

Maximizing Safety and Efficacy in Methadone Dosing Among Hospice Patients

Storyboard

Dr. Mary Lynn McPherson

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Graduate Education in Palliative Care

University of Maryland School of Pharmacy

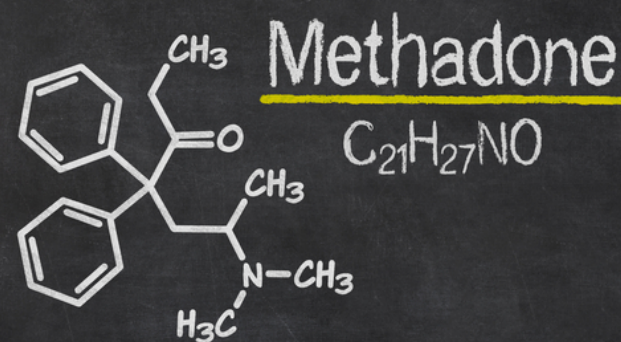
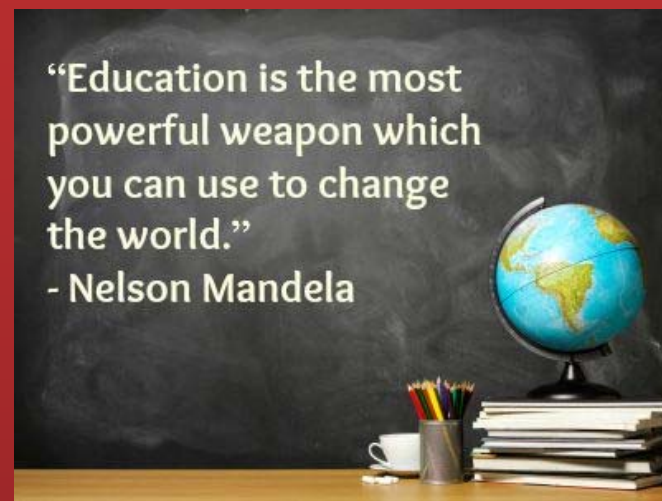


- “Maximizing Safety and Efficacy in Methadone Dosing Among Hospice Patients” is a three week, online course designed for independent licensed practitioners employed by Seasons Hospice & Palliative Care.
- The course is highly interactive, providing plenty of opportunity to practice skills in determining a patient’s risk status prior to starting methadone therapy, determining a starting dose (in both opioid-naïve and opioid-tolerant patients) and how to monitor response to therapy. Students will work in groups and individually to master these skills. Plenty of opportunities will be given to practice, practice, practice!!

Course Description

“Education is the most powerful weapon which you can use to change the world.”

- Nelson Mandela



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Who's Who?

68% of those surveyed were VERY interested in using methadone as a first line opioid in advanced illness.



▪ Main Stars

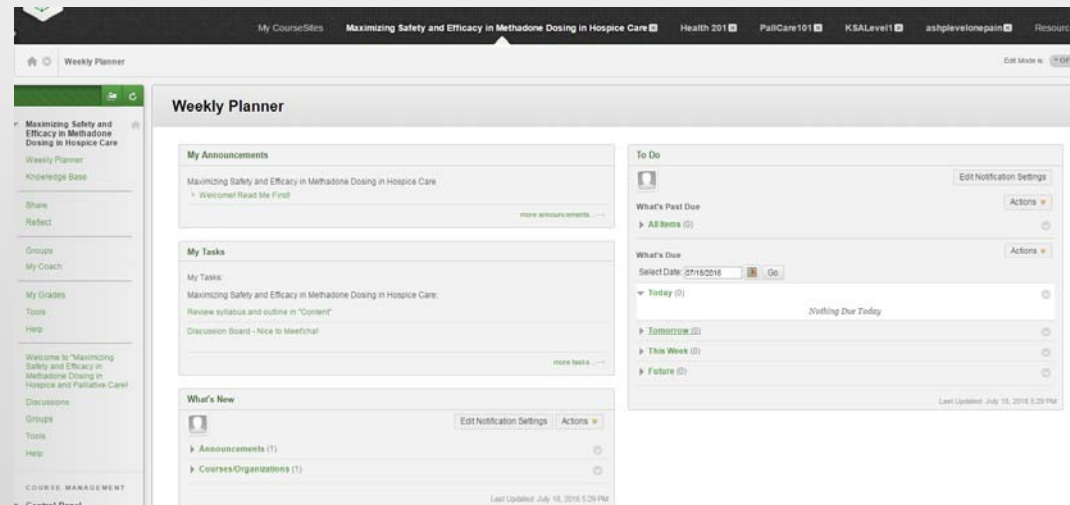
- Independent licensed practitioners employed by Seasons Hospice & Palliative Care
 - 160 physicians
 - 30 advanced practice nurses
- Demographics
 - Average time as a practitioner: 11-20 years
 - Average time practicing in hospice and palliative care: 6-10 years
 - 42% Board Certified in Hospice and Palliative Care
 - 73% of physicians are certified as a Hospice Medical Director

▪ Director

- Dr. Mary Lynn McPherson


▪ Supporting Role

- Coursesites.com



Learning Objectives

When assessed on knowledge of methadone therapy in seven different domains, percent correct answers ranged from 19 to 69%.
Average was 35% correct.

- 
- **Module 1 – Understanding Methadone**
 - **TPO:** Given an actual or simulated patient, assess risk status for methadone therapy and determine whether patient is an appropriate candidate or not per the Seasons protocol.
 - **Module 2 – Dosing Methadone**
 - **TPO:** Given an actual or simulated patient with pain, determine a starting dose of methadone consistent with Seasons' protocol with **100%** accuracy.
 - **Module 3 – Monitoring Methadone**
 - **TPO:** Given an actual or simulated patient receiving methadone for pain, describe a monitoring plan consistent with Seasons' protocol with **100%** accuracy.

Learning Objectives – What You’ll Be Able to DO!

- Module 1 – Understanding Methadone

- TPO: Given an actual or simulated patient, assess risk status for methadone therapy and determine whether patient is an appropriate candidate or not per the Seasons protocol.



