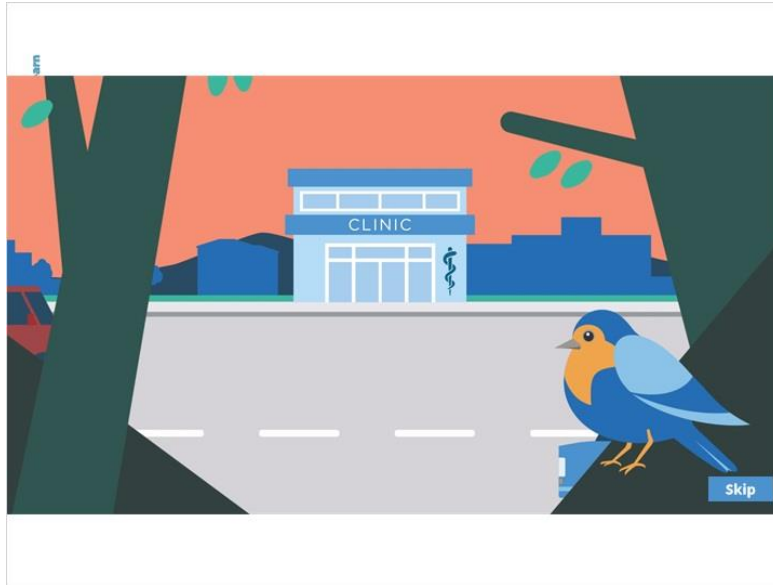


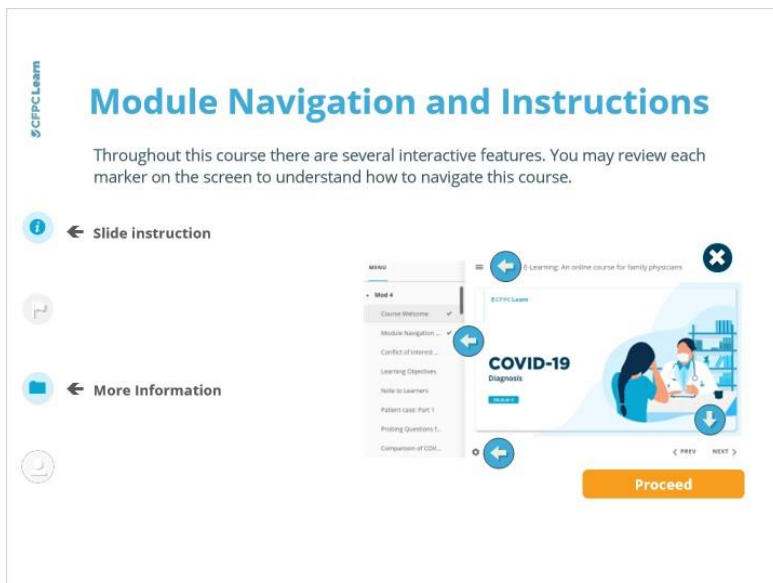
Case 37 Lang Holler

1. Conflicts

1.1 Intro Video



1.2 Module Navigation and Instructions



1.3 Learning Objectives

CFPC Learn

Learning Objectives

At the end of this module participants should be able to:

1. Identify key factors/findings in family medicine to help establish common clinical diagnoses.
2. Evaluate best evidence/guidance and practice tools to determine preferred treatment options for patients.
3. Synthesize patient preference, evidence and experience to formulate comprehensive plans for patient cases.

Approximately 15 minutes to complete each patient case.

Proceed

2. Lang Holler

2.1 Lang Holler


CFPC Learn

Lang Holler, 40

Lang is 40 year old male software designer. He has no past medical history of significance, is a non-smoker and tries to jog about three times a week. He had had two COVID vaccines but had COVID four months ago. He comes to you with persistent fatigue, shortness of breath and occasional "brain fog".

Lang Physical Exam Conversation
Depression Depression 2

What do you think?



Lang (Slide Layer)

SCFCLearn

Lang Holler, 40

Lang: I was pretty sick for about a week with a cough, chest pain; super tired and couldn't smell for a week.

You: Sorry to hear you are still sick, Lang. COVID can really hit hard. Tell me about how it affected you four months ago.

Lang Physical Exam Conversation
Depression Depression 2

What do you think?



