

# Fever in a 30 day old infant

## Scenario Guide

### Learner-Facing Vignette

Frey-Vogel AS, Ching K, Dzara K, Mallory L. The acceptability of avatar patients for teaching and assessing pediatric residents in communicating medical ambiguity. *J Grad Med Educ.* 2022;14(6):696-703. DOI: <http://dx.doi.org/10.4300/JGME-D-22-00088.1>

#### Background Information

The purpose of this exercise is to:

- Determine the degree to which the avatar patient technology feels real, acceptable, and educational to you as a pediatrician.
- Observe and assess you leading a discussion with a family about a topic which has no “right” answer. We are NOT assessing your medical knowledge and all of the medical knowledge you need for this case is in the paragraph below.

#### Standard of care testing:

*Non-toxic well-appearing febrile neonates (28 days of age or younger) must complete a full sepsis evaluation consisting of a CBC with differential, blood culture, urinalysis, urine culture, and CSF studies (chest x-ray, stool culture, CRP, and pro-calcitonin are optional studies and their use may depend on circumstances). Based on the best available limited evidence, non-toxic well-appearing febrile infants 29 to 60 days of age without an obvious source of infection may be managed depending on institutional protocols that may include:*

- full sepsis evaluation (see above); in this case antibiotics would be started
- partial evaluation (CBC with differential, blood culture, CRP, urinalysis, and urine culture), followed by CSF studies if any of the blood or urine tests are abnormal; antibiotics would only be started if the LP was completed
- partial evaluation (influenza and RSV testing, plus urinalysis and urine culture) if symptoms of bronchiolitis; no antibiotics would be given in this case

**You receive the following hand-off (from a resident) of a well-appearing 30 day old febrile infant whose fever work-up is already in-progress.**

- **I:** I have a stable 30 day old infant with fever
- **P:** She had a **rectal temp of 100.9** at home. ROS otherwise negative except for rhinorrhea. She’s **afebrile here**, appears non-toxic, and has an unremarkable exam. I believe she probably has a viral URI, but we need to rule out serious bacterial infections. I started a sepsis work-up. We’ve already obtained a catheterized urine specimen for UA and culture. The nurse just finished getting a CBC and blood culture too. They’re being sent to the lab now.
- **A:** Our attending is busy with a trauma patient. I haven’t spoken to her yet about the rest of this infant’s work-up. **We need to decide whether she needs an LP or not. I briefly mentioned the idea to the parent but I haven’t confirmed or consented anything yet.**
- **S:** She appears stable. I don’t think she’s septic, but she needs her work-up finished so that we can get her to the floor.

Objectives:

List the 2-5 performance objectives as you want to share with the learners.

- Recognize the ambiguity inherent in managing a febrile infant
- Discuss the indications for a lumbar puncture in a febrile infant aged 29-60 days

### Author(s)

Kevin Ching, MD

[Weill Cornell Medical College]

### Avatars

*Select the Mursion environment that is appropriate for your simulation and avatar(s) if applicable*

[Parents]

[Pediatric Emergency Room]

### Learner Audience

*Describe your audience of learners for this scenario (e.g., office professional, medical professional, pre-service teachers)*

- [Pediatric residents, fellows, and faculty]

- Describe the potential implications of this decision through leading a sharing decision making discussion with an undecided caregiver

### Planned Challenges

#### Challenge 1:

*Demonstrate how to describe the indications for an infant lumbar puncture with a caregiver*

[Describe the indications for an infant lumbar puncture with a caregiver]

#### Performance Objective for Challenge 1:

*Please describe the professional skill that you would like your learners to demonstrate in response to Challenge 1. Then, in the table below: (a) describe the observable actions that will define “hitting” or “missing” that skill; and (b), describe what you would like the avatars to do in response to each circumstance.*

[Describe how a lumbar puncture provides data to help identify meningitis or stratify risk of meningitis in a febrile infant]

When learners...	Avatars will...
HIT	HIT
Describe how an LP includes a CSF cell count, gram stain, and protein/glucose profile that provides preliminary data on the <i>potential risk</i> of meningitis	“Do you think all this testing is the right thing for my baby? Are you sure we need to do it?”
MISS	MISS
State that an LP <i>must</i> be performed  State that there is no indication for an LP	“Do we absolutely need to do a spinal tap on my baby? I’m worried because she’s just a baby and she’s so small.” “I have heard of some babies getting a spinal tap. Why doesn’t my baby need one? We want to be absolutely sure she is ok.”

