

Assessing and Managing Potential Drug-Drug Interactions in People Living with HIV



Activity number: 481587



This activity has been approved by ASHM for 4 HIV CPD. A maximum of 4 HIV CPD per year for completing a Lateral Connections audit.

First Name:	
Surname:	
RACGP or ASHM number:	
Email Address:	
State:	

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### INTRODUCTION



People living with HIV are developing age-related comorbidities more frequently and at earlier ages than the general population.<sup>1</sup> Alongside this rise in multimorbidity is an increase in polypharmacy, typically defined as use of at least five medications.

Evidence has consistently demonstrated that people living with HIV take more medications than those without HIV, even when excluding antiretroviral (ARV) drugs.<sup>1</sup> Polypharmacy is thus a special challenge especially for older people living with HIV, placing them at high risk for drug-drug interactions (DDIs) potentially leading to poor clinical outcomes including physical decline, cognitive impairment, falls, hospitalisations, and increased mortality.<sup>1</sup>

#### **BACKGROUND READING:**

Pharmacokinetic drug-drug interactions may occur during absorption, metabolism, or elimination of the ARV and/or the interacting drug. The Liverpool Drug Interactions website has several videos that discuss basic drug disposition, available on this link: https://www.hiv-druginteractions.org/videos

Summarise the principles of drug absorption, metabolism and excretion as well as drug-drug interactions.	

<sup>1.</sup> The Geriatric Syndromes: Frailty, Multimorbidity and Polypharmacy: https://hivmanagement.ashm.org.au/ageing-with-hiv-infection/the-geriatric-syndromes-frailty-multimorbidity-and-polypharmacy/

## **OPENING REFLECTION**



- 1. What do you hope to achieve by completing this program?
- 2. Identify your individual learning goals in relation to assessing and managing potential drug-drug interactions in people living with HIV.
- 3. What areas of assessing and managing potential drug-drug interactions would you specifically like to focus on?
- 4. How do you currently assess and manage potential drug-drug interactions in people living with HIV?
- **5.** What resources do you currently use to assist with screening and identifying potential drug-drug interactions in people living with HIV?

6.	. What strategies do you employ to reduce the burden of polypharmacy in people living with HIV?

### **LEARNING OUTCOMES & AUDIT OUTLINE**



### **LEARNING OUTCOMES**

Evaluate the gaps between your practice and recommendations from recognised sources of guidance in the area of drug-drug interactions

Determine appropriate regular medication review strategies to provide optimisation of therapy in people living with HIV.

Determine appropriate deprescribing strategies to provide optimisation of therapy in people living with HIV.

Identify suitable resources for people living with HIV to enhance their ability to understand the implications of drug-drug interactions.

Review changes that are required to improve the quality of care for people living with HIV in your practice.

### **CASE FINDING ACTIVITY**

#### Identify five people living with HIV who are taking:

- >5 medications including over-the-counter medicines and/or
- herbal and alternative treatments and/or
- · recreational drugs

**AND** have not had a full medication review performed since the last time any medication (ARV or non-ARV) was commenced, changed or discontinued,

**AND** have other red flags such as older age, multi-morbidities, mental health conditions and/or suspected medication adherence issues.



### **REVIEW CURRENT PATIENT RECORDS**

Review the records of the five people living with HIV from the CASE FINDING ACTIVITY.

Provide summary notes from current records for each of the five people living with HIV (de-identified and unidentifiable).



### PATIENT RECALL CONSULTATION NOTES

Contact the same five patients you identified earlier, asking them to visit the practice for re-assessment and full medication review.

Following recall consultation with each of these five patients, record any changes made to their management based on your learning and improvement objectives.

### **CASE FINDING ACTIVITY**



#### Identify five people living with HIV who are taking:

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- herbal and alternative treatments and/or
- recreational drugs

**AND** have not had a full medication review performed since the last time any medication (ARV or non-ARV) was commenced, changed or discontinued,

**AND** have other red flags such as older age, multi-morbidities, mental health conditions and/or suspected medication adherence issues.

Use your practice systems and processes (e.g. search tools and databases) to access patient data for these patients.

