Learner Guide: Attending & Fellow Physicians

Best Case/Worst Case Trauma ICU

Synchronous Training Agenda (30 minutes):

1. **Introduction of Best Case/Worst Case (BC/WC) Trauma ICU (5 minutes)**
    a. Explain the utility of Best Case/Worst Case
    b. Identify the elements of the graphic aid
    c. Define scenario planning/storytelling
2. **Guided practice and demonstration with case example (10 minutes)**
    a. Tell the Best Case Story for Case 1, Rounding Day 1
    b. Tell Best and Worst Case stories for Case 1, Rounding Day 2
    c. Complete Event, Star Placement, and Bullet Points for Case 1, Rounding Day 2
    d. Watch video demonstration of Case 1, Rounding Day 3 (3.5 min)
    e. Complete the graphic aid for Case 1, Rounding Day 3 (optional)
    f. Review how to use the graphic aid while talking with patients and families
    g. Debrief and Questions
3. **Evaluation (10 minutes)**
    a. Independently complete graphic aid for Case 2, Rounding Day 1
    b. Independently complete graphic aid for Case 2, Rounding Day2
    c. Roleplay how you would use BC/WC with patient's 'family member'
    d. Review Evaluation Checklist
    e. Complete Self-assessment
    f. Plan for check-in before going on service
4. **Next steps (5 minutes)**
    a. Your role as attending/fellow
    b. Timing of roll out
    c. How to contact study team
    d. Feedback and plans for monitoring adherence

Learner Manual Table of Contents:

Introduction

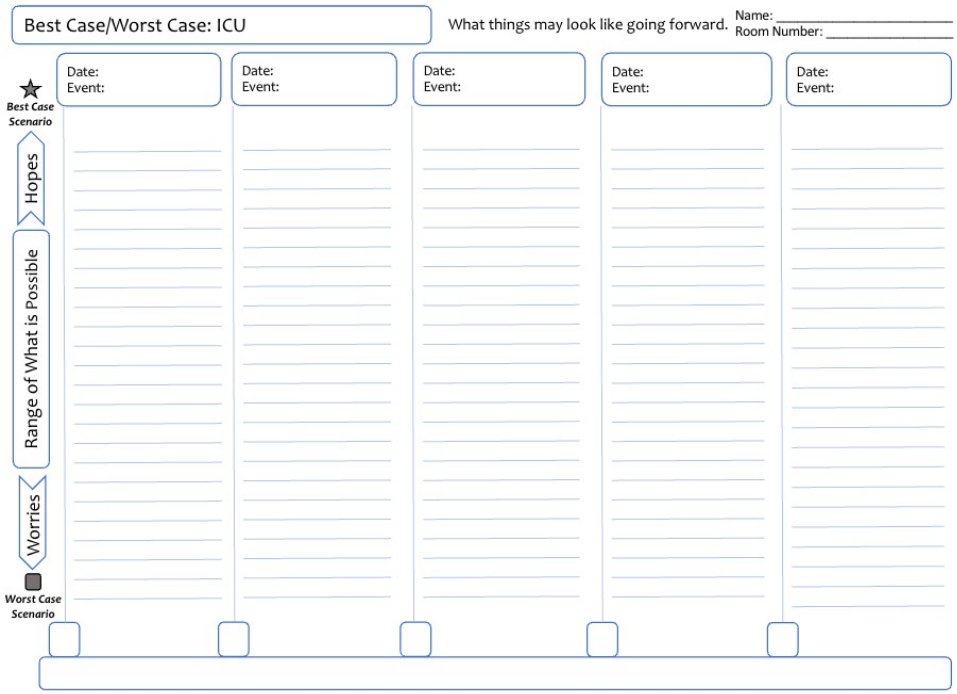
Have you ever taken care of a frail elderly trauma patient in the ICU who experiences multiple complications and eventually succumbs to her injuries on day 15 – much to the surprise of her family, even though you foresaw a similar scenario happening on day 2 of her hospitalization? We believe that this is a difficult and frustrating problem for clinicians, patients, and their families, because it can lead to unwanted care and real harms for all involved. To address this problem, we have developed an intervention called Best Case/Worst Case (BC/WC).

