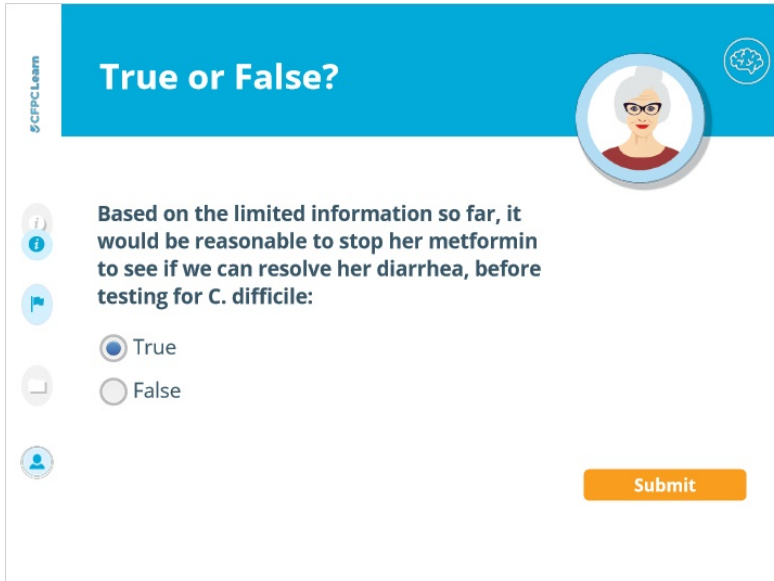
Liz

What do you think?

The slide features a vertical sidebar on the left with icons for home, back, forward, and user profile. The main content area includes a text box with a close button (X) and a character card for Liz Hall, an elderly woman with glasses, wearing a red top and a patterned skirt. A speech bubble icon is positioned above her head.

### 1.2 True or False Question

(Multiple Choice, 10 points, 1 attempt permitted)



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### True or False?

Based on the limited information so far, it would be reasonable to stop her metformin to see if we can resolve her diarrhea, before testing for *C. difficile*:

True

False



Submit

The slide has a blue header with the title 'True or False?' and a circular profile picture of Liz Hall. The question text is in bold. The radio buttons are positioned to the left of the 'True' and 'False' options. A 'Submit' button is located at the bottom right. The sidebar on the left contains icons for home, back, forward, and user profile.


### 1.3 Question Review

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## Thyroid Symptoms



Answer: True

 **Evidence Review: Metformin and Diarrhea**

A meta-analysis found the risk of diarrhea to be 14% with metformin versus 4% with placebo. An RCT with 1454 patients on metformin found diarrhea to be the most common adverse event, followed by abdominal discomfort and nausea.



Cohort studies show that asymptomatic C. difficile is common: 4-15% of healthy adults, and 56% of patients 1-4 weeks after being treated for C. difficile.

[Guidelines](#) [Let's learn more](#)


### Guidelines (Slide Layer)

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## Thyroid Symptoms



Answer: True

 **Evidence Review: Guidelines**

- Due to the risk of false positive results, guidelines recommend testing only when there are *no* explanations for the diarrhea.
- If Liz were positive for C. Difficile but her diarrhea resolved with stopping metformin, she should *NOT* be treated.

[Guidelines](#) [Let's learn more](#)

## 1.4 Elizabeth Hall

The screenshot shows a learning interface with a vertical toolbar on the left containing icons for home, back, forward, search, and user profile. The main content area is titled "Elizabeth (Liz) Hall" and contains a light blue text box with the text: "You decide that you should first ask Liz to stop her metformin." Below the text box are two dark blue buttons labeled "Liz" and "You". At the bottom right of the interface is an orange button labeled "Moving Forward". On the right side, there is a vertical panel with a blue background featuring an illustration of a woman with grey hair, glasses, a red top, and a dark skirt with a floral pattern. A speech bubble icon is in the top right corner of this panel.