- Module 2 – Dosing Methadone

- TPO: Given an actual or simulated patient with pain, determine a starting dose of methadone consistent with Seasons’ protocol with 100% accuracy.



- Module 3 – Monitoring Methadone

- TPO: Given an actual or simulated patient receiving methadone for pain, describe a monitoring plan consistent with Seasons’ protocol with 100% accuracy.



- Module 1 – Understanding Methadone

- Based on your knowledge of risk factors for methadone-induced harm, you will be able to confidently **decide** if a patient is an appropriate candidate for methadone or not.

- Module 2 – Dosing Methadone

- Based on your knowledge of the patient, you will be able to **calculate** a starting dose of methadone for opioid-naive patients, AND opioid-tolerant patients (including timing).

- Module 3 – Monitoring Methadone

- Once starting a patient on methadone, you will know how to **question** staff on follow-up and how to **adjust** therapy based on their response.

Module 1 – Understanding Methadone

- Introduction and Welcome – Discussion board
- Read American Pain Society methadone guidelines
- Read Seasons methadone protocol, take quiz on content
- View video narrated lectures, take quiz on content
- Review assigned simulated case of patient who may start methadone
Determine case resolution. Post to discussion board
- Read and respond to a different group's case resolution
- Discussion board – discussion questions
- Discussion board – muddiest point

A graphic consisting of an orange trapezoidal shape with a white border, tilted slightly to the right. Inside the shape, the words "MODULE #1" are written in a bold, white, sans-serif font with a slight drop shadow effect.

MODULE #1

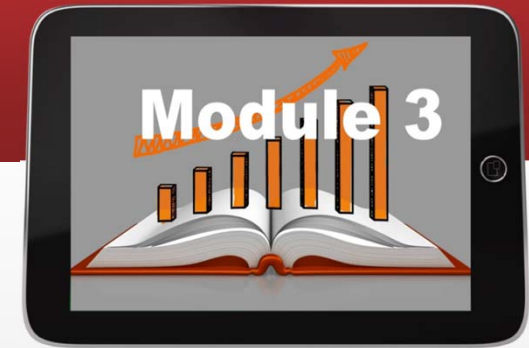
Module 2 – Dosing Methadone

- View video narrated lectures, take quiz on content
- Discussion board – discussion questions
- Work through self-paced optional tutorial on opioid conversion calculations
- Each group works through 10 case problem set; group must agree; post to discuss board
- Read and respond to a different group's problem set case resolution
- Individual problem set; submit solutions to problem set with rationale
- Discussion board – muddiest point



Module 2

Module 3 – Monitoring Methadone



- View video narrated lectures, take quiz on content
- Discussion board – discussion questions
- “Find the error” assignment – cases that contain errors; correct and post on discussion board
- Each group works through 10 case problem set; group must agree; post to discuss board
- Read and respond to a different group’s problem set case resolution
- Individual problem set; submit solutions to problem set with rational
- Discussion board – muddiest point

Guiding Principles - 1

Gaining Attention

Informing Learners of the Objective

Stimulating Recall of Prior Learning

Presenting the Stimulus

Providing Learning Guidance

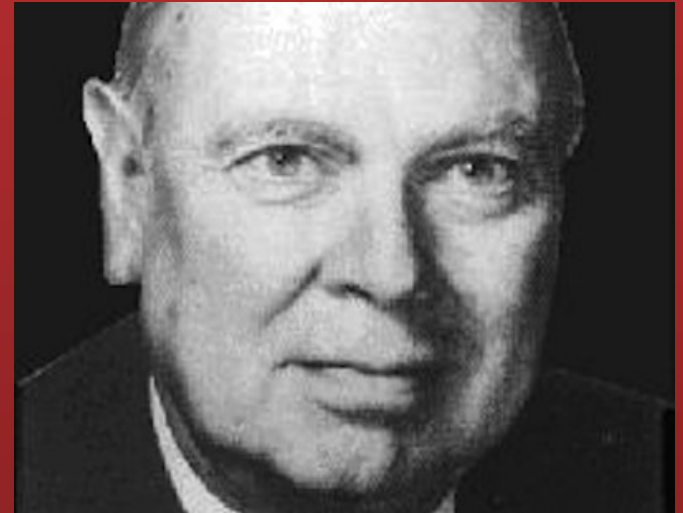
Eliciting Performance

Providing Feedback

Assessing Performance

Enhancing Retention and Transfer

Robert M. Gagné 1916-2002



Gagné, R.M., Wager, W.W., Golas, K.C., & Keller, J.M. (2005). *Principles of instructional design (5th ed.)*. Belmont, CA: Wadsworth/Thomson Learning.

Behaviorism and Constructivism



<https://www.pinterest.com/pin/304696731010656265/>

Guiding Principles - 2

Behaviorism

Learner is passive; learns via external processes (e.g., positive reinforcement)

Lecture
Drill and practice
Rote learning
Multiple choice questions

Constructivism

Learner builds on personal experience (internal), active and social in the learning process

Discovery
Collaborative group work
Scaffolding
Self-guided learning based on personal experience
Peer grading/review

<https://pypinub.wordpress.com/2014/11/09/four-learning-theories-behaviorism-cognitivism-constructivism-and-connectivism/>

Keller's ARCS Model

Identify benefits
Relate to work situations
Link to learner experiences

Real patient cases
Stimulate intellectual curiosity
Audio/video, readings

Attention	Relevance	Confidence	Satisfaction
<p>Perceptual Arousal</p> <p>Provide novelty and surprise</p>	<p>Goal Orientation</p> <p>Present objectives and useful purpose of instruction and specific methods for successful achievement</p>	<p>Learning Requirements</p> <p>Inform students about learning and performance requirements and assessment criteria</p>	<p>Intrinsic Reinforcement</p> <p>Encourage and support intrinsic enjoyment of the learning experience</p>
<p>Inquiry Arousal</p> <p>Stimulate curiosity by posing questions or problems to solve</p>	<p>Motive Matching</p> <p>Match objectives to student needs and motives</p>	<p>Successful Opportunities</p> <p>Provide challenging and meaningful opportunities for successful learning</p>	<p>Extrinsic Rewards</p> <p>Provide positive reinforcement and motivational feedback</p>
<p>Variability</p> <p>Incorporate a range of methods and media to meet students' varying needs</p>	<p>Familiarity</p> <p>Present content in ways that are understandable and that related to the learners' experiences and values</p>	<p>Personal Responsibility</p> <p>Link learning success to students' personal effort and ability</p>	<p>Equity</p> <p>Maintain consistent standards and consequences for success</p>

Contextualize assessment exercises and scenarios.
Link learner success to efforts.