We developed the communication tool Best Case/Worst Case as an intervention to support decision-making. Several clinicians around the country have used this tool to help patients and their families make difficult decisions. Given the unique challenges of the ICU discussed above, we have adapted our decision-making tool specifically for the ICU to help you and your team better prognosticate for these complicated patients. We think this will ultimately set you and your team up for successful decision-making conversations with families. Today, we will use hands-on learning techniques that we hope will help you to develop comfort and expertise using this innovative communication tool.

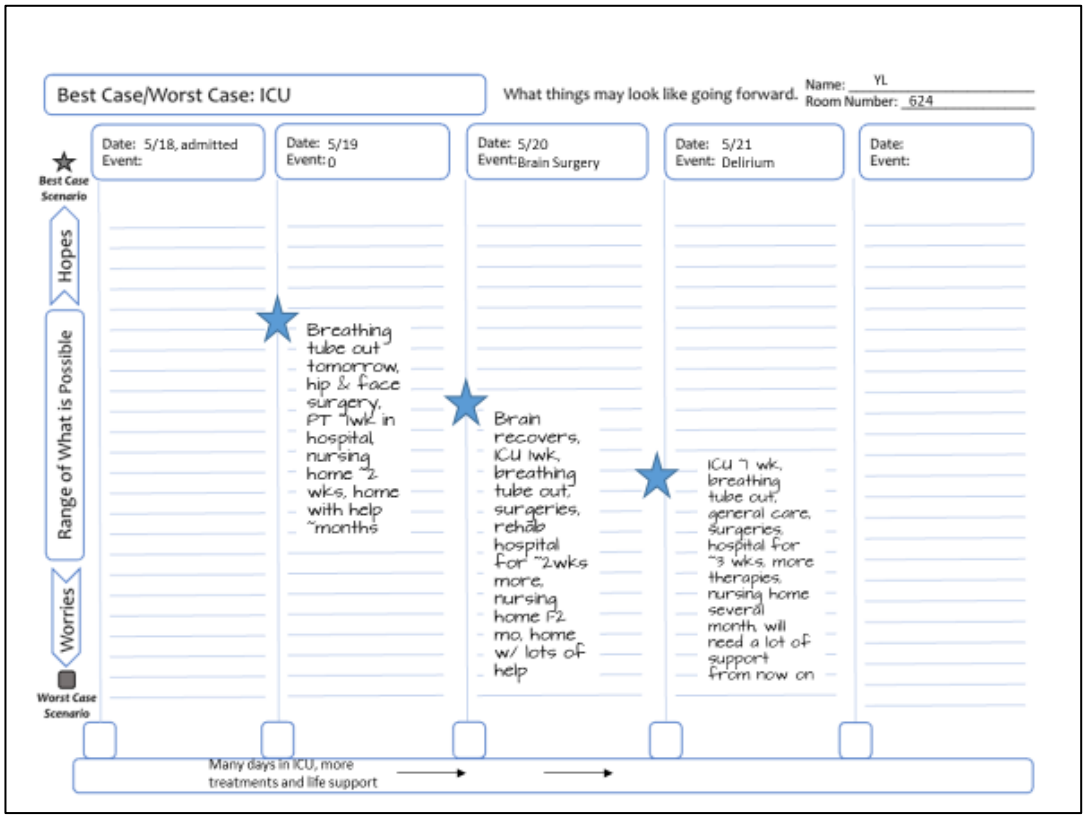
Learning Objectives

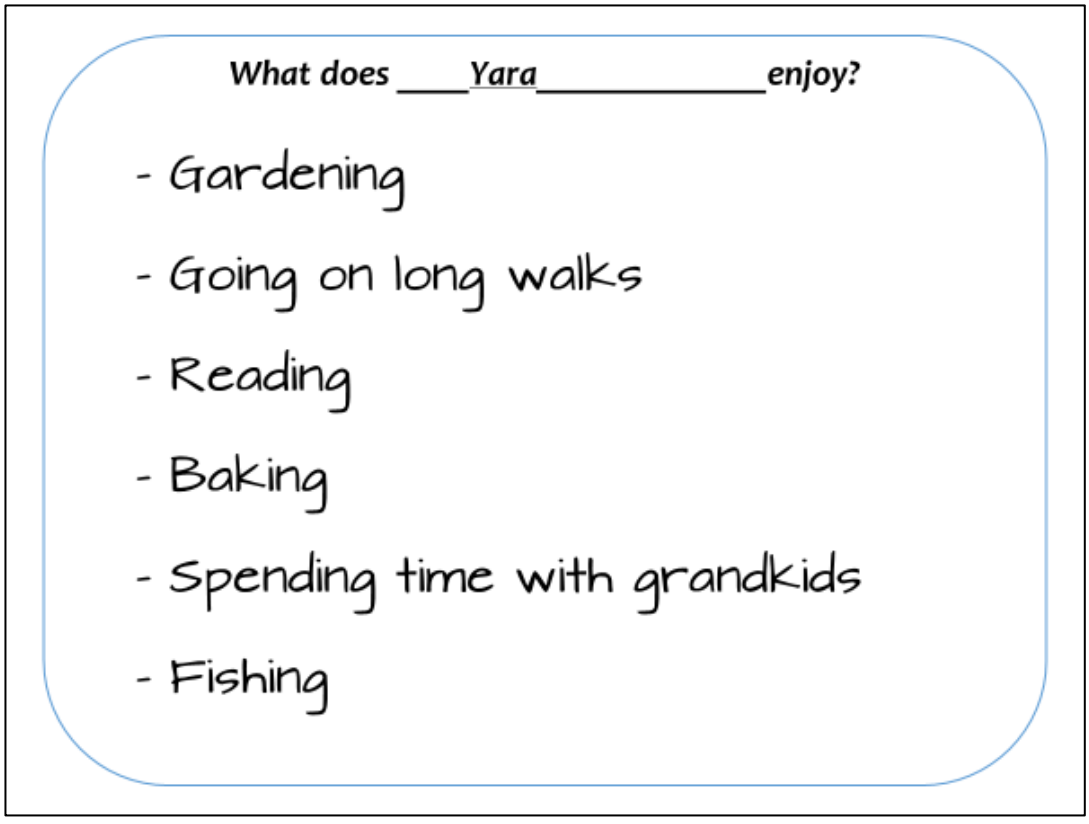
- Describe the Best Case/Worst Case tool and your role as the Attending/Fellow Physician
- Identify major events in the clinical course that change the best case
- Translate clinical knowledge and prognostic information to BC/WC format for complex trauma patients
- Use scenario planning during rounds to generate the patient outlook with a range of clinical trajectories including the best and worst case
- Demonstrate communicating “what we are hoping for” and “what we are worried about” to patients, families, and loved-ones to support shared decision making

The Graphic Aid



Example Graphic Aid for Yara Lopez (whiteboard video)





Practice Case 1: Laurel Rodgers

Rounding Day 1

Background

Ms. Laurel Rodgers is a 67 y/o female who presented to the ED as a level 1 trauma following a fall from standing. Bystanders report she was walking her dog when she fell, hitting her head on the concrete. She was intubated at the scene for GCS <8. She sustained extensive injuries, including a right subdural hematoma, multiple facial fractures, and multiple extremity fractures.