### Liz (Slide Layer)

This screenshot is identical to the previous one but includes a slide layer. The slide layer is a light orange speech bubble with a close button (X) in the top right corner. It contains the following text: "Liz", "Oh, I should probably mention, I stopped taking Metformin almost a month ago.", and "It was making me sick to my stomach so I stopped." The "Liz" and "You" buttons remain visible below the slide layer.

## You (Slide Layer)

**Elizabeth (Liz) Hall**

**You**  
"Let's test you for C. Difficile then!  
Call me if your diarrhea worsens, you get a fever, abdominal pain or feels unwell.  
If it's positive, I'll call in a prescription."

Liz   You

Moving Forward

## 1.5 Multiple choice question

(Multiple Response, 10 points, 1 attempt permitted)

**If positive for C. difficile, the most appropriate treatment for mild first recurrence is?**

Select all that apply.



- Vancomycin 125mg PO QID x 10d followed by a test of cure
- Fidoxamycin 200mg po BID x 10d
- Recommendation to take a probiotic of her choice
- Metronidazole 250mg PO TID x 10d
- Vancomycin 125mg PO QID x 14d

Submit


## 1.6 Question Review

**Review**

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**Answer:** Fidoxamycin 200mg po BID x 10d & Vancomycin 125mg PO QID x 14d



 Review Answers Below

[Vancomycin](#) [Fidoxamycin](#) [Probiotics](#) [Let's learn more](#)


## Fidoxamycin (Slide Layer)

**Review**

CFPC Learn

**Answer:** Fidoxamycin 200mg po BID x 10d & Vancomycin 125mg PO QID x 14d

 **Fidoxamycin** x

- Fidoxamycin is also first line but it is much more expensive.
- However, for subsequent recurrences, a vancomycin prolonged taper would be used.

[Vancomycin](#) [Fidoxamycin](#) [Probiotics](#) [Let's learn more](#)

## Vancomycin (Slide Layer)

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### Review



**Answer:** Fidoxamycin 200mg po BID x 10d & Vancomycin 125mg PO QID x 14d

**Vancomycin**


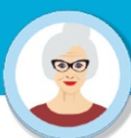
- Vancomycin oral for 10 days is first line for first presentation of C. difficile. Metronidazole is suggested only if patients are allergic to Vancomycin or can't afford it.
- 13-21% of patients will have a recurrence. For a first recurrence, a 14 day course of Vancomycin is recommended.

[Vancomycin](#) [Fidoxamycin](#) [Probiotics](#) [Let's learn more](#)

## Probiotics (Slide Layer)

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### Review



**Answer:** Fidoxamycin 200mg po BID x 10d & Vancomycin 125mg PO QID x 14d

**Probiotics**

- Probiotics play no role for the treatment of C. Difficile
- They have uncertain benefits for primary prevention: A Cochrane review from 2013 showed decreased incidence of C. Difficile but 2 more recent RCTs showed no difference.
- It is uncertain if probiotics prevent secondary recurrence (repeat infection) due to the poor quality of the available evidence.

[Vancomycin](#) [Fidoxamycin](#) [Probiotics](#) [Let's learn more](#)

## 1.7 Elizabeth Hall

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### Elizabeth (Liz) Hall

As you glance through her medications, considering Metformin replacement, you notice she is on long-standing pantoprazole 40mg once a day.