*As stated above, learners may hit or miss the performance objective. In some cases, the performance objective must be hit before moving successfully to the Challenge 2; however in other cases, learners may miss the objective but still be able to successfully complete Challenge 2.*

#### Challenge 2:

- Challenge 2 is the secondary challenge and should provide a clear opportunity to master the second performance objective. Please describe the challenge you would like your learners to face in 2 to 3 sentences. It may build off of Challenge 1 or be a separate, new challenge.*

[Describe the potential implications of this decision with an undecided caregiver.]

### Performance Objective for Challenge 2:

Please describe what you would like your learners to do in response to challenge 2. Then, in the table below: (a) describe the observable actions that will define “hitting” and “missing” the performance objective and (b) describe what you would like the avatars to do in response to each circumstance.

[Discuss the pros and cons for an empiric vs. step-wise vs. no lumbar puncture in a well-appearing febrile infant aged 29-60 days.]

When learners...	Avatars will...
HIT	HIT
<p>Describe the <b>pros</b> of each approach to an LP:</p> <ul style="list-style-type: none"> <li>- empiric: <u>no ambiguity</u> in infant’s risk of meningitis</li> <li>- step-wise: LP only performed when additional data supports it</li> <li>- no LP: low prevalence of meningitis; avoids invasive procedure</li> </ul> <p>Describe the <b>cons</b> of each approach to an LP:</p> <ul style="list-style-type: none"> <li>- empiric: potentially unnecessary invasive procedure (risks)</li> <li>- step-wise: risk of no testing or delay in testing (and treatment)</li> <li>- no LP: risk for missing early meningitis</li> </ul> <p>Assist the parents through shared decision making, helping them to fit their values and what makes them feel most comfortable into a decision.</p>	<p>“The other doctor said a spinal tap is usually safe, but there are risks. What do you think I should do? What would you do if it were your baby?”</p>
MISS	MISS
<p>Fail to systematically describe the pros and cons of an LP.</p> <p>Describes the pros and cons of an LP but doesn’t engage in shared decision making and leaves the choice up to the family without any guidance</p>	<p>“I don’t understand what you’re saying to me. All this talk is making me nervous. Can you explain it again?”</p> <p>“This is so much information and I don’t know how to decide. What would you do if it were your child?”</p>

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### Materials

Parent (answers to questions if asked for clarification on the infant's history):

- My baby felt warm this morning so I took her temperature (I used a rectal thermometer) and it was 100.9 F.
- I called my pediatrician and she said to bring my baby to the ER.
- She has a "little runny nose." No cough or difficulty breathing.
- She has no vomiting or diarrhea.
- She's breast-feeding about 20 min every 3-4 hours.
- She has no rashes.

The ideal is for the learner to explain that the situation is ambiguous, share the options with pros/cons and help the family decide what is the right choice for them based on their values and what makes them feel comfortable. The parents should be uncomfortable with either being told what to do without this explanation or being given a lot of medical information without guidance as to how to interpret it through the lens of what is important to them.

### Reflection Prompts

*Ambiguity Tool to be included here.*

[Examples: What one thing did you do well? What one thing would you do differently?]



View the participant sees of the parents and the environment.

### Learner-Facing Vignette

*In this section you will provide any ancillary materials that learners need to use in conjunction with your simulation. Briefly describe your challenge in 2 to 4 sentences to prepare your learners for the simulation. Use a narrative format to engage the learners and set the stage.*

The purpose of this exercise is to:

- Determine the degree to which the avatar patient technology feels real, acceptable, and educational to you as a pediatrician.
- Observe and assess you leading a discussion with a family about a topic which has no “right” answer. We are NOT assessing your medical knowledge or ability to take a history to get all of the salient points from the patient and all of the medical history you need for this case is in the paragraph below.