Track completion of learning and praise performance.
Reinforce learners' successes.

https://en.wikipedia.org/wiki/File:ARCS_Model_Components_Table.jpg



PROPS!!

Reference Materials

Videos / Tutorials

Practice Problem Sets

Module 1 – Understanding Methadone
TPO: Given an actual or simulated patient, assess risk status for methadone therapy and determine whether patient is an appropriate candidate or not per the Seasons protocol.



Module 1 – Understanding Methadone
Based on your knowledge of risk factors for methadone-induced harm, you will be able to confidently **decide if a patient is an appropriate candidate for methadone or not.**



Act	Description	Supports Enabling Objective(s)
1	Announcements – READ ME FIRST! Introductions!	
1	Read American Pain Society guidelines on methadone	A, C
1	Read Seasons methadone protocol	A, B, D
1	Take quiz on Seasons methadone protocol	D
1	Watch narrated video presentations with embedded self-assessment quizzes	A, B, E
1	Take quiz on video presentation content	A, B, E
1	Consider simulated patient case; work with group to solve case.	A, B,
1	Post group response to case to discussion board	A, B, D, E
1	Review and post comments about other groups response to their case	A, B, D, E

A. Describe the pharmacokinetics of methadone including absorption, distribution, metabolism and excretion.

B. Describe the pharmacodynamics of methadone including three mechanisms of action, and adverse effects (usual opioid adverse effects and methadone-specific adverse effects).

C. Describe the American Pain Society recommendations for methadone dosing.

D. Describe the Seasons policy for methadone dosing.

E. List five strong methadone enzyme inhibiting medications and five strong methadone enzyme inducing medications.

Module 2 – Dosing Methadone

TPO: Given an actual or simulated patient with pain, determine a starting dose of methadone consistent with Seasons' protocol with 100% accuracy.



Module 2 – Dosing Methadone

Based on your knowledge of the patient, you will be able to **calculate** a starting dose of methadone for opioid-naïve patients, AND opioid-tolerant patients (including timing).



Act	Description	Supports Enabling Objective(s)	
2	Watch narrated video recording, white board presentation demo with embedded self-assessment quizzes	A, B	A. Define acceptable methadone starting dose range per Seasons protocol. B. Demonstrate consideration of variables that affect risk status when prescribing methadone in an opioid-naïve patient. C. Given an actual or simulated patient receiving opioids, calculate an equivalent total daily dose in oral morphine equivalents. D. After calculating a dose of methadone in an opioid-tolerant patient, adjust the calculated dose to allow for enzyme inducing and enzyme inhibiting medications. E. Titrate methadone dose based on patient response to therapy.
2	Take quiz based on narrated video recording	A, B	
2	Post to discussion board (discussion questions)	A, B	
2	Work through self-paced opioid conversion calculation tutorial	C	
2	Group works on assigned 10 problem math set; post to discussion	B, C, D, E	
2	Review problem set from a different group and post feedback	B, C, D, E	
2	Complete individual problem set	A, B, C, D, E	

Module 3 – Monitoring Methadone
TPO: Given an actual or simulated patient receiving methadone for pain, describe a monitoring plan consistent with Seasons’ protocol with 100% accuracy.



Module 3 – Monitoring Methadone
Once starting a patient on methadone, you will know how to **question staff on follow-up and how to **adjust** therapy based on their response.**



Act	Description	Supports Enabling Objective(s)	
3	View narrated video presentation with embedded self-assessment quiz	A, B	<ul style="list-style-type: none"> A. Describe the recommended monitoring plan for nursing. B. Describe the recommended monitoring plan for family/caregivers. C. Given follow-up monitoring data for a patient new to methadone, recommend corrective action if appropriate.
3	Post to discussion board (discussion questions)	A, B	
3	“Find the error” assignment – three case presentations with errors as compared to Seasons methadone protocol. Correct errors, post to discussion (as a group)	A, B, C	
3	Group solves problem set of 10 cases; post to discussion board	A, B, C	
3	Review problem set from a different group and comment on discussion board	A, B, C	
3	Individual problem set; submit solution with rationale	A, B, C	

Learning Objectives – What You’ll Be Able to DO!

- Module 1 – Understanding Methadone

- TPO: Given an actual or simulated patient, assess risk status for methadone therapy and determine whether patient is an appropriate candidate or not per the Seasons protocol.

- Module 2 – Dosing Methadone

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- Module 3 – Monitoring Methadone

- Once starting a patient on methadone, you will know how to **question** staff on follow-up and how to **adjust** therapy based on their response.

ARCS Motive Matching (match objectives to student needs and motives)



Announcements!

**ARCS Attention
(perceptual arousal)**



Welcome to the Course! Read me FIRST!

We have an exciting three week journey ahead of us! My name is Dr. Lynn McPherson, your cruise director! First things first - you need to be able to navigate this online "classroom." If you look to the left you will see several links - Announcements, Course Description/Learning Outcomes, etc.

Check announcements every day - that's the home page and where you'll find the latest information about what's going on with the course.

If you click on "Course Description/Learning Outcomes" you'll be able to read exactly that - a description of the course, and the learning objectives for each module.

The link to "Modules / Learning Materials" is where the meat of the course lives. This is where I will post readings, activities you need to complete, assignments, and so forth. You should check this folder at the beginning of each week, and as often as needed to assure you have completed all the assignments for the week.

We will do group work each week, and I will post your group assignment.

Discussions is the where we hold our conversations! This is where you should go immediately after this THIS announcement! The first discussion thread you will see is how to contact me. The second is an opportunity for us to each introduce ourselves. Please introduce yourself, and say hello to your classmates!

My Grades and My Instructor are pretty straight forward!