Exam (Slide Layer)

SCFCLearn


Lang Holler, 40

Physical exam is unremarkable :

- HR 72 bpm, oxygen saturation 98%
- No pallor
- Chest clear

Lang Physical Exam Conversation
Depression Depression 2

What do you think?



conversation (Slide Layer)

The screenshot shows a slide titled "Lang Holler, 40" with the SCFFCLearn logo in the top left. On the right is a character illustration of a man in a blue hoodie and dark pants. The slide contains a conversation flow:

- A yellow speech bubble from Lang: "It is really strange. I have good days and not so good days. And I didn't get the chest burning til later." (with a close 'x' button).
- A blue speech bubble from You: "How has this affected your work?"
- A yellow speech bubble from Lang: "I have had to take days off now and then."
- Navigation buttons: "Lang", "Physical Exam", "Conversation", "Depression", and "Depression 2".
- An orange callout box: "What do you think?"

Depression (Slide Layer)

The screenshot shows a slide titled "Lang Holler, 40" with the SCFFCLearn logo in the top left. On the right is a character illustration of a man in a blue hoodie and dark pants. The slide contains a conversation flow:

- A light blue text box from You: "You do the two-item PHQ-2 , which is a quick screen for depression." (with a close 'x' button).
- A blue speech bubble from You: "Over the last 2 weeks, how often have you been bothered by little interest or pleasure in doing things?"
- A yellow speech bubble from Lang: "Not at all, still love my video games and films!"
- Navigation buttons: "Lang", "Physical Exam", "Conversation", "Depression", and "Depression 2".
- An orange callout box: "What do you think?"

Depression - Copy (Slide Layer)

SCFFC Learn

Lang Holler, 40

How about feeling down, depressed or hopeless?

Not really, just tired and want to have more energy.

Lang Physical Exam Conversation
Depression Depression 2

What do you think?

X

The screenshot shows a digital learning interface. On the left is a vertical toolbar with icons for information, navigation, and search. The main content area features a title 'Lang Holler, 40' and a conversation between two characters. A blue speech bubble asks 'How about feeling down, depressed or hopeless?'. A yellow speech bubble replies 'Not really, just tired and want to have more energy.' Below the conversation are several topic tags: 'Lang', 'Physical Exam', 'Conversation', 'Depression', and 'Depression 2'. An orange button asks 'What do you think?'. On the right, there is a small 'X' icon and a full-body illustration of a man with dark hair, wearing a blue hoodie and dark pants, standing against a light blue background.

2.2 Multiple choice question

(Multiple Response, 10 points, 1 attempt permitted)

SCFFC Learn

Which of the following are features of long COVID?

Select all that apply.

- Symptoms lasting more than 6 weeks
- Fluctuating Symptoms
- Any organ system involvement
- Can have significant effect on function



Submit

The screenshot shows a digital learning interface for a multiple-choice question. At the top, a blue header contains the title 'Which of the following are features of long COVID?' and a circular profile picture of a man in a blue hoodie. Below the header, the question text reads 'Select all that apply.' followed by four options, each with a checkbox. The first option, 'Symptoms lasting more than 6 weeks', has an unchecked checkbox. The other three options, 'Fluctuating Symptoms', 'Any organ system involvement', and 'Can have significant effect on function', all have checked checkboxes. At the bottom right, there is an orange 'Submit' button. On the left side, there is a vertical toolbar with icons for information, navigation, and search.

2.3 Review

CFPCLearn

Review



Answer: Features of long COVID include:

- Fluctuating symptoms
- Any organ system involvement
- Can have significant effect on function

Definition

Symptoms

Presentation

Prevalence



Symptom Frequency

Moving Forward

Definition (Slide Layer)

CFPCLearn

Review



Answer: Features of long COVID include:

- Fluctuating symptoms
- Any organ system involvement
- Can have significant effect on function

Definition

Symptoms

Presentation

Prevalence

Symptom Frequency

Long COVID has been defined by the WHO as symptoms occurring 12 weeks after initial infection with COVID.


- Also known as: long-haul COVID, post acute sequelae of COVID [PASC]
- Earlier studies looked at symptoms lasting ≥ 4 weeks.