You are working in your outpatient pediatric continuity clinic and you to go see Jasmine Jones, a 14-year-old girl who is here for an urgent care appointment. Review of the medical record reveals that Jasmine is a seemingly otherwise healthy girl who was most recently seen for her annual school physical approximately 8 months prior. Jasmine lives alone with her mom, Mrs. Jones. Mrs. Jones brought Jasmine in today because she is concerned that Jasmine, who had been a straight “A” student, has seemed disinterested in school recently and has been getting “C’s.” After talking with Jasmine alone, you learn that she has been bullied by a group of girls on social media and is feeling tormented and worthless. She has started thinking about killing herself, but has no plan and states that she “could never do that to my mom.” You are now alone in the room with Jasmine and need to lead a discussion with Jasmine about how to tell her mom this information and then with her and her mom about what the plan for Jasmine will be.

### Objectives:

*List the 2-5 performance objectives as you want to share with the learners.*

- [Performance Objective 1] Develop a plan with the teen for disclosing that she has suicidal ideation to mom
- [Performance Objective 2] Develop a collaborative plan of care with the teen and parent, explicitly acknowledging the ambiguity inherent to the situation and ensuring the parent and child feel comfortable with the plan despite this ambiguity.

### Planned Challenges

#### Challenge 1:

*Challenge 1 should provide a clear opportunity for the learner to demonstrate proficiency in the performance of the skill for which they are training or being assessed.*

### Author(s)

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[MassGeneral Hospital for  
Children]

### Avatars

*Select the Mursion environment that is appropriate for your simulation and avatar(s) if applicable*  
[Doctor’s Outpatient Office  
Examination Room  
Environment]

### Learner Audience

*Describe your audience of learners for this scenario (e.g., office professional, medical professional, pre-service teachers)*

- [Pediatric residents, fellows, and faculty].

[Please describe in 2 to 3 sentences the professional challenge that you want the learner to overcome here.]

The learner should establish a compassionate therapeutic relationship Jasmine and help her to decide how she would like the information about her suicidal ideation to be disclosed to mom.

### Performance Objective for Challenge 1:

Please describe the professional skill that you would like your learners to demonstrate in response to Challenge 1. Then, in the table below: (a) describe the observable actions that will define “hitting” or “missing” that skill; and (b), describe what you would like the avatars to do in response to each circumstance.

[Please describe the performance objective for your learners in Challenge 1 here.]

Performance Objective 1

When learners...	Avatars will...
<b>HIT</b>	<b>HIT</b>
<p>[In this section, describe the observable actions your learners will do if they hit the performance objective]</p> <p>The learner expresses compassion and concern</p> <p>The learner explains the limits of confidentiality with teen patients and that mom needs to be told that Jasmine has had suicidal thoughts and comes up with a plan with Jasmine for how they will share this information with mom.</p>	<p>[In this section, describe what you would like the avatars to do in response. If multiple avatars are used in the simulation, please specify which avatar you are referencing]</p> <p>Jasmine starts out with a flat, reserved affect, but is more talkative as time goes on</p> <p>“Could you tell her? I don’t think I can do it.” (If asked how she thinks mom will react, “I think she will just be really sad and I hate that I am worrying her.”</p>
<b>MISS</b>	<b>MISS</b>
<p>[In this section, describe the observable actions your learners will do if they miss the performance objective]</p> <p>The learner fails to explain the limits of the confidentiality agreement</p> <p>The learner doesn’t allow Jasmine to help decide how they will tell mom and either tells mom or tells Jasmine she will tell mom</p>	<p>[In this section, describe what you would like the avatars to do in response. If multiple avatars are used in the simulation, please specify which avatar you are referencing]</p> <p>Jasmine remains reserved and with a flat affect, not speaking much, “I thought you said you couldn’t tell people what we talked about?”</p> <p>Jasmine appears really uncomfortable throughout the discussion, not making eye contact</p>

As stated above, learners may hit or miss the performance objective. In some cases, the performance objective must be hit before moving successfully to the Challenge 2; however in other cases, learners may miss the objective but still be able to successfully complete Challenge 2.