**You** **Liz**

Moving Forward

### You (Slide Layer)

CFPC Learn

### Elizabeth (Liz) Hall

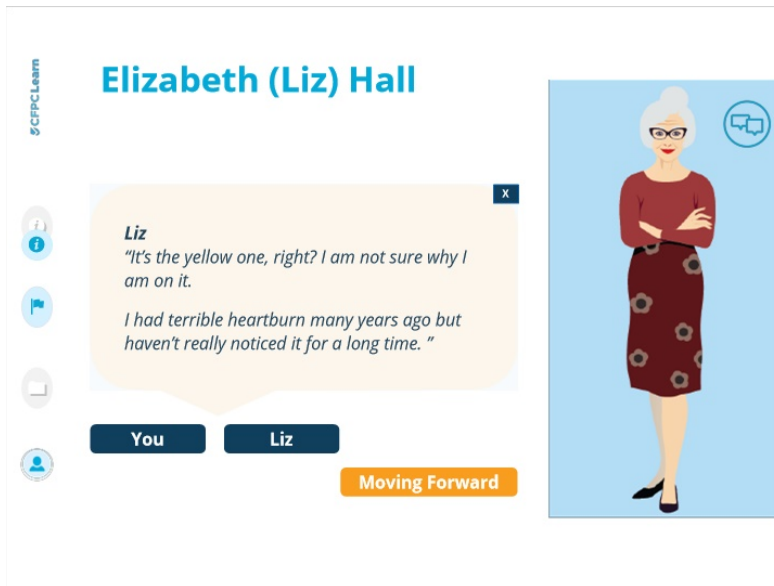
**You**  
*"I noticed you take Pantoprazole. Do you know why you had started it?"*

**You** **Liz**

Moving Forward



## Liz (Slide Layer)



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### Elizabeth (Liz) Hall

**Liz**  
"It's the yellow one, right? I am not sure why I am on it."  
*I had terrible heartburn many years ago but haven't really noticed it for a long time.*

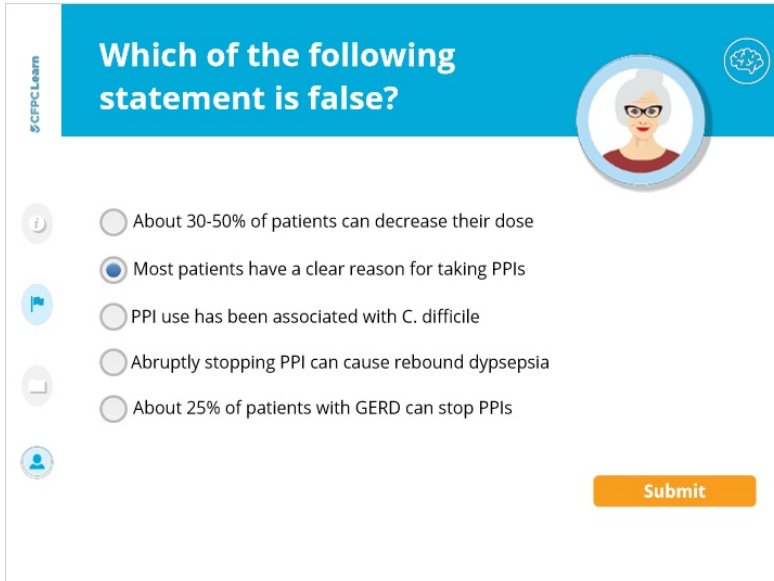
You Liz

Moving Forward

The slide layer features a vertical sidebar on the left with icons for home, back, forward, and user profile. The main content area has a title, a quote from Liz, and two buttons labeled 'You' and 'Liz'. A 'Moving Forward' button is at the bottom. On the right, there is a full-body illustration of Liz Hall, an older woman with short grey hair, glasses, a red top, and a dark skirt with a floral pattern. A speech bubble icon is next to her head.

## 1.8 Which of the following statement is false?

(Multiple Choice, 10 points, 1 attempt permitted)



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### Which of the following statement is false?

About 30-50% of patients can decrease their dose

Most patients have a clear reason for taking PPIs

PPI use has been associated with C. difficile

Abruptly stopping PPI can cause rebound dyspepsia

About 25% of patients with GERD can stop PPIs

Submit

The question slide has a blue header with the question text and a circular profile picture of Liz Hall. The sidebar on the left contains the same navigation icons as the previous slide. The question is a multiple-choice format with five options. A 'Submit' button is located at the bottom right.