#### **PRACTICE SYSTEMS AND PROCESSES**

Make notes on your ability to search and collate data on these patients. Are your search functions adequate or can they be improved? If so, how can they be improved?	

Pharmacokinetic drug-drug interactions between ARV drugs and concomitant medications are common and may lead to increased or decreased drug exposure. Additionally, changes in kidney and liver function may influence dosing requirements. Alterations in drug exposure may increase the frequency and/or severity of toxicities or affect therapeutic responses.

A thorough review of concomitant medications is a start to designing a regimen (if appropriate) that minimises undesirable interactions.



Review the records of the five people living with HIV from the CASE FINDING ACTIVITY. Provide summary notes from current records for each of the five people living with HIV (de-identified and unidentifiable) below:

#### **PATIENT 1**

Why was this patient identified as suitable for a full medication review? Tick all that apply:
Taking ≥5 medications including over-the-counter medicines
Taking herbal and alternative treatments
Taking recreational drugs
Has not had a full medication review performed since the last time any medication (ARV or non-ARV) was commenced, changed or discontinued
Is of older age
Has multi-morbidities
Has mental health conditions
Has suspected medication adherence issues
Other
What is this patient's ARV regimen? How long have they been on the current ARV regimen?
What are these patient's co-morbidities (including liver and kidney function, if applicable)?



### **PATIENT 1 (CONTINUED)**

What non-ARV medications are this patient taking including prescribed, over-the-counter (including inhalers, nasal sprays etc), supplements and herbal remedies?
How long ago was a comprehensive medication review last conducted? Who conducted the review (e.g. pharmacist)?
Are there any behaviours that might affect medication adherence? If yes, what might they be?
*How many ARV agents/active components is this patient taking?
2 3 4 >5
*How many non-ARV agents/active components (including non-prescription and recreational) is this patient taking?
2-4       5-7       8-10       11-13       ≥14
*Include any that are not administered orally.
Which of the ARV and non-ARV agents/active components listed above would you consider to be implicated in potential
drug-drug interactions? Describe the potential clinical impact of these interactions. Consider the relevance of some drug-drug interactions if the route of administration bypasses gastrointestinal absorption and the impact of liver/kidney impairments. Refer to:
https://www.hiv-druginteractions.org/checker
https://hivmanagement.ashm.org.au/drug-drug-interactions-in-patients-with-hiv-infection/
https://clinicalinfo.hiv.gov/sites/default/files/guidelines/documents/adult-adolescent-arv/guidelines-adult-adolescent-arv.pdf (Page M-1 onwards)



Review the records of the five people living with HIV from the CASE FINDING ACTIVITY. Provide summary notes from current records for each of the five people living with HIV (de-identified and unidentifiable) below:

#### **PATIENT 2**

Why was this patient identified as suitable for a full medication review? Tick all that apply:
Taking >5 medications including over-the-counter medicines
Taking herbal and alternative treatments
Taking recreational drugs
Has not had a full medication review performed since the last time any medication (ARV or non-ARV) was commenced, changed or discontinued
Is of older age
Has multi-morbidities
Has mental health conditions
Has suspected medication adherence issues
Other
What is this patient's ARV regimen? How long have they been on the current ARV regimen?
What are these patient's co-morbidities (including liver and kidney function, if applicable)?



### **PATIENT 2 (CONTINUED)**

What non-ARV medications are this patient taking including prescribed, over-the-counter (including inhalers, nasal sprays etc), supplements and herbal remedies?
How long ago was a comprehensive medication review last conducted? Who conducted the review (e.g. pharmacist)?
Are there any behaviours that might affect medication adherence? If yes, what might they be?
*How many ARV agents/active components is this patient taking?
2 3 4 >5
*How many non-ARV agents/active components (including non-prescription and recreational) is this patient taking?
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https://hivmanagement.ashm.org.au/drug-drug-interactions-in-patients-with-hiv-infection/
https://clinicalinfo.hiv.gov/sites/default/files/guidelines/documents/adult-adolescent-arv/guidelines-adult-adolescent-arv.pdf (Page M-1 onwards)



Review the records of the five people living with HIV from the CASE FINDING ACTIVITY. Provide summary notes from current records for each of the five people living with HIV (de-identified and unidentifiable) below:

#### **PATIENT 3**

Why was this patient identified as suitable for a full medication review? Tick all that apply:
Taking >5 medications including over-the-counter medicines
Taking herbal and alternative treatments
Taking recreational drugs
Has not had a full medication review performed since the last time any medication (ARV or non-ARV) was commenced, changed or discontinued
Is of older age
Has multi-morbidities
Has mental health conditions
Has suspected medication adherence issues
Other
What is this patient's ARV regimen? How long have they been on the current ARV regimen?
What are these patient's co-morbidities (including liver and kidney function, if applicable)?