### Challenge 2:

Challenge 2 is the secondary challenge and should provide a clear opportunity to master the second performance objective. Please describe the challenge you would like your learners to face in 2 to 3 sentences. It may build off of Challenge 1 or be a separate, new challenge.

[Please describe the challenge you would like your learners to face in 2 to 3 sentences here.]  
 The learner should acknowledge concern for Jasmine’s safety and develop a collaborative plan of care with Jasmine and her mother that incorporates their perspectives and values, using a shared decision making model.

### Performance Objective for Challenge 2:

Please describe what you would like your learners to do in response to challenge 2. Then, in the table below: (a) describe the observable actions that will define “hitting” and “missing” the performance objective and (b) describe what you would like the avatars to do in response to each circumstance.

[Please describe the performance objective for your learners in Challenge 2 here.]

### Performance Objective 2

When learners...	Avatars will...
<b>HIT</b>	<b>HIT</b>
<p>[In this section, describe the observable actions your learners will do if they hit the performance objective]</p> <p>The learner will describe potential next steps for Jasmine and her mom, emphasizing that there is not one “right” answer for what the next steps would be and offering different options, weighing the pros and cons of each and giving the “warning signs” for when Jasmine would not be safe at home.</p> <p>The learner will answer questions about Mrs. Jones’ concerns that Jasmine may not be safe at home</p>	<p>[In this section, describe what you would like the avatars to do in response. If multiple avatars are used in the simulation, please specify which avatar you are referencing]</p> <p>Jasmine and Mrs. Jones will discuss the options with the learner and decide to proceed with outpatient referral to psychiatry with close follow up. Along the way, Jasmine’s mom should say something like, “I am just so worried about Jasmine and I don’t want to make the wrong decision and have something terrible happen. What would you do if it were your child?”</p> <p>Mrs. Jones is reassured when the learner gives “warning signs” to seek a higher level of care and explains the things that make it safe for Jasmine to go home.</p>
<b>MISS</b>	<b>MISS</b>
<p>[In this section, describe the observable actions your learners will do if they miss the performance objective]</p> <p>The learner makes a plan for next steps for Jasmine without the input of Jasmine and her mom.</p> <p>The learner lays out all of the possible options for next steps without helping Jasmine and her mom to process them through a shared decision making model</p>	<p>[In this section, describe what you would like the avatars to do in response. If multiple avatars are used in the simulation, please specify which avatar you are referencing]</p> <p>Jasmine and her mom appear uncomfortable with this plan and raise concerns suggesting they would like a different plan and asking if there are other (more/less) aggressive options.</p> <p>Mom: “I am so confused what to do. This just feels so scary— what if I make the wrong decision and something terrible happens? What is the right choice? What would you do if it were your child?”</p>



### Materials

*What is the essential background content information that is relevant to this simulation, and how do you expect the avatar(s) to demonstrate knowledge, understanding, or misunderstanding of this content? Topics may vary based on the learner's subject area or your specific training content.*

The ideal is for the learner to explain that the situation is ambiguous, share the options with pros/cons and help the family decide what is the right choice for them based on their values and what makes them feel comfortable. Jasmine and her mom should be uncomfortable with either being told what to do without this explanation or being given a lot of options without guidance as to how to interpret it through the lens of what is important to them.

On confidentiality: Pediatricians can promise confidentiality with a teen in all cases except if there is a concern that the teen could inflict harm on themselves or someone else. In that case, the pediatrician has a responsibility to make sure that information is disclosed to the parent/guardian.

On suicidal ideation: If a patient is “passively” suicidal, that means that they have thought about killing themselves, but have no plan to do so. This is considered less risky than someone who is “actively” suicidal—someone who has a plan and the means to kill themselves. An actively suicidal patient needs to go to the emergency room immediately to ensure their safety. A passively suicidal patient needs a plan for psychiatric evaluation and follow up, and could go to the emergency room if that is the best plan for the individual patient, but doesn't necessarily need to go to the emergency room immediately for evaluation. If a patient is going home after a visit in which suicidal thoughts come up, they should be asked to “contract for safety,” meaning that they have a plan for how they would seek help if they were feeling unsafe or thought they might hurt themselves.