You should spend an hour or so exploring this web site so you know where everything is located! If you have a question you are welcome to post to the Discussion Board. I will check in at least once a day, usually more than once!

I look forward to working with you for the next few weeks!

Lynn McPherson

Maximizing Safety and Efficacy in Methadone Dosing in Hospice Care

Announcements!

Course Description / Learning Outcomes

Modules / Learning Materials

Groups

Discussions

My Grades

My Instructor

Tools

Help

COURSE MANAGEMENT

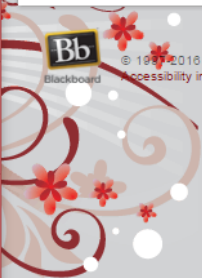
Control Panel

Content Collection

Methadone101
All Courses Content
All Organizations Content

Course Tools

Achievements
Announcements
Blogs
Contacts
Course Calendar
Course Messages
CourseSites Live



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Accessibility information Installation details



Course Description / Learning Outcomes

- Build Content
- Assessments
- Tools
- Partner Content



Course Description!

"Maximizing Safety and Efficacy in Methadone Dosing Among Hospice Patients" is a three week, online course designed for independent licensed practitioners by Seasons Hospice & Palliative Care. The course is highly interactive, providing plenty of opportunity to practice skills in determining a patient's risk status prior to starting methadone therapy, determining a starting dose (in both opioid-naive and opioid-tolerant patients) and how to monitor response to therapy. Students will work in groups and individually to master these skills. Plenty of opportunities will be given to practice, practice, practice!!



Learning Objectives

Terminal Performance Objective 1: Given an actual or simulated patient, assess risk status for methadone therapy and determine whether patient is an appropriate candidate or not per the Seasons protocol.

- Describe the pharmacokinetics of methadone including absorption, distribution, metabolism and excretion.
- Describe the pharmacodynamics of methadone including three mechanisms of action, and adverse effects (usual opioid adverse effects and methadone-specific adverse effects).
- Describe the American Pain Society recommendations for methadone dosing.
- Describe the Seasons policy for methadone dosing.
- List five strong methadone enzyme inhibiting medications and five strong methadone enzyme inducing medications.

Terminal Performance Objective 2: Given an actual or simulated patient with pain, determine a starting dose of methadone consistent with Seasons' protocol with 100% accuracy.

- Define acceptable methadone starting dose range per Seasons protocol.
- Demonstrate consideration of variables that affect risk status when prescribing methadone in an opioid-naive patient.
- Given an actual or simulated patient receiving opioids, calculate an equivalent total daily dose in oral morphine equivalents.
- After calculating a dose of methadone in an opioid-tolerant patient, adjust the calculated dose to allow for enzyme inducing and enzyme inhibiting medications.
- Titrate methadone dose based on patient response to therapy.

Terminal Performance Objective 3: Given an actual or simulated patient receiving methadone for pain, describe a monitoring plan consistent with Seasons' protocol with 100% accuracy.

- Describe the recommended monitoring plan for nursing.
- Describe the recommended monitoring plan for family/caregivers.
- Given follow-up monitoring data for a patient new to methadone, recommend corrective action if appropriate.

ARCS (Relevance) – Goal Orientation

Gagne – Informing learners of the objective

Maximizing Safety and Efficacy in Methadone Dosing in Hospice Care

Announcements!

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COURSE MANAGEMENT

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Content Collection

Methadone101

All Courses Content

All Organizations Content

Course Tools

Achievements





Discussion Board

Forums are made up of individual discussion threads that can be organized around a particular subject. Create Forums to organize discussions. [More Help](#)

Create Forum

Search ↑↓

Forum	Description	Total Posts	Unread Posts	Total Participants
<input type="checkbox"/> Contacting the Instructor	Hello - you are welcome to email me (mmcphers@rx.umaryland.edu) at any time, and I will respond within 24 hours. You are also welcome to call me on my cell (443-822-6036) between 6 am and 11 pm US East Coast time. Dr. Lynn McPherson	0	0	0
<input type="checkbox"/> Introduce Yourself!	Welcome to our online learning adventure! We will be making frequent use of the discussion board, so this is a great place to jump in! Please start a new thread and provide the following: Your name Your site Your discipline A little about your experience in hospice and palliative care Your thoughts on the three biggest barriers to the safe and effective use of methadone in hospice and palliative care Please check back often and respond to your colleagues!	1	0	1
<input type="checkbox"/> Module 1 Discussion Forum	Consider the following questions and post your response. Please respond to at least one other student. 1. Under what circumstances would you consider ordering an EKG in a hospice patient for whom you wanted to prescribe methadone? 2. What electrolyte imbalances increase the risk for methadone associated toxicity? 3. List three medications that increase risk of methadone-associated QTc prolongation? What is the risk of QTc prolongation?	0	0	0
<input type="checkbox"/> Module 1 - Muddiest Points	If anything remains unclear from Module 1, please post your question here.	0	0	0
		20		

Constructivist – tapping into prior knowledge. Gagne – stimulating recall of prior learning

Gagne – gaining attention (introductory activity that engages learner)

- Maximizing Safety and Efficacy in Methadone Dosing in Hospice Care
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 - Modules / Learning Materials
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- Discussions
- My Grades
- My Instructor
- Tools
- Help
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 - Evaluation
 - Grade Center
 - Users and Groups
 - Customization



Thread: Hello from Lynn McPherson!

- Maximizing Safety and Efficacy in Methadone Dosing in Hospice Care
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 - Methadone101
 - All Courses Content
 - All Organizations Content
 - Course Tools
 - Achievements
 - Announcements
 - Blogs
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 - Course Calendar

Select: All None
Message Actions Expand All Collapse All

1 Posts in this Thread 0 Unread



Mary Lynn McPherson
Hello from Lynn McPherson!

ARCS Attention (perceptual arousal)

Hello - I am your instructor for this three week course and I'm very excited to be spending this time with you!

I am a clinical pharmacist, and I work at the national level. My "real" job is serving as a Professor at the University of Maryland School of Pharmacy in Baltimore! I often visit the Seasons Baltimore office however!

I have worked in hospice and palliative care for 30 years - since I graduated from Pharmacy School!