### **PATIENT 3 (CONTINUED)**

What non-ARV medications are this patient taking including prescribed, over-the-counter (including inhalers, nasal sprays etc), supplements and herbal remedies?
How long ago was a comprehensive medication review last conducted? Who conducted the review (e.g. pharmacist)?
Are there any behaviours that might affect medication adherence? If yes, what might they be?
*How many ARV agents/active components is this patient taking?
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Refer to: https://www.hiv-druginteractions.org/checker
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https://clinicalinfo.hiv.gov/sites/default/files/guidelines/documents/adult-adolescent-arv/guidelines-adult-adolescent-arv.pdf (Page M-1 onwards)



Review the records of the five people living with HIV from the CASE FINDING ACTIVITY. Provide summary notes from current records for each of the five people living with HIV (de-identified and unidentifiable) below:

#### **PATIENT 4**

Why was this patient identified as suitable for a full medication review? Tick all that apply:
Taking >5 medications including over-the-counter medicines
Taking herbal and alternative treatments
Taking recreational drugs
Has not had a full medication review performed since the last time any medication (ARV or non-ARV) was commenced, changed or discontinued
Is of older age
Has multi-morbidities
Has mental health conditions
Has suspected medication adherence issues
Other
What is this patient's ARV regimen? How long have they been on the current ARV regimen?
What are these patient's co-morbidities (including liver and kidney function, if applicable)?



### **PATIENT 4 (CONTINUED)**

What non-ARV medications are this patient taking including prescribed, over-the-counter (including inhalers, nasal sprays etc), supplements and herbal remedies?
How long ago was a comprehensive medication review last conducted? Who conducted the review (e.g. pharmacist)?
And there any had a visual that might offect modification adherence? If you what might they had
Are there any behaviours that might affect medication adherence? If yes, what might they be?
*How many ARV agents/active components is this patient taking?
2 3 4 >5
*How many non-ARV agents/active components (including non-prescription and recreational) is this patient taking?
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https://hivmanagement.ashm.org.au/drug-drug-interactions-in-patients-with-hiv-infection/
https://clinicalinfo.hiv.gov/sites/default/files/guidelines/documents/adult-adolescent-arv/guidelines-adult-adolescent-arv.pdf (Page M-1 onwards)



Review the records of the five people living with HIV from the CASE FINDING ACTIVITY. Provide summary notes from current records for each of the five people living with HIV (de-identified and unidentifiable) below:

### **PATIENT 5**

Why was this patient identified as suitable for a full medication review? Tick all that apply:				
Taking >5 medications including over-the-counter medicines				
Taking herbal and alternative treatments				
Taking recreational drugs				
Has not had a full medication review performed since the last time any medication (ARV or non-ARV) was commenced, changed or discontinued				
Is of older age				
Has multi-morbidities				
Has mental health conditions				
Has suspected medication adherence issues				
Other				
What is this patient's ARV regimen? How long have they been on the current ARV regimen?				
What are these patient's co-morbidities (including liver and kidney function, if applicable)?				



### **PATIENT 5 (CONTINUED)**

What non-ARV medications are this patient taking including prescribed, over-the-counter (including inhalers, nasal sprays etc), supplements and herbal remedies?
How long ago was a comprehensive medication review last conducted? Who conducted the review (e.g. pharmacist)?
Are there any behaviours that might affect medication adherence? If yes, what might they be?
*How many ARV agents/active components is this patient taking?
2 3 4 >5
*How many non-ARV agents/active components (including non-prescription and recreational) is this patient taking?
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Which of the ARV and non-ARV agents/active components listed above would you consider to be implicated in potential drug-drug interactions? Describe the potential clinical impact of these interactions. Consider the relevance of some drug-drug
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https://hivmanagement.ashm.org.au/drug-drug-interactions-in-patients-with-hiv-infection/
https://clinicalinfo.hiv.gov/sites/default/files/guidelines/documents/adult-adolescent-arv/guidelines-adult-adolescent-arv.pdf (Page M-1 onwards)

### **SELF-ASSESSMENT – BENCHMARK ANALYSIS**



Medication review is a systematic assessment of a patient's medication management with the aim of optimising the quality use of medicines and minimising medication-related problems including drug-drug interactions.

