

Charlotte “Charlie” MacLeod, 54

1. Charlotte MacLeod

1.1 Meet Charlie

Charlotte “Charlie” MacLeod, 54

Charlie was last seen three months ago and had an A1C of 8.0%. She was started on empagliflozin 25mg, ½ tab daily and continued metformin 500mg BID.

- Her last three office BPs were 146/88, 143/92 and 154/94. Today, BP 155/98.
- You had asked her to take two readings QAM & QPM for 7 days (total = 28 readings). You planned to discard first day readings and average the readings of the last 6 days.

Charlie **Moving Forward**

Charlie (Slide Layer)

Charlotte “Charlie” MacLeod, 54


Charlie: Sorry, I never got around to getting a BP monitor. Is it a big deal?

Charlie **Moving Forward**

1.2 Taking blood pressure is an art!

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Taking blood pressure is an art!



Patients should be calm, ideally alone, sitting in a chair, feet uncrossed and touching the floor, arm supported, with the right size cuff.
For more information, see Myles Tension, clinic 1.

Measurement Variable	Mean Increase in blood pressure
Talking during measurement	↑ 17 mmHg
Inappropriate cuff size (too small)	↑ 8 mmHg
Arm positioned below heart level	↑ 7-10 mmHg
Failure to support arm	↑ 2 mmHg

1.3 Meet Charlie

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Charlotte "Charlie" MacLeod, 54



You: The average of your last four visits is 150/93. And in all four readings, the top number was above normal.

Charlie: I'm sorry but I really don't like the idea of checking my blood pressure. I see the high number and I can feel my heart beating faster. I don't want to get a heart attack.

Conversation

Moving Forward

Risk (Slide Layer)

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Charlotte "Charlie" MacLeod, 54

You: Since we don't have home readings, and it sounds like you'd prefer not to do them, we'll have to use the office blood pressures. We don't want to wait too long and we should go ahead and treat it. Your high blood pressures increase your risk of heart attacks and strokes.

Charlie: What if I'm just stressed out being here and my blood pressure goes up?

Conversation

Moving Forward



1.4 True or false?

(True/False, 10 points, 1 attempt permitted)

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True or false?

White coat hypertension is when office BP is elevated but home or ambulatory BP are not.

True or false? White coat hypertension is benign.

True

False



1.5 Question Review

Review

Answer: False

Risk

Management

Click on the buttons to view additional information

Proceed

Risk of progression (Slide Layer)

Review

Answer: False

Risk

Management



Hypertension Canada reports that patients with white coat hypertension have a cardiovascular risk approximating normotensive individuals. They acknowledge that some research suggests white coat hypertension is more likely to progress to hypertension at home compared to normotensive patients without white coat hypertension.

Proceed

Management (Slide Layer)

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Review



Answer: False

Risk

Management

- Additionally, there is likely some association between white coat hypertension and cardiovascular events, especially for patients at high cardiovascular risk. However, results from cohort studies have been inconsistent.
- There are no randomized trials to guide management of white coat hypertension.
- Some guidelines, including European ones, advocate treating patients with anti-hypertensives if they are at high CV risk or have end organ damage .

Proceed

1.6 Meet Charlie

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Charlotte "Charlie" MacLeod, 54



You: The only way to know if your blood pressure is only high when seeing a doctor is to do your blood pressure at home.

Charlie: Let's be honest. I'm not going to do it. I really don't like this medical stuff.



Moving Forward

1.7 True or False?

(True/False, 10 points, 1 attempt permitted)

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True or False?



Even though we are not likely to get home readings from Charlie (which would be preferred), she still meets Hypertension Canada's diagnostic criteria for hypertension.

True



False



1.8 Question Review

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Review



Answer: True





Diagnosis

Assessment

Conversation

Click on the buttons to view additional information

Proceed



Dx (Slide Layer)

The screenshot shows a 'Review' slide layer with a blue header containing the word 'Review' and a user profile icon. On the left, there is a vertical sidebar with icons for 'Info', 'Diagnosis', 'Assessment', 'Conversation', and 'User'. The main content area displays 'Answer: True' with a close button. Below this are three buttons: 'Diagnosis', 'Assessment', and 'Conversation'. The 'Diagnosis' button is highlighted. The main text area contains the following text:

In patients where home/ambulatory BP is not possible, Hypertension Canada's criteria for diagnosing hypertension is:

- Visit 2: average BP ≥ 140 systolic and/or ≥ 90 diastolic with macrovascular target organ damage, diabetes mellitus, or chronic kidney disease (GFR < 60);
- Visit 3: average BP ≥ 160 systolic and/or ≥ 100 diastolic
- Visit 4 or 5: average BP ≥ 140 systolic and/or ≥ 90 diastolic

A 'Proceed' button is located at the bottom right of the content area.