I think the biggest barriers to using methadone are lack of practitioner knowledge, fear about lack of monitoring, and lack of accessible transitions in care.

Please call me Lynn. My email is lmcpherson@seasons.org and my cell phone is 410-289-6036. You can email anytime and I respond within 24 hours. You can call my cell between 6 am and 11 pm east coast time, unless it's an emergency.

I look forward to working with all of you during the next three weeks!

Lynn

ARCS Attention (inquiry arousal)

Reply

Select: All None
Message Actions Expand All Collapse All



Success: Quiz on Seasons Methadone Protocol Options Edited.

Module 1 - Understanding Methadone

Build Content | Assessments | Tools | Partner Content



Assigned Readings

Attached Files: Chou APS Methadone Safety Clinical Practice Guideline J Pain 2014.pdf (468.523 KB) | Seasons Methadone Protocol.doc (142 KB)

The American Pain Society guidelines on methadone dosing.
Seasons Hospice & Palliative Care methadone protocol.



Narrated Presentation - Understanding Methadone

Attached Files: Understanding Methadone Module 1.ppt (2.969 MB) | Understanding Methadone Module 1 Handout.pdf (1.737 MB)

Please download and listen to this presentation. You may also print handouts posted here as well.



Group Case

Attached Files: Module 1 Case Set.docx (13.258 KB) | Module 1 Case Set Group 2.docx (13.28 KB) | Module 1 Case Set Group 3.docx (13.282 KB)

Please download this case, and work with your group to answer all questions. Grading rubric is also posted.



Discussion Board

Please go to the discussion board and answer the questions posted.



Quiz on Seasons Methadone Protocol

This quiz covers content on the Seasons Hospice & Palliative Care methadone protocol. Please be sure you've reviewed the protocol before starting this quiz. You must pass this quiz; passing is 90% correct. Please complete this quiz by Day 3 of week 1.



RESEARCH EDUCATION TREATMENT ADVOCACY

The Journal of Pain, Vol 15, No 4 (April), 2014; pp 321-337 Available online at www.jpain.org and www.sciencedirect.com

Methadone Safety Guidelines

Methadone Safety: A Clinical Practice Guideline From the American Pain Society and College on Problems of Drug Dependence, in Collaboration With the Heart Rhythm Society

Roger Chou,* Ricardo A. Cruciani,† David A. Fiellin,‡ Peggy Compton,§ John T. Farrar,|| Mark C. Haigney,¶ Charles Inturrisi,** John R. Knight,†† Shirley Otis-Green,‡‡ Steven M. Marcus,§§ Davendra Mehta,|||| Marjorie C. Meyer,*** Russell Portenoy,††† Seddon Savage,**** Eric Strain,†††† Sharon Walsh,††††† and Lonnie Zeltzer§§§



Seasons Hospice & Palliative Care Honoring Life - Offering Hope 3001

Methadone Protocol

PURPOSE

To safely start, convert or increase a dose on patients who require methadone.

POLICY

- Nurses and physicians are required to seek consultation prior to dosing from experts in methadone management prior to **initiating, converting or increasing** a dose of methadone on patients.
- One of the following people must be consulted:
 - Dr. Mary Lynn McPherson, PharmD, National Pharmacy Consultant
 - Dr. Balu Natarajan, MD, Chief Medical Officer
 - Dr. Sanjay J. Amin, MD, Medical Director for Illinois
 - Any expert designated by one of the above.

Gagne – Present the stimulus (content materials)

ARCS (Variability) various media

Behaviorism - lecture

Constructivism – collaborative group work; learning is social; scaffolding

ARCS Relevance - Familiarity (present content in relatable way – cases)

Gagne – Assessing performance



Props!

pass this quiz; passing is 90% correct



Success: Quiz on Seasons Methadone Protocol Options Edited.

Module 1 - Understanding Methadone

Build Content Assessments Tools Partner Content



Assigned Readings

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Discussion Board

Please go to the discussion board and answer the questions posted.



Quiz on Seasons Methadone Protocol

This quiz covers content on the Seasons Hospice & Palliative Care methadone protocol. 90% correct. Please complete this quiz by Day 3 of week 1.

Gagne – Providing learning guidance (case examples)

Case 1

- BL is a 54 year old woman with a 10 year history of low back pain, now failed back.
 - o Did not respond to acetaminophen, NSAID
 - o Adverse effects to gabapentin and duloxetine
- Not taking any medications that interact with methadone, and is opioid-naïve.
- Doesn't want a short-acting opioid because she works in an office and is afraid of "peak" effect.
- PCP asks for dosing recommendation.

Constructivism – Peer grading/review

- Maximizing Safety and Efficacy in Methadone Dosing in Hospice Care
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is quiz; passing is



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Module 1 - Understanding Methadone

Build Content Assessments Tools Partner Content



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Gagne – Eliciting performance (practice activities)



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Quiz on Seasons Methadone Protocol

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Maximizing Safety and Efficacy in Methadone Dosing in Hospice Care

Announcements!

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Maximizing Safety and Efficacy in Methadone Dosing Among Hospice Patients

Module 1 – Group Practice Problems

Case - Part 1

Mrs. DA is a 54-year-old woman who has Stage 4 breast cancer with mediastinal, right axillary node, and bone (rib) metastases. She has already had three separate courses of chemotherapy and radiation therapy to her breast, mediastinum and right axilla. She has known soft tissue and lymph node metastases in the right axilla, as well as an esophageal stricture from tumor in her mediastinum. She has had several esophageal dilations. Mrs. DA has moderately severe pain in her chest and right arm.

Mrs. DA has a son in the military who is supportive, but is often required to be out of town. She also has a supportive sister, who is a registered nurse, who lives approximately two hours' drive out of town. Mrs. DA is plagued by concerns – she worries about her ability to cope with her disease as it progresses, and she does not want to be a burden to her family. She is also concerned about her finances, and worries that she may not be able to pay for the nutritional supplements and alternative therapies that her friends have recommended.

Q1. What additional information would you like to better evaluate the pain complaint from Mrs. DA?

Q2. What lab data would you like to better assess patient's risk status for methadone therapy?