### Reflection Prompts

*The debrief/feedback after performance is essential. Please list one or two prompts/questions for reflection that you will ask learners after they complete the simulation.*

Ambiguity assessment tool



View the participant sees of the patient, her mother, and the clinical environment

## Survey Assessing the Acceptability of Avatar Patients

### Emotional responses

- 1) To what extent did you feel emotionally invested in the scenarios?  
Extremely invested // Invested // neutral // Uninvested // Extremely Uninvested
- 2) What, if any, emotions did these scenarios evoke for you? (free text)

### Educational value

- 3) How beneficial was participation in the scenarios with avatar patients to your learning about communicating with patients about ambiguous medical situations?<sup>1</sup>  
Very beneficial // Beneficial // Neutral // Somewhat beneficial // Not at all beneficial
- 4) Does this experience with avatar patients make you more confident talking to families and patients and families about ambiguous situations?<sup>2</sup>  
Definitely // Probably // Neutral // Probably not // Definitely not
- 5) Would you recommend the use of avatar patients to other physicians to help with the development of communication skills?<sup>2</sup>  
Definitely // Probably // Neutral // Probably not // Definitely not?
- 6) Would you like to use avatar patients again to help you practice your communication skills?  
Definitely // Probably // Neutral // Probably not // Definitely not

### Reality

- 7) How real did the avatar patient **clinical environment** feel (in other words, how easily were you able to suspend disbelief)?<sup>3</sup>  
Very realistic // Realistic // Neutral // Unrealistic // Very unrealistic
- 8) How real did **the conversation with the avatar patient and family members** feel (in other words, how easily were you able to suspend disbelief?)  
Very realistic // Realistic // Neutral // Unrealistic // Very unrealistic
- 9) How real did the scenario of a **fever in a baby** feel?  
Very realistic // Realistic // Neutral // Unrealistic // Very unrealistic
- 10) How real did the scenario of **suicidal ideation** in a teenager feel?  
Very realistic // Realistic // Neutral // Unrealistic // Very unrealistic

### Acceptance of being evaluated

- 11) How comfortable would you, as a resident, feel having your residency program use AP scenarios like the ones you just completed to help place you on the following milestone:

*“Recognize that ambiguity is part of clinical medicine and recognize the need for and utilize appropriate resources in dealing with uncertainty” (Professionalism 6)*

Extremely comfortable // Comfortable // // Neutral // // Uncomfortable // Extremely uncomfortable

### Demographics

- 12) What is your current PGY year?  
PGY 1 // PGY 2 // PGY 3 // PGY 4
- 13) What is your current training program?  
Prelim // categorical // med-peds // pediatric neurology // pediatric psychiatry

## References:

<sup>1</sup>Adapted from the survey described in Kapralos B, Cristancho S, Porte M et al (2011). Serious games in the classroom: Gauging student perceptions. In Medicine Meets Virtual Reality 18. JD Westwood et al. (Eds). IOS Press, 2011, 254-259.

<sup>2</sup>Adapted from the "Classroom Simulator Survey" developed by Mursion; Classroom Simulator Survey. Google Docs. Accessed August 6, 2020. [https://docs.google.com/forms/d/e/1FAIpQLSePyhh-aQMRGzgoCnLnckIDp8E\\_HHlowjsPGZyOitOtsYOwQ/viewform?edit\\_requested=true&usp=embed\\_face\\_book](https://docs.google.com/forms/d/e/1FAIpQLSePyhh-aQMRGzgoCnLnckIDp8E_HHlowjsPGZyOitOtsYOwQ/viewform?edit_requested=true&usp=embed_face_book)

<sup>3</sup>Adapted from the "Realism score" described in Alsaad AA, Davuluty S, Bhide VY et al (2017). Assessing the performance and satisfaction of medical residents utilizing standardized patient versus mannequin-simulated training. *Advances in Medical Education and Practice*. 8:481-486.

<sup>1</sup>Adapted from the survey described in Kapralos B, Cristancho S, Porte M et al (2011). Serious games in the classroom: Gauging student perceptions. In Medicine Meets Virtual Reality 18. JD Westwood et al. (Eds). IOS Press, 2011, 254-259.