Ax (Slide Layer)

The screenshot shows an 'Ax' slide layer with a blue header containing the word 'Review' and a user profile icon. On the left, there is a vertical sidebar with icons for 'Info', 'Diagnosis', 'Assessment', 'Conversation', and 'User'. The main content area displays 'Answer: True' with a close button. Below this are three buttons: 'Diagnosis', 'Assessment', and 'Conversation'. The 'Diagnosis' button is highlighted. The main text area contains the following text:

Charlie meets criteria after two visits due to her history of diabetes. Delay was due to negotiations/patient acceptance and attempts to get home monitoring.

A 'Proceed' button is located at the bottom right of the content area.

Conversation (Slide Layer)

The screenshot shows a slide titled "Review" with a blue header. On the left, there is a vertical sidebar with icons for information, a list, a document, a speech bubble, and a person. The main content area includes the text "Answer: True" and three dark blue buttons labeled "Diagnosis", "Assessment", and "Conversation". A character named Charlie is shown in a speech bubble saying, "Charlie: Ok sure, I have high blood pressure. Are you sure the meds are worth taking? I really don't want to take anything unnecessary." A response bubble from "You" says, "You: Let's look at your risk to see how much treating your blood pressure might help." A "Proceed" button is at the bottom right.

1.9 Question Review

The screenshot shows a slide titled "Estimating Risk" with a blue header. On the left, there is a vertical sidebar with icons for information, a list, a document, a speech bubble, and a person. The main content area includes four dark blue buttons labeled "Bloodwork", "Steps 1 and 2", "Step 3", and "Charlie". A light blue box contains the text "Click on the buttons to view additional information". A "Proceed" button is at the bottom right.

bw (Slide Layer)

Estimating Risk

Bloodwork
Steps 1 and 2
Step 3
Charlie

Average BP: 150/93
Last labs (3 months old):

- A1c: 8.0
- Creatinine: 95 (eGFR 71)
- No microalbuminuria
- Total Cholesterol: 5.7, LDL 4.1
- HDL: 0.9, triglycerides 3.6
- Total/HDL ratio 6.3

Proceed

Baseline (Slide Layer)

Estimating Risk

Bloodwork
Steps 1 and 2
Step 3
Charlie

Step 1: To estimate Charlie's risk, her demographic and health information is entered into an [online cardiovascular risk calculator](#).

Step 2: Charlie's 10-year risk of having a heart attack or stroke is ~23% if she does not take BP medication.

Without BP treatment

Risk Time Period
 10 years

77.1% No event
 22.9% Total with an event
 0.0% Number who benefit from treatment
 NNT ∞ Number needed to treat
 6.8% Baseline events using baseline factors alone
 16.1% Additional events "caused" by risk factors

CV risk with meds (Slide Layer)

Estimating Risk

Step 3: When blood pressure medications are added to the calculator, the relative benefit is reported as 50%.

This means that Charlie's 10-year risk can decrease from 23% to ~11% if she takes blood pressure medication.

Bloodwork

Steps 1 and 2

Step 3

Charlie

With BP treatment

Relative Benefit: **50%**

Harm Of Intervention

- Types of side effects vary between drugs
- Having to stop drug due to intolerance/ADR 10
- Inconvenience of surrogate remeasurements
- Drug Cost

Risk Time Period

10 years

77.1% No event
11.4% Total with an event
11.4% Number who benefit from treatment
NNT 9 Number needed to treat
6.8% Baseline events using baseline factors alone
4.6% Additional events "caused" by risk factors

Untitled Layer 7 (Slide Layer)

Estimating Risk

Bloodwork

Steps 1 and 2

Step 3

Charlie

Charlie: Oh, that was more risk than I remember. I don't want to end up like my friend Susan.



Proceed

1.10 Multiple choice question

(Multiple Response, 10 points, 1 attempt permitted)

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For a diabetic patient like Charlie, which medication should be considered first?





- Ramipril (ACEi)
- Indapamide (Thiazide diuretic)
- Amlodipine (Calcium Channel Blocker)
- It probably doesn't matter

Submit

1.11 Question Review

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Review



Answer: It probably doesn't matter.

- Drug therapy
- ACEi or ARBs
- Compare



Click on the buttons to view additional information

Proceed

Drug therapy (Slide Layer)

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Review



Answer: It probably doesn't matter.

Drug therapy

ACEI or ARBs

Compare

Hypertension Canada recommendations:



- Diabetes, no other risk factors:
 - ACEi, ARB, dihydropyridine CCBs or thiazide diuretics first line
- Diabetes with CKD, CVD or additional risk factors (not defined):
 - ACEi, ARB first line

Proceed

ACEI or ARBs (Slide Layer)

SCFPCLearn

Review



Answer: It probably doesn't matter.