Gagne – Stimulating recall of prior learning

Evaluation Rubric: GROUP CASE STUDY

1. CONTENT (applies to Presentation plus Written report)

Ninae:

	LEVEL 4	LEVEL 3	LEVEL 2	LEVEL 1
Identification of the Main Issues/ Problems	Identifies & understands all of the main issues in the case study	Identifies and understands most of the main issues in the case study	Identifies and understands some of the issues in the case study	Identifies and understands few of the issues in case study
Analysis of the Issues	Insightful and thorough analysis of all the issues	Thorough analysis of most of the issues	Superficial analysis of some of the issues in the case	Incomplete analysis of the issues
Comments on effective solutions/strategies (The solution may be in the case already or proposed by you)	Well documented, reasoned and pedagogically appropriate comments on solutions, or proposals for solutions, to all issues in the case study	Appropriate, well thought out comments about solutions, or proposals for solutions, to most of the issues in the case study	Superficial and/or inappropriate solutions to some of the issues in the case study	Little or no action suggested, and/or inappropriate solutions to all of the issues in the case study
Links to Course Readings and Additional Research	Excellent research into the issues with clearly documented links to class (and/or outside) readings	Good research and documented links to the material read	Limited research and documented links to any readings	Incomplete research and links to any readings

2. PRESENTATION

	LEVEL 4	LEVEL 3	LEVEL 2	LEVEL 1
Delivery and Enthusiasm	Very clear and concise flow of ideas. Demonstrates passionate interest in the topic and engagement with the class.	Clear flow of ideas Demonstrates interest in topic and engagement with the class.	Most ideas flow but focus is lost at times Limited evidence of interest in and engagement with the topic	Hard to follow the flow of ideas. Lack of enthusiasm and interest.
Visuals	Visuals augmented and extended comprehension of the issues in unique ways	Use of visuals related to the material	Limited use of visuals loosely related to the material	No use of visuals.
Staging	Uses stage effects, such as props, costumes, sound effects, in a unique and dramatic manner that enhances the understanding of the issues in the case study	Uses stage effects, such as props, costumes, sound effects, in an effective manner to extend understanding of the issues in the case study	Limited use of stage effects, and/or used in a manner that did not enhance the understanding of the issues in the case study.	No use of stage effects
Involvement of the class: -Questions -Generating discussion -Activities	Excellent and salient discussion points that elucidated material to develop deep understanding Appropriate and imaginative activities used to extend understanding in a creative manner	Questions and discussion addressed important information that developed understanding Appropriate activities used to clarify understanding	Questions and discussion addressed surface features of the topic Limited use of activities to clarify understanding	Little or no attempt to engage the class in learning
Response to Class Queries	Excellent response to student comments and discussion with appropriate content supported by theory/research	Good response to class questions and discussion with some connection made to theory/research	Satisfactory response to class questions and discussion with limited reference to theory and research	Limited response to questions and discussion with no reference to theory/research

July 6, 2004

Case Resolution Grading Rubric

- ARCS Confidence**
- Learning requirements
 - Successful opportunities
 - Personal responsibility

Module 2 – Case Set

Case 1 – DB is a 47 year old woman diagnosed with stage 4 lung cancer, admitted to your inpatient hospice unit. She is receiving morphine 4 mg/hour by continuous IV infusion and a 2 mg bolus, which she uses about 10 times in 24 hours. She is able to swallow and badly wants to go home. Her attending asks that you calculate an equivalent dose of methadone so she can go home. How do you time the transition also? Explain your recommendation. Patient is also taking:

- Toprol XL 100 mg po qd
- Paroxetine 20 mg po qd
- PreserVision, one tablet per day
- HCTZ 25 mg po qd
- Atorvastatin 40 mg po qd

Student response due by Tuesday evening of week assigned. Please post to discussion board.

Student case resolution: Calculate the total daily dose of morphine – $4 \text{ mg/hr} \times 24 = 96 \text{ mg}$ plus 20 mg boluses, total daily dose 116 mg IV morphine. This is equivalent to 348 mg oral morphine. She's under 65 years old so I'd do a 10:1 conversion, and start methadone at 11 mg po q8h. I would stop infusion of morphine and start oral methadone 8 hours later. Larry.

Peer reviewer – do you agree? Disagree? Explain what you would do if different from the student who responded, and provide a rationale for any decision you make. You must post your analysis and feedback by Thursday night of the week assigned. Coursemanager will provide feedback by Sunday night of the week assigned.

Peer Reviewer Response: I think the dose the student calculated is fine, but I disagree with the timing. I got the same answer in calculating, but if you stop the infusion cold and wait 8 hours the patient will be in pain. I'd stop the infusion and give the methadone four hours later. Bethany.

Instructor Response: Thank you both for your work on this case Larry and Bethany. Larry your calculation of the total daily dose IV and then oral morphine was correct. And the 10:1 conversion is correct, but we generally don't go higher than 10 mg po q8h. Also, paroxetine is a strong enzyme inhibitor, which warrants dose reduction. I probably would start at methadone 8 mg po q8h. Also, I do agree with Bethany that just stopping the infusion cold and waiting 8 hours to start the methadone may leave the patient in pain. I like the four hour strategy, and be sure to offer adequate breakthrough. |

**Example of Module 2 Assignment: Case Set
Learner works on problem set by day 3 of the week;
a peer reviews by day 5 of the week;
instructor debriefs by day 7 of the week**

Gagne

- Stimulating recall of prior learning
- Presenting the stimulus
- Eliciting performance
- Providing feedback
- Assessing performance

Constructivism

- Build on personal experience
- Active and social learning
- Peer grading

ARC

- Attention, Confidence, Satisfaction

Module 3 – “Find the Error” Case Set

Case 1 – HY is a 72 year old man admitted to hospice with a diagnosis of end stage lung cancer. He was admitted on MS Contin 100 mg po q8h, Roxanol 30 mg po q2h prn additional pain. His pain is not well controlled, and the attending suspects opioid induced neurotoxicity, and requests that you calculate an appropriate dose of methadone to replace morphine. Patient is also taking:

- Toprol XL 100 mg po qd
- Sertraline 50 mg po qd
- Centrum Silver, one tablet per day
- Lisinopril 40 mg po qd
- Atorvastatin 40 mg po qd

Case resolution: Calculate the total daily dose of morphine – 100 mg q8h = 300 mg, and 30 mg po q2h prn = 30 x 12 = 360 so the total daily dose is 760 mg.