Moving Forward

Symptoms (Slide Layer)

SCFPCLearn

Review



Answer: Features of long COVID include:

- Fluctuating symptoms
- Any organ system involvement
- Can have significant effect on function

Definition

Symptoms

Presentation

Prevalence

Symptom Frequency



- Fatigue: 40-58%
- Dyspnea: 24-37%
- Anosmia: 17-24%
- Memory loss/ cognitive decline/confusion: 7-28%
- Cough: 14-19%
- Atypical chest pain: 13-24%
- Anxiety/depression: 12-22%
- Headache: 12-44%
- Sleep troubles: 11-29%
- Loss of taste: 9-23%
- General pain/myalgia/joint pain: 15-25%

Moving Forward

PRresentation (Slide Layer)

SCFPCLearn

Review



Answer: Features of long COVID include:

- Fluctuating symptoms
- Any organ system involvement
- Can have significant effect on function

Definition

Symptoms

Presentation

Prevalence

Symptom Frequency

Fluctuation of symptoms is common and new symptoms can appear after initial resolution of acute COVID.

Any organ system can be involved.

Moving Forward

Prevalence (Slide Layer)

SCFPCLearn

Review

Answer: Features of long COVID include:

- Fluctuating symptoms
- Any organ system involvement
- Can have significant effect on function

- Definition**
- Symptoms**
- Presentation**
- Prevalence**
- Symptom Frequency**

- Prevalence changed over the pandemic.
 - Risk of selection: enrollment in studies for "long COVID" based on post acute symptoms (72-80%) versus seeking care for symptoms in primary care (15%).
- In earlier studies, about 10% were unable to return to work after 12 weeks.

Moving Forward

Graph (Slide Layer)

SCFPCLearn

Review

Click on magnifying glass to zoom.

- Definition**
- Symptoms**
- Presentation**
- Prevalence**
- Symptom Frequency**

		SYMPTOM FREQUENCY IN POST-COVID-19 CONDITION			
		<5%	5-15%	15-30%	>30%
GENERAL			fatigue, memory		fatigue
NEURO-PSYCH			brain fog, memory, anxiety	brain fog, anxiety, depression	
HEAD & NECK		headache, dizziness	headache, dizziness, ear ringing, ear pain		
RESP			cough, hoarse	shortness of breath	
CARDIAC			heartburn, chest pain		
GASTRO-INTESTINAL		loss of appetite, abdominal pain	diarrhea, abdominal pain		
URO-GENITAL		urinary incontinence, urinary pain	urinary pain, urinary frequency		

Figure 5. Prevalence of Individual Symptoms Associated with the Post-COVID-19 Condition According to Organ System



Moving Forward

2.4 Multiple choice question

(Multiple Response, 10 points, 1 attempt permitted)

#CFPCLearn

Which of the following statements is most accurate?





- There are clear risk factors for long COVID.
- Vaccination reduces risk long COVID.
- Long COVID leads to chronic fatigue syndrome.

[Submit](#)

2.5 Review

#CFPCLearn

Review



Answer: Vaccination reduces the risk of long COVID.



- [Risk Factors](#)
- [Vaccination](#)
- [Chronic Fatigue Syndrome](#)

[Moving Forward](#)

Risk factors (Slide Layer)

SCFFCLearn

Review



Answer: Vaccination reduces the risk of long COVID.

Risk Factors

Vaccination

Chronic Fatigue Syndrome



- Risk factors have been found (though with conflicting results): hospitalization, more initial symptoms, female, pre-existing anxiety/depression/loneliness.
- But long COVID can occur after any degree of severity and has been documented after asymptomatic infections.
- Recent findings: post-Delta variant (11%) vs post-Omicron (4.4%)

Moving Forward

Risk of long COVID (Slide Layer)

SCFFCLearn

Review



Answer: Vaccination reduces the risk of long COVID.

Risk Factors

Vaccination

Chronic Fatigue Syndrome

Risk of Long COVID in vaccinated versus unvaccinated:



- A systematic review of 18 observational studies with over 100,000 patients:
 - Two vaccine doses pre-infection: relative risk 0.82.
- An observational cohort study of health care workers required to get three vaccines (739 with positive PCR)
 - Two doses: odds ratio 0.25.
 - Three doses: odds ratio 0.16.

Moving Forward

Chronic Fatigue (Slide Layer)

SCFPCLearn

Review



Answer: Vaccination reduces the risk of long COVID.

Risk Factors

Vaccination

Chronic Fatigue Syndrome

Chronic fatigue syndrome (CFS) has many overlapping symptoms but is defined as symptoms for greater than 6 months and does not need a clear infectious initiating event.

- Most common attributed viral triggers have been EBV/CMV.
- Insufficient evidence to establish COVID as a cause of CFS.