Drug therapy

ACEI or ARBs

Compare



Despite these recommendations, the prioritization of ACEi/ARB for diabetics with risk factors other than CKD and CVD does not appear to be supported by evidence. **Any medication choice would be reasonable.**

Proceed

Compare (Slide Layer)

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Review



Answer: It probably doesn't matter.

Drug therapy

ACEI or ARBs

Compare

Meta-analysis of RCTs of **diabetic patients** randomized to ACE/ARBs or another agent:



- No difference in death (RR 0.99), cardiovascular death (RR 1.02), myocardial infarction (RR 0.87, not significant), stroke (RR 1.04), or end stage renal disease (RR 0.99).

Proceed

1.12 Create a Plan

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Charlotte "Charlie" MacLeod



Using what you have learned write a plan for Charlie. 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

1.13 Plan Answers

The screenshot shows a user interface for reviewing a proposed plan for Charlotte "Charlie" MacLeod. The interface includes a vertical sidebar on the left with icons for home, a list, a document, a calendar, and a person. The main content area features the patient's name and a circular profile picture. Below the name, a question asks, "This is the proposed plan for Charlie. How does your plan compare?". Three blue buttons are stacked vertically: "Continue", "Blood work", and "Next Appointment". A large light blue box contains the text "Select details on the left to see suggested recommendations". At the bottom, there is a green button labeled "What's in a name?" and an orange button labeled "Back to Day Sheet".

Continue (Slide Layer)

This screenshot shows the same interface as above, but with a detailed recommendation box open. The box is titled "You continue:" and contains two bullet points: "Empagliflozin 25mg, ½ tab daily (less costly than giving a 10mg tab)" and "Metformin 500mg PO BID (she has nausea with a higher dose)". The box has a close button (X) in the top right corner. The "Continue" button in the sidebar is now highlighted, indicating it is the active selection.

Bloodwork (Slide Layer)

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Charlotte "Charlie" MacLeod

This is the proposed plan for Charlie. How does your plan compare?

Continue

Blood work

Next Appointment

What's in a name?

Bloodwork:

- Charlie doesn't want to do blood work if possible, so you start her on amlodipine 5mg daily.
- You let her know that although you will respect her wish to minimize blood work, you will need to repeat the HbA1C (sugars) and monitor her kidneys.

Back to Day Sheet

The screenshot shows a slide layer titled "Bloodwork" for a patient named Charlotte "Charlie" MacLeod. The slide contains a list of two bullet points explaining the clinical reasoning for starting amlodipine and monitoring HbA1C and kidneys. Navigation buttons for "Continue", "Blood work", and "Next Appointment" are visible on the left, along with a "Back to Day Sheet" button at the bottom right.

Next Appointment (Slide Layer)

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Charlotte "Charlie" MacLeod

This is the proposed plan for Charlie. How does your plan compare?

Continue

Blood work

Next Appointment

What's in a name?

Next Appointment

Return in 4-6 weeks with a BP check with your nurse in 3-4 weeks.

Back to Day Sheet

The screenshot shows a slide layer titled "Next Appointment" for the same patient. The slide contains a single paragraph of text: "Return in 4-6 weeks with a BP check with your nurse in 3-4 weeks." The navigation buttons on the left are the same as in the previous slide, and the "Back to Day Sheet" button is also present at the bottom right.

Name (Slide Layer)

The screenshot shows a slide layer interface for a patient named Charlotte "Charlie" MacLeod. On the left, there is a vertical sidebar with icons for information, a list, a calendar, and a person. The main content area features the patient's name and a circular profile picture. Below the name, there are three blue buttons: "Continue", "Blood work", and "Next Appointment". A text box with a close button (X) is titled "Meaning Behind the Name: Charlotte MacLeod" and contains the text: "Fredrick Banting and the discovery of insulin are synonymous. However, two others were involved: *Charles Best* ('Charlie') and *JJR MacLeod*." At the bottom, there is a green button labeled "What's in a name?" and an orange button labeled "Back to Day Sheet".

CFPC Learn

Charlotte "Charlie" MacLeod

This is the proposed plan for Charlie. How does your plan compare?

[Continue](#)

[Blood work](#)

[Next Appointment](#)

Meaning Behind the Name: Charlotte MacLeod

Fredrick Banting and the discovery of insulin are synonymous. However, two others were involved: *Charles Best* ("Charlie") and *JJR MacLeod*.

[What's in a name?](#)

[Back to Day Sheet](#)