Team Presentation

Ok, so by system for Ms. Rodgers…

Neuro/Pain: She has a right subdural hematoma seen on trauma head CT. Neurosurgery is following and wants a repeat head CT at 4 hours, which will happen in one hour. She has been sedated, so we will need to lighten her sedation in order to get a better neuro exam after she comes back from CT. For pain she has a fentanyl which appears to be working well.

CV: She has a history of afib, well controlled on 25mg metoprolol, currently in normal sinus rhythm. We'll continue to monitor with telemetry.

Pulm: She is intubated and ventilated. Her gases are 7.4/40/25/98. PEEP is 8, tidal volume is 360, FiO2 is 50%, and rate is 10. Chest was clear on AM chest XR and her ET tube is in place. We'll plan start trying to wean her vent when we get back from CT and do spontaneous breathing trials when ready—at least one each day.

GI: Abdomen is soft and non-distended. Trauma CT found no injuries. She has an NG-tube in place. No diet or tube feeds yet, but OK to give meds through the tube. Monitor for bowel movement.

Renal/GU: No acute issues or injuries. A foley was placed in the ED and she has been making good urine. We'll continue to monitor and get the foley out as soon as we can.

Heme: Borderline anemic on labs this AM, but hemodynamically stable and no signs of bleeding except for her head. No transfusion needs at this time; continue to monitor. She takes warfarin at home; her INR in the ED was 4.0 and has since come down to 1.5 after she received 2 units of FFP for reversal.

ID: She's been afebrile. White count is elevated likely secondary to trauma and not infectious, but we'll continue to monitor.