Moving Forward

2.6 Lang Holler

SCFPCLearn

Lang Holler, 40


Physical exam: HR 72, oxygen saturation 98

- Chest clear
- No pallor

You: Lang, your exam is reassuring.

Lang: Should we do some testing to make sure my lungs are okay?

What do you think?





2.7 Multiple choice question

(Multiple Response, 10 points, 1 attempt permitted)

CFPCLearn

What are your next steps?



Select all that apply.



- CBC, creatinine, LFTs, TSH
- D-Dimer
- Consider chest xray
- Spirometry
- CT scan chest

Submit

2.8 Review

CFPCLearn

Review



Answer: Next steps should include:

- CBC, creatinine, LFTs, TSH
- D-dimer
- Consider CXR

Specific testing

Differential diagnosis



Co-morbidities

Moving Forward

Specific tests (Slide Layer)

SCFPCLearn

Review



Answer: Next steps should include:

- CBC, creatinine, LFTs, TSH
- D-dimer
- Consider CXR

Specific testing

Differential diagnosis

Co-morbidities



There are no specific tests for long COVID and over-testing should be avoided.

Moving Forward

Differential (Slide Layer)

SCFPCLearn

Review



Answer: Next steps should include:

- CBC, creatinine, LFTs, TSH
- D-dimer
- Consider CXR

Specific testing

Differential diagnosis

Co-morbidities



- Rule out other causes of dyspnea and fatigue with CBC, creatinine, LFTs, TSH.
- Rule out pulmonary embolus with d-dimer (recommended by UpToDate).

Moving Forward

Co-morbidities (Slide Layer)

SCFPCLearn

Review



Answer: Next steps should include:

- CBC, creatinine, LFTs, TSH
- D-dimer
- Consider CXR

Specific testing

Differential diagnosis

Co-morbidities

Other tests may be indicated in patients with other co-morbidities.

Moving Forward

2.9 Review

SCFPCLearn



One suggested approach from Ontario Health is described below.

Symptom-Directed Laboratory and Other Tests

There are no routine tests for the post-COVID-19 condition. Tests should be ordered as indicated by symptoms and clinical judgement.

- CBC
- C-reactive protein, ESR, ferritin
- TSH
- Chest x-ray

Reference: [Post-COVID-19 Condition: Guidance for Primary Care, Ontario Health](#)

Moving Forward

2.10 Lang Holler

The screenshot shows a virtual patient encounter interface. On the left, a vertical sidebar contains the text '#CFPCLearn' and four circular navigation icons. The main area is titled 'Lang Holler, 40'. A blue speech bubble from the provider says: 'You: It really sounds like you have long COVID and it is quite common. Let's go over some things you can do for now.' A yellow speech bubble from the patient says: 'Lang: Man, I was hoping there would be a quick fix!'. To the right is a full-body illustration of a man in a dark blue hoodie and pants. At the bottom right, there is an orange button labeled 'Make a Plan for Lang'.

2.11 Create a Plan

The screenshot shows a virtual patient encounter interface for creating a plan. On the left, a vertical sidebar contains the text '#CFPCLearn' and four circular navigation icons. The main area is titled 'Let's Make a Plan'. In the top right corner, there is a circular profile picture of the patient and a clipboard icon. Below the title, text reads: 'Using what you have learned write a plan for Lang. 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.' A large light blue text box contains the prompt 'Fill in your plan for the patient here'. To the left of this box are five small circular icons representing different intervention types. At the bottom right, there is an orange button labeled 'See how your plan compares'.

2.12 Plan Answers

CFPC Learn

Lang Holler, 40

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

- Next steps
- Exercise
- Fatigue and breathing
- Disclaimer

Select details on the left to see suggested recommendations

What's in a name?

Next Patient Back to Day Sheet

Detailed description: This is a screenshot of a digital patient plan interface. At the top left is the 'CFPC Learn' logo. The patient's name 'Lang Holler, 40' is displayed in large blue text. Below the name is a circular profile picture of a man and a small icon of a scale. A question asks, 'This is the proposed plan for the patient. How does your plan compare?'. On the left, there are four blue buttons: 'Next steps', 'Exercise', 'Fatigue and breathing', and 'Disclaimer'. A large light blue box in the center contains the text 'Select details on the left to see suggested recommendations'. At the bottom left is a green button labeled 'What's in a name?'. At the bottom right are two orange buttons: 'Next Patient' and 'Back to Day Sheet'. A vertical sidebar on the far left contains several circular navigation icons.