Patient is over 65 years old, therefore it’s a 20:1 conversion, so that would be 38 mg methadone a day. Recommend methadone 19 mg po q12h. Keep morphine for breakthrough dosing.

Find the error(s) – what went wrong, would your recommendation be different, and explain your rational. Post your response by day 3 of the assigned week.

Key: Learner doesn’t know how often patient uses breakthrough roxanol, therefore it shouldn’t be included in calculation. Best information is patient is getting 300 mg oral morphine per day. Given patient’s age it would be a 20:1 conversion, but this would calculate to 15 mg a day. However, the patient is taking a methadone enzyme inhibitor (sertraline) therefore it would prudent to reduce by 1/3. Recommendation should be methadone 5 mg po q12h. And morphine may be used for breakthrough.

Instructor to post feedback by day 5 of the assigned week.

Sample assignment in Module 3. “Find the Error” Case Set.

Learner posts answer by Day 3 of assigned week; instructor gives feedback by Day 5 of assigned week.

Gagne

- Stimulating recall of prior learning
- Presenting the stimulus
- Eliciting performance
- Providing feedback
- Assessing performance

Constructivism

- Build on personal experience
- Active and social learning
- Peer grading

ARC

- Attention, Confidence, Satisfaction



Discussion Board

Forums are made up of individual discussion threads that can be organized around a particular subject. Create Forums to organize discussions. [More Help](#)

Create Forum

Search

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Forum	Description	Total Posts	Unread Posts	Total Participants
<input type="checkbox"/>	Contacting the Instructor Hello - you are welcome to email me (mmcphers@rx.umaryland.edu) at any time, and I will respond within 24 hours. You are also welcome to call me on my cell (443-822-6036) between 6 am and 11 pm US East Coast time. Dr. Lynn McPherson	0	0	0
<input type="checkbox"/>	Introduce Yourself! Welcome to our online learning adventure! We will be making frequent use of the discussion board, so this is a great place to jump in! Please start a new thread and provide the following: Your name Your site Your discipline A little about your experience in hospice and palliative care Your thoughts on the three biggest barriers to the safe and effective use of methadone in hospice and palliative care Please check back often and respond to your colleagues!	1	0	1
<input type="checkbox"/>	Module 1 Discussion Forum Consider the following questions and post your response. Please respond to at least one other student. 1. Under what circumstances would you consider ordering an EKG in a hospice patient for whom you wanted to prescribe methadone? 2. What electrolyte imbalances increase the risk for methadone associated toxicity? 3. List three medications that increase risk of methadone-associated QTc prolongation? What is the risk of QTc prolongation?	0	0	0
<input type="checkbox"/>	Module 1 - Muddiest Points If anything remains unclear from Module 1, please post your question here.	0	0	0

Gagne – Provide feedback (provide practice and feedback)

Delete

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Question Completion Status:

Save All Answers Save and Submit

QUESTION 1

Which of the following represents an appropriate candidate for conversion to methadone?

- Patient with a true morphine allergy
- Patient with renal impairment
- Patient within days of death
- Patient has pain refractory to other opioids

Behaviorism – multiple choice questions

10 points Save Answer

QUESTION 2

What effect would you expect on the methadone serum level when adding fluconazole 150 mg po qd x 7 days to the medication regimen of a patient at steady-state on methadone?

- Increased methadone serum concentration
- Decreased methadone serum concentration
- No change to methadone serum concentration
- Insufficient data to determine

10 points Save Answer

QUESTION 3

Mrs. Smith is a 72 year old woman admitted to hospice with an end-stage diagnosis. She is opioid-naive but non-opioids have not sufficiently controlled her pain. What is the MAXIMUM total daily dose of methadone her community physician can prescribe under the Seasons protocol?

- 2 mg a day
- 4 mg a day
- 5 mg a day
- 7 mg a day

10 points Save Answer

QUESTION 4

31 10 points Save Answer

Dr. LYNN MCPHERSON

- Introduce Yourself!** Welcome to our online learning adventure! We will be making frequent use of the discussion board, so this is a great place to jump in! Please start a new thread and provide the following:
 - Your name
 - Your site
 - Your discipline
 - A little about your experience in hospice and palliative care
 - Your thoughts on the three biggest barriers to the safe and effective use of methadone in hospice and palliative care
 - Please check back often and respond to your colleagues!1 **0** 1

- Module 1 Discussion Forum** Consider the following questions and post your response. Please respond to at least one other student.
 - 1. Under what circumstances would you consider ordering an EKG in a hospice patient for whom you wanted to prescribe methadone?
 - 2. What electrolyte imbalances increase the risk for methadone associated toxicity?
 - 3. List three medications that increase risk of methadone-associated QTc prolongation? What is the risk of QTc prolongation?0 **0** 0

- Module 1 - Muddiest Points** If anything remains unclear from Module 1, please post your question here.
 0 **0** 0

- Module 2 - Feedback on group cases** WOW! I was so impressed with how well all the groups handled the problem set! I believe you are all in an excellent position to take on your individual problem sets. Here are some of my thoughts regarding the cases:
 - 1. Good job noticing that the patient in Case 1 was cachectic, therefore you cannot give full credit for the oral morphine equivalent of the transdermal fentanyl patch 100 mcg/h. When I encounter this, I usually only give credit for about half (if that) of what it calculates out to.
 - 2. In Case 3 we see that the husband is very unclear about how much oral morphine he had been giving his wife for breakthrough pain. You are correct; you shouldn't even include that in your calculation! It's better to be conservative, and then aggressive with the breakthrough. You can always adjust the dose in a day or two.
 - 3. Good job in Case 4 waiting the full five days to increase the methadone. Even though the nurse and the patient were asking you on Day 3 to increase the methadone, the patient is telling you he feels better, he's doing more activities around the house, and he's not taking much of the morphine. So if we wait two more days, he'll be at steady state and that's probably the right dose. If you increase the dose too early, and THEN their steady state serum level continues to rise, we could accidentally overdose the patient. Good job!
 If you have any questions, please post them in the Muddiest Points discussion section!
 0 **0** 0

Delete

ARCS Satisfaction:

- Intrinsic Reinforcement
- Extrinsic Rewards
- Equity

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McGraw-Hill Higher Education

Rubrics

SafeAssign

Self and Peer Assessment

Send Email

SoftChalk - Synchronize Copied Content

SoftChalk Publish with ScoreCenter

Tasks

Opioid Conversion Calculations

In Five Steps

Why convert?