## 1.9 Answer Slide

**Review**

SCFPC Learn

**Answer:** Most patients have a clear reason for taking PPIs is the false statement.

- Most patients have a clear...
- About 30-50% can decrease...
- PPIs have been associated with...
- Abruptly stopping PPIs can...

Click on the answers to the left to see more information

Let's review further

### Most patients (Slide Layer)

**Review**

SCFPC Learn

**Answer:** Most patients have a clear reason for taking PPIs is the false statement.

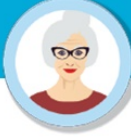
- Most patients have a clear...  
**Most patients don't have a clear reason for a PPI.**  
Cohort studies show that 40-65% of hospitalized patients and 40-55% of primary care patients in the UK and US lack a documented indication for taking PPIs
- About 30-50% can decrease...
- PPIs have been associated with...
- Abruptly stopping PPIs can...

Let's review further

## About (Slide Layer)

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# Review



**Answer:** Most patients have a clear reason for taking PPIs is the false statement.

**Most patients have a clear...**

**About 30-50% can decrease...**

**PPIs have been associated with...**

**Abruptly stopping PPIs can...**

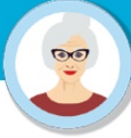
**About 30-50% can decrease their PPI.**  
An RCT showed that with physician education, 30% patients stopped PPIs at 6 months (vs 19% with usual care) and 50% reduced their dose.

**Let's review further**

## PPIs have (Slide Layer)

SCFPCLearn

# Review



**Answer:** Most patients have a clear reason for taking PPIs is the false statement.

**Most patients have a clear...**

**About 30-50% can decrease...**

**PPIs have been associated with...**

**Abruptly stopping PPIs can...**


**PPIs have been associated with C. difficile**  
PPI use has been associated with C. Difficile infections: ranging from 1/10,000 in the community to 8-10% of hospitalized patients receiving antibiotics

**Let's review further**

## Abruptly (Slide Layer)

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### Review



**Answer:** Most patients have a clear reason for taking PPIs is the false statement.

**Most patients have a clear...**

**About 30-50% can decrease...**

**PPIs have been associated with...**

**Abruptly stopping PPIs can...**

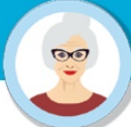
**Abruptly stopping PPIs can cause rebound dyspepsia**  
In an RCT, 21% of asymptomatic volunteers randomized to starting then stopping PPI had dyspepsia / GERD at 12w vs 2% randomized to placebo.

Let's review further

## E (Slide Layer)

SCFPCLearn

### Review



**Answer:** Most patients have a clear reason for taking PPIs is the false statement.

**Most patients have a clear...** Off label medications for AUD are Topiramate (RCT with 75mg daily showed 33.3% abstinence vs 14.5%) and Gabapentin (mixed evidence)

**About 30-50% can decrease...**


**PPIs have been associated with...**

**Abruptly stopping PPIs can...**



to the mation

Let's review further


## 1.10 Question Review



### Review




**Additional**

 **Certain patients can reduce or stop a PPI.**



For patients with no history of Barrett's esophagus, esophagitis, or bleeding GI ulcer and not taking NSAIDs, a recent guideline recommends either decreasing the PPI to a lower dose or using the PPI as needed. Over the counter antacids and/or H2RA (e.g. ranitidine) may be used.

**PPIs and NSAIDs?** **Moving Forward**

## Regular NSAID Use (Slide Layer)



### Review



**Additional**

**Patients taking NSAIDs regularly, a PPI is recommended for gastro-protection if:**

- The patient has  $\geq 3$  risk factors (>65 years old, high dose NSAIDs, non-bleeding GI ulcer, on ASA, corticosteroids or anti-coagulants).
- With 1-2 risk factors (moderate risk) may also require ongoing PPI but options like switching to a COX-2 (cyclooxygenase-2 inhibitor) NSAID may be a reasonable alternative as well (in moderate risk).