Next steps (Slide Layer)

CFPC Learn

Lang Holler, 40

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

- Next steps
- Exercise
- Fatigue and breathing
- Disclaimer

- Validation of symptoms
- Order blood work and arrange 2-3 week follow-up

What's in a name?

Next Patient Back to Day Sheet

Detailed description: This screenshot shows the same interface as above, but with the 'Next steps' button selected. A light blue slide layer has opened over the central area, displaying a list of two items: 'Validation of symptoms' and 'Order blood work and arrange 2-3 week follow-up'. The slide layer has a small 'x' icon in its top right corner. The rest of the interface, including the patient name, buttons, and navigation icons, remains visible in the background.

Exercise (Slide Layer)

The screenshot shows a software interface for a patient named Lang Holler, 40. On the left, there is a vertical sidebar with the 'SCFCLearn' logo and a navigation menu containing icons for information, a list, a document, and a refresh. The main content area features the patient's name and a circular profile picture. Below this, a text prompt asks, 'This is the proposed plan for the patient. How does your plan compare?'. A central panel contains four blue buttons: 'Next steps', 'Exercise', 'Fatigue and breathing', and 'Disclaimer'. A green button labeled 'What's in a name?' is positioned below these. On the right, a light blue information box with a close button (X) contains a list of points: 'Advice for graded exercise is generally advised (though based on minimal evidence)', 'Refer Lang to [online resources](#) to help him cope with long COVID', and 'Breathing exercises, paced activities'. At the bottom right, there are two orange buttons: 'Next Patient' and 'Back to Day Sheet'.

Fatigue and breathing (Slide Layer)

This screenshot is similar to the one above, showing the same patient care interface for Lang Holler, 40. The navigation sidebar and main header are identical. The central panel's buttons remain the same. The green 'What's in a name?' button is also present. The light blue information box on the right now displays specific advice under two headings: 'Fatigue:' and 'Focus on Breath'. The 'Fatigue:' section includes a list: 'Find baseline, focus on what you need to do', 'Schedule energizers: breaks, switching activities, stop before symptoms', and 'Slowly increase activity'. The 'Focus on Breath' section includes a list: 'Tips on breathing and pacing [available on CanCov videos](#)'. The orange 'Next Patient' and 'Back to Day Sheet' buttons are at the bottom right.

Disclaimer (Slide Layer)

SCFPCLearn

Lang Holler, 40

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

- Next steps
- Exercise
- Fatigue and breathing
- Disclaimer

What's in a name?

Disclaimer!

Evidence on long COVID is evolving:

- Majority of studies done on patients early in the pandemic.
- New variants have different acute presentations
- Anxiety about COVID is decreasing

Next Patient Back to Day Sheet

The screenshot shows a software interface for a patient named Lang Holler, 40. On the left, there is a vertical sidebar with the logo 'SCFPCLearn' and a list of menu items: 'Next steps', 'Exercise', 'Fatigue and breathing', and 'Disclaimer'. Below the menu is a green button labeled 'What's in a name?'. The main content area features a patient profile card with a photo of a man and a balance scale icon. Below the profile, a text prompt asks 'This is the proposed plan for the patient. How does your plan compare?'. A light blue slide layer is open, displaying a 'Disclaimer!' with a lightbulb icon. The text explains that evidence on long COVID is evolving and lists three points: majority of studies were done early in the pandemic, new variants have different acute presentations, and anxiety about COVID is decreasing. At the bottom of the slide layer are two orange buttons: 'Next Patient' and 'Back to Day Sheet'.

Name (Slide Layer)

SCFPCLearn

Lang Holler, 40

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

- Next steps
- Exercise
- Fatigue and breathing
- Disclaimer

What's in a name?

Meaning Behind the Name: Lang Holler

Sounding like "long hauler," Lang is currently experiencing long COVID or long-haul COVID.



Next Patient Back to Day Sheet

The screenshot shows the same software interface as above, but with a different slide layer open. The slide layer is titled 'Meaning Behind the Name: Lang Holler' with a lightbulb icon. The text explains that the name 'Lang' sounds like 'long hauler' and that the patient is currently experiencing long COVID or long-haul COVID. The rest of the interface, including the sidebar, patient profile, and navigation buttons, remains the same.

2.13 References

CFPCLearn

References



Thanks for visiting the clinic!

References for this case are available [here](#).

This activity is eligible for up to 0.25 Mainpro+ credits.