The National Safety and Quality Health Service Standards describe three types of medication reviews (refer to https://www.cec.health.nsw.gov.au/\_\_data/assets/pdf\_file/0016/554110/A-Guide-to-Medication-Reviews-for-NSW-Health-Services-2019.PDF):



Prescription or medication order review: a review of individual medication orders and / or prescription validity.



Concordance or medication adherence review: a review of a patient's medicine-taking behavior.



## Clinical medication review:

a comprehensive review of a patient's medicines in the context of their clinical condition/s.

A medication order review is the simplest review type and a clinical medication review the most comprehensive. Key outcomes from a medication review include the identification of both actual and potential medication-related problems with the aim of implementing actions prioritised according to their risk and urgency.

The following self-assessment is an opportunity to benchmark your own practice against some of the recommendations from the Clinical Excellence Commission 2019 Guide to Medication Reviews for NSW Health Services.

Please rate the following statements (tick), taking into consideration your own practice systems and processes, and the patient cases that you have selected.

KEY: 1=Never; 2=Seldom; 3=About half the time; 4=Usually; 5=Always	
Confirm what medicines the patient currently takes or uses, including regular, over-the-counter and complementary medicines as well as non-oral dose forms.	1 2 3 4 5
Ask the patient about any new or recently stopped medicines.	1 2 3 4 5
Confirm how the patient takes their medicines, including dose, route, frequency and formulation.	1 2 3 4 5
Assess the patient's medication adherence, and how they physically manage their medicines e.g. storage, use of dose administration aids.	1 2 3 4 5
Appropriately access patient-specific clinical data such as laboratory investigations, clinical observations and progress notes.	1 2 3 4 5
Determine the patient's satisfaction with the outcomes from their medicines, this may also involve exploring the patient's beliefs about their medicines.	1 2 3 4 5
Consider the continuing need for medicines – according to guidelines or best practice.	1 2 3 4 5
Consider patient's goals of treatment.	1 2 3 4 5
Identify suboptimal treatment or treatment that is missing.	1 2 3 4 5
Identify actual or potential adverse drug events.	1 2 3 4 5
Identify clinically significant drug interactions and contraindications.	1 2 3 4 5
Review patients' kidney and liver function.	1 2 3 4 5
Consistently and comprehensively document patients' medication history.	1 2 3 4 5
Easily able to retrieve patients' medication history.	1 2 3 4 5

### **PATIENT CONSULTATION PLANNING**



This section will assist you in the planning of medication reviews for your patients.

#### Please review these HIV-specific resources:

The challenge of HIV treatment in an era of polypharmacy:

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6996317/pdf/JIA2-23-e25449.pdf

Polypharmacy and potential drug-drug interactions for people with HIV in the UK from the Climate-HIV database:

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7497154/pdf/HIV-21-471.pdf

The Geriatric Syndromes: Frailty, Multimorbidity and Polypharmacy:

https://hivmanagement.ashm.org.au/ageing-with-hiv-infection/the-geriatric-syndromes-frailty-multimorbidity-and-polypharmacy/

Polypharmacy in older adults with HIV infection - effects on the brain:

https://agsjournals.onlinelibrary.wiley.com/doi/epdf/10.1111/jgs.17569

A patient-centred approach to deprescribing antiretroviral therapy in people living with HIV:

https://academic.oup.com/jac/article/75/12/3425/5880204

#### Please review these general resources on medication reviews:

A Guide to Medication Reviews for NSW Health Services:

https://www.cec.health.nsw.gov.au/\_\_data/assets/pdf\_file/0016/554110/A-Guide-to-Medication-Reviews-for-NSW-Health-Services-2019.PDF

Drug interaction resources: mind the gaps:

https://www.nps.org.au/australian-prescriber/articles/drug-interaction-resources-mind-the-gaps

Deprescribing Tools:

https://www.nswtag.org.au/deprescribing-tools/

After reviewing these resources, identify three quality improvements which you will be able to implement with the five patients you identified earlier.