- Lack of Response
- Adverse effects
- Change in patient status
- Formulary issues
- Formulation issues
- Patient/caregiver concerns

Step 1
Globally assess the patient's pain (PQRSTU).

Step 2
Determine patient's Total Daily Dose (TDD) of the current opioid regimen.

Step 3
Choose new formulation &/or opioid. Convert using established conversion table.

Step 4
Include the AVERAGE number of PRN doses used.

Step 5
Modify calculated dose, if needed, based on assessment from Step 1.



If still not reaching patient-centered pain goals, including pain function, repeat process.

Monitor, follow-up, & continually reassess.

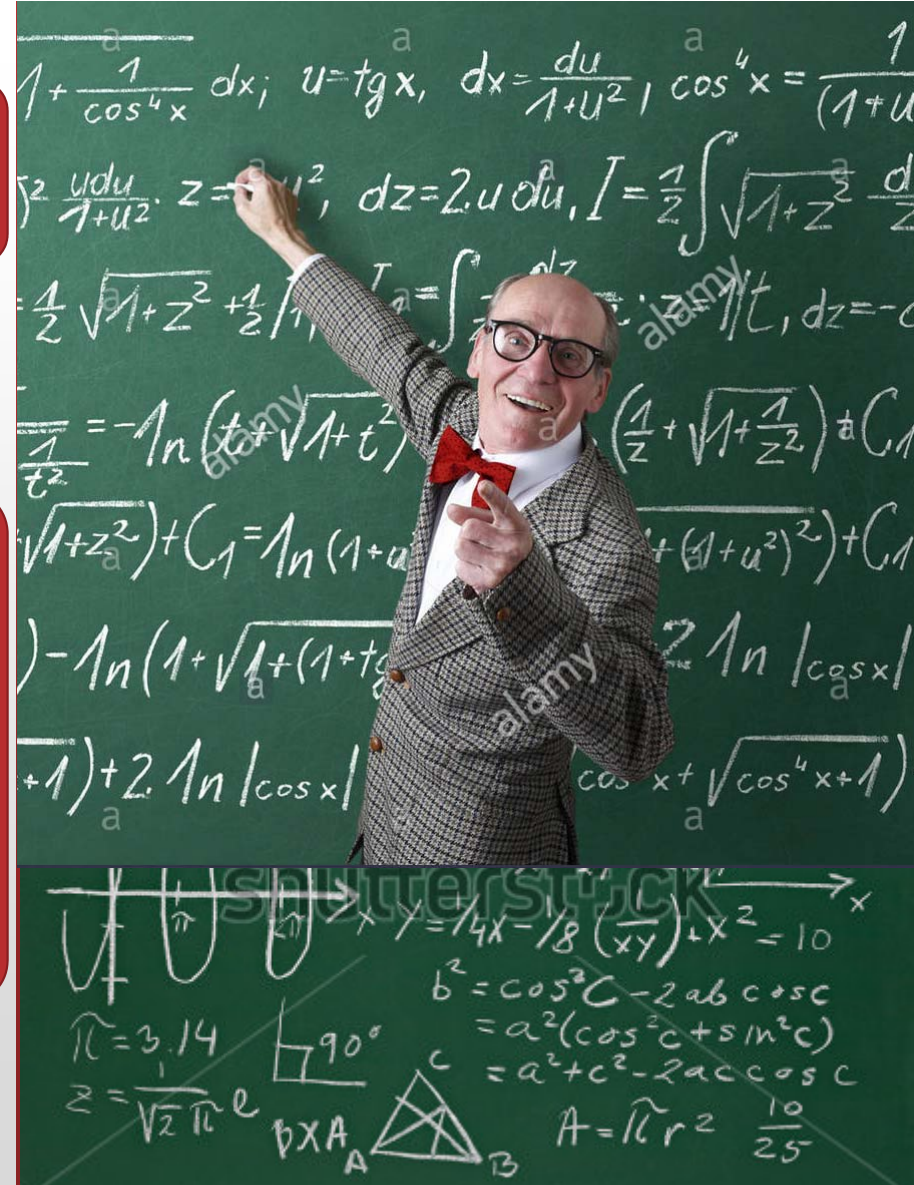
- | | | |
|-----------------------------------|---|----------------------|
| Same drug, pain controlled | → | Use calculated dose |
| Same drug, pain uncontrolled | ↑ | Increase dose |
| Different drug, pain UNcontrolled | → | Use calculated dose |
| Different drug, pain controlled | ↓ | Decrease dose 25-50% |

Increase by 25-50% for moderate pain
Increase by 50-100% for severe pain
Due to incomplete cross tolerance!

Sample Infographic Study Aid

Gagne – Enhancing retention and transfer (present learner with resources that enhance retention and transfer of knowledge)

Additional infographics provided in course



- The course is highly interactive, providing plenty of opportunity to practice skills in determining a patient's risk status prior to starting methadone therapy, determining a starting dose (in both opioid-naïve and opioid-tolerant patients) and how to monitor response to therapy.
- Module 1 – Understanding Methadone
 - TPO: Given an actual or simulated patient, assess risk status for methadone therapy and determine whether patient is an appropriate candidate or not per the Seasons protocol.
- Module 2 – Dosing Methadone
 - TPO: Given an actual or simulated patient with pain, determine a starting dose of methadone consistent with Seasons' protocol with 100% accuracy.
- Module 3 – Monitoring Methadone
 - TPO: Given an actual or simulated patient receiving methadone for pain, describe a monitoring plan consistent with Seasons' protocol with 100% accuracy.

Conclusion