**PPIs and NSAIDs?** **Moving Forward**

## 1.11 Elizabeth Hall

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### Elizabeth (Liz) Hall

You indicate to Liz that you are now more certain that her antibiotics were the most likely cause.

Liz

Moving Forward

### Liz (Slide Layer)

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### Elizabeth (Liz) Hall

Liz  
*"Someone told me that this probably started because of those antibiotics I was taking for dental abscess."*

Liz

Moving Forward

## 1.12 What is the risk of C. Difficile infections for each antibiotic?

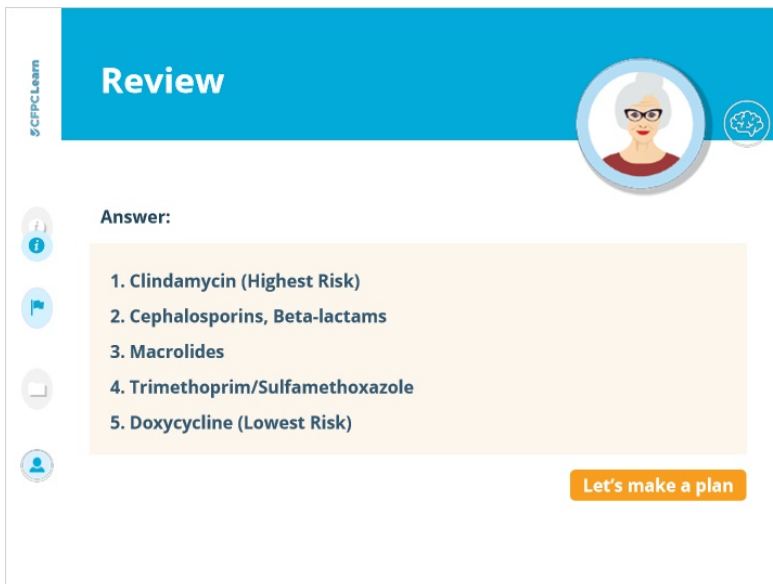
Rank from highest (top) to lowest risk (bottom).

(Sequence Drop-down, 10 points, 1 attempt permitted)



The screenshot shows a quiz question interface. At the top, there is a blue header with the text "Risk of C. difficile infection" and a circular profile picture of an elderly woman with glasses. Below the header, the question text reads: "What is the risk of C. Difficile infections for each antibiotic? Rank from highest (top) to lowest risk (bottom)." To the right of the question, there are five dropdown menus containing the following antibiotic names: Clindamycin, Cephalosporins, beta-lactams, Macrolide, Trimethoprim-Sulfamethoxazole, and Doxycycline. A blue "Submit" button is located at the bottom right of the question area.

## 1.13 Question Review





The screenshot shows a quiz question review interface. At the top, there is a blue header with the text "Review" and a circular profile picture of the same elderly woman. Below the header, the word "Answer:" is displayed. A light orange box contains the following ranked list of antibiotics: 1. Clindamycin (Highest Risk), 2. Cephalosporins, Beta-lactams, 3. Macrolides, 4. Trimethoprim/Sulfamethoxazole, and 5. Doxycycline (Lowest Risk). A blue "Let's make a plan" button is located at the bottom right of the review area.

## Regular NSAID Use (Slide Layer)

CFPC Learn

### Review



Answer:

**Patients taking NSAIDs regularly, a PPI is recommended for gastro-protection if:**



- The patient has  $\geq 3$  risk factors (>65 years old, high dose NSAIDs, non-bleeding GI ulcer, on ASA, corticosteroids or anti-coagulants).
- With 1-2 risk factors (moderate risk) may also require ongoing PPI but options like switching to a COX-2 (cyclooxygenase-2 inhibitor) NSAID may be a reasonable alternative as well (in moderate risk).