1.	
2.	
3.	



#### **SOME KEY RECOMMENDATIONS FROM ASHM:**



A full medication review by either an experienced HIV pharmacist or clinician should occur at each clinic or hospital encounter.



Clinicians should be proactive in the cessation of unnecessary medications, and monitoring for drug-drug interactions when either starting, changing or discontinuing any medication.



HIV care providers should practise heightened awareness of polypharmacy (5 or more medications) in older people with HIV infection, given the associated negative health outcomes.



The medication history must also include over-the-counter medications, herbal supplements and lifestyle related substance use.



Older people with HIV infection are strongly encouraged to engage with evidence-based memory aids for medications (i.e. pillboxes, medication calendars, family support) in order to optimise medication and ART adherence.



Clinicians are advised to encourage adherence and screen for potential barriers, including reduced health literacy, cost, neurocognitive impairment, and severe menopausal symptoms.



ART can be both responsible for and vulnerable to drug-drug interactions; there are readily available online drug-drug interaction resources which should be accessed for all people with HIV infection receiving other medications.

Reference: https://hivmanagement.ashm.org.au/ageing-with-hiv-infection/the-geriatric-syndromes-frailty-multimorbidity-and-polypharmacy/

The University of Liverpool provides an online tool to check for interactions between anti-HIV drugs, other medications and recreational drugs. Visit **www.hiv-druginteractions.org/checker** or download the Liverpool HIV iChart app for **iPhone** or **Android.** 



When it is necessary to prescribe interacting drugs, vigilance would need to be applied in monitoring for therapeutic efficacy and/or concentration-related toxicities.



You may wish to empower your patients by asking them to keep a list of all the medicines and drugs they take and bring the list at every visit.



Contact the same five patients you identified earlier, asking them to visit the practice for re-assessment and full medication review.

Following recall consultation with each of these five patients, record any changes made to their management based on your learning and improvement objectives.

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### **PATIENT 1 (CONTINUED)**

How has age, cultural and social background influenced the way you counsel and manage this patient?
What information did you provide your patient for further reading? How have you empowered your patient to be aware of drug-drug interactions?
What medication adherence recommendations/suggestions did you provide?
How will you plan for the next medication review? Will you conduct it at your practice or refer the patient to a pharmacist?
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Contact the same five patients you identified earlier, asking them to visit the practice for re-assessment and full medication review.

Following recall consultation with each of these five patients, record any changes made to their management based on your learning and improvement objectives.

### **PATIENT 2**

PATIENT 2	
After completing the full medication review, how does that compare with what is in the patient's records differences? Were there any herbal remedies, supplements and/or over-the-counter products that you was a supplement of the compare with what is in the patient's records differences?	
uniterences. Were there any herbacremedies, supplements and or over the counter products that you t	were not aware or.
What are the actual and/or potential drug-drug interactions identified (if any)?	
What recommendations did you make in terms of medication changes? Did you make any proactive depre What were they? How do you intend to monitor the patient in relation to the medication changes?	escribing decisions?
What counselling/advice did your provide in terms of any over-the-counter medications, herbal supple related substance use to avoid/minimise?	ments and lifestyle



### PATIENT 2 (CONTINUED)

How has age, cultural and social background influenced the way you counsel and manage this patient?
What information did you provide your patient for further reading? How have you empowered your patient to be aware of drug-drug interactions?
What medication adherence recommendations/suggestions did you provide?
How will you plan for the next medication review? Will you conduct it at your practice or refer the patient to a pharmacist?
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Contact the same five patients you identified earlier, asking them to visit the practice for re-assessment and full medication review.

Following recall consultation with each of these five patients, record any changes made to their management based on your learning and improvement objectives.

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### **PATIENT 3 (CONTINUED)**

How has age, cultural and social background influenced the way you counsel and manage this patient?
What information did you provide your patient for further reading? How have you empowered your patient to be aware of drug-drug interactions?
What medication adherence recommendations/suggestions did you provide?
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Following recall consultation with each of these five patients, record any changes made to their management based on your learning and improvement objectives.

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### PATIENT 4 (CONTINUED)

How has age, cultural and social background influenced the way you counsel and manage this patient?
What information did you provide your patient for further reading? How have you empowered your patient to be aware of drug-drug interactions?
What medication adherence recommendations/suggestions did you provide?
How will you plan for the next medication review? Will you conduct it at your practice or refer the patient to a pharmacist?
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Contact the same five patients you identified earlier, asking them to visit the practice for re-assessment and full medication review.

Following recall consultation with each of these five patients, record any changes made to their management based on your learning and improvement objectives.

A 60 1 10 10 10 10 10 10 10 10 10 10 10 10	
	view, how does that compare with what is in the patient's records? What are the specifi
differences? Were there any herbal rer	nedies, supplements and/or over-the-counter products that you were not aware of?
What are the actual and/or notential d	rug-drug interactions identified (if any)?
	ag arag interactions facilities (if arry).
	n terms of medication changes? Did you make any proactive deprescribing decisions? monitor the patient in relation to the medication changes?
What counselling/advice did your prov	vide in terms of any over-the-counter medications, herbal supplements and lifestyle
	vide in terms of any over-the-counter medications, herbal supplements and lifestyle ise?
What counselling/advice did your prov related substance use to avoid/minim	



### **PATIENT 5 (CONTINUED)**

How has age, cultural and social background influenced the way you counsel and manage this patient?
What information did you provide your patient for further reading? How have you empowered your patient to be aware of drug-drug interactions?
What medication adherence recommendations/suggestions did you provide?
How will you plan for the next medication review? Will you conduct it at your practice or refer the patient to a pharmacist?
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### **CLOSING REFLECTION**



#### **DEVELOPING A SYSTEMS-BASED APPROACH TO PATIENT SAFETY**

Now that you have completed the program, what approach to patient safety will you implement to improve the quality of patient care in your practice in future (e.g. checklists, timeframes for recall and ongoing patient review)?

Identify three areas of improvement which are most important for your practice to address in regards to care of people living with HIV, and include the following actions:

Three areas of improvement which are most important for your practice to address:
How will these occur?
Who is responsible?
How will these be reviewed?
How will success be measured?

# **EVALUATION OF PROGRAM**



Please rate to what degree the learning outcomes of the program w	ere met:		
Evaluate the gaps between your practice and recommendations from recognised sources of guidance in the area of drug-drug interactions	Not met	Partially met	Entirely met
Determine appropriate regular medication review strategies to provide optimisation of therapy in people living with HIV.	Not met	Partially met	Entirely met
Determine appropriate deprescribing strategies to provide optimisation of therapy in people living with HIV.	Not met	Partially met	Entirely met
Identify suitable resources for people living with HIV to enhance their ability to understand the implications of drug-drug interactions.	Not met	Partially met	Entirely met
Review changes that are required to improve the quality of care for people living with HIV in your practice.	Not met	Partially met	Entirely met
Please rate to what degree this CPD activity met your expectation a	bout:		
<b>Content</b> : Current, contemporary, evidence-based, and relevant to general practice	Not met	Partially met	Entirely met
<b>Delivery</b> : Engaging/interactive, e.g., with opportunity for questions and feedback.	Not met	Partially met	Entirely met
Comments:			
Nould you likely recommend this CPD activity to a colleague?			
Yes No Why?			
Nould you likely change anything in your practice as a result of this	CPD activity?		
Yes No Why?			

### **EVALUATION OF PROGRAM**



General comments and feedba	ack:		

Quality improvement is an integral component of the RACGP CPD Program. If you have a concern about the quality of this activity, please submit your feedback online to your local RACGP office.

#### **HOW TO SAVE AND SUBMIT THIS FORM**

SAVE: Download and save the PDF to your desktop. If you do not complete the Module in one sitting,

you can save and complete it later. To save the Module as you go, click File > Save

SUBMIT: Once the Module is completed, attach the saved PDF in a new email and send to

Lateral Connections: education@lateralconnections.com.au

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