Let's make a plan

### 1.14 Let's Make a Plan

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### Let's Make a Plan



Using what you have learned write a plan for Liz. It can include any/all of the following: lifestyle intervention(s), prescription intervention(s), lab(s)/test(s) required, follow up appointment time frame, and referral required.

Fill in your plan for the patient here

See how your plan compares



## 1.15 Plan Answers

CFPC Learn

### Elizabeth (Liz) Hall

These are some potential points for the patient. How does your plan compare?

Prescriptions

Testing

Additional Advice

Next Appointment

Click on the buttons to see suggested answers

What's in a name?

Next Patient Back to Day Sheet

## Testing (Slide Layer)

CFPC Learn

### Elizabeth (Liz) Hall

These are some potential points for the patient. How does your plan compare?

Prescriptions

Testing

Additional Advice

Next Appointment

What's in a name?

Next Patient Back to Day Sheet

**Testing**

You send Liz for C. Difficile stool testing and let her know you will call in a prescription for Vancomycin 125mg PO QID x 14 days if she is positive.

She is to call in the meantime if she is getting any worse.

## Next Appointment (Slide Layer)

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**Elizabeth (Liz) Hall**

These are some potential points for the patient. How does your plan compare?

**Prescriptions**

**Testing**

**Additional Advice**

**Next Appointment**

*What's in a name?*

**Next Appointment**  
You ask Liz to book an appointment in 2 weeks or so to discuss diabetes management options.

**Next Patient** **Back to Day Sheet**

The screenshot shows a patient care interface for Elizabeth (Liz) Hall. On the left, there is a vertical sidebar with icons for information, a clipboard, a calendar, and a person. The main content area features the patient's name, a description of potential points for comparison, and four blue buttons: Prescriptions, Testing, Additional Advice, and Next Appointment. A green button labeled 'What's in a name?' is positioned below the buttons. A light blue slide layer is open, displaying the 'Next Appointment' section with a clock icon and a close button (X). At the bottom, there are two orange buttons: 'Next Patient' and 'Back to Day Sheet'. A circular profile picture of an elderly woman with glasses is in the top right corner, next to a navigation icon.

## Additional (Slide Layer)

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**Elizabeth (Liz) Hall**

These are some potential points for the patient. How does your plan compare?

**Prescriptions**

**Testing**

**Additional Advice**

**Next Appointment**

*What's in a name?*

**Additional Advice**  
You suggest Liz try taking her PPI only if she has symptoms of heartburn or similar. At her diabetes visit in 2 weeks you will ask her how her prn use of pantoprazole is going.

**Next Patient** **Back to Day Sheet**

The screenshot shows the same patient care interface for Elizabeth (Liz) Hall. The 'Additional Advice' button in the sidebar is highlighted, and the corresponding slide layer is open. The slide layer contains a heart icon, the title 'Additional Advice', and a paragraph of text: 'You suggest Liz try taking her PPI only if she has symptoms of heartburn or similar. At her diabetes visit in 2 weeks you will ask her how her prn use of pantoprazole is going.' The rest of the interface, including the sidebar, patient name, and bottom navigation buttons, remains the same as in the previous screenshot.

## Prescriptions (Slide Layer)

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### Elizabeth (Liz) Hall

These are some potential points for the patient. How does your plan compare?

- Prescriptions
- Testing
- Additional Advice
- Next Appointment

What's in a name?

Next Patient Back to Day Sheet

**Prescriptions**  
Liz's A1C was 7.1% at the time of her diabetes diagnosis so you decide to stop her metformin.

## Name (Slide Layer)

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### Elizabeth (Liz) Hall

These are some potential points for the patient. How does your plan compare?

- Prescriptions
- Testing
- Additional Advice
- Next Appointment

What's in a name?

Next Patient Back to Day Sheet

**What's in a name: Elizabeth Hall**  
C Difficile was first described in 1935 by Ivan C. Hall and Elizabeth O'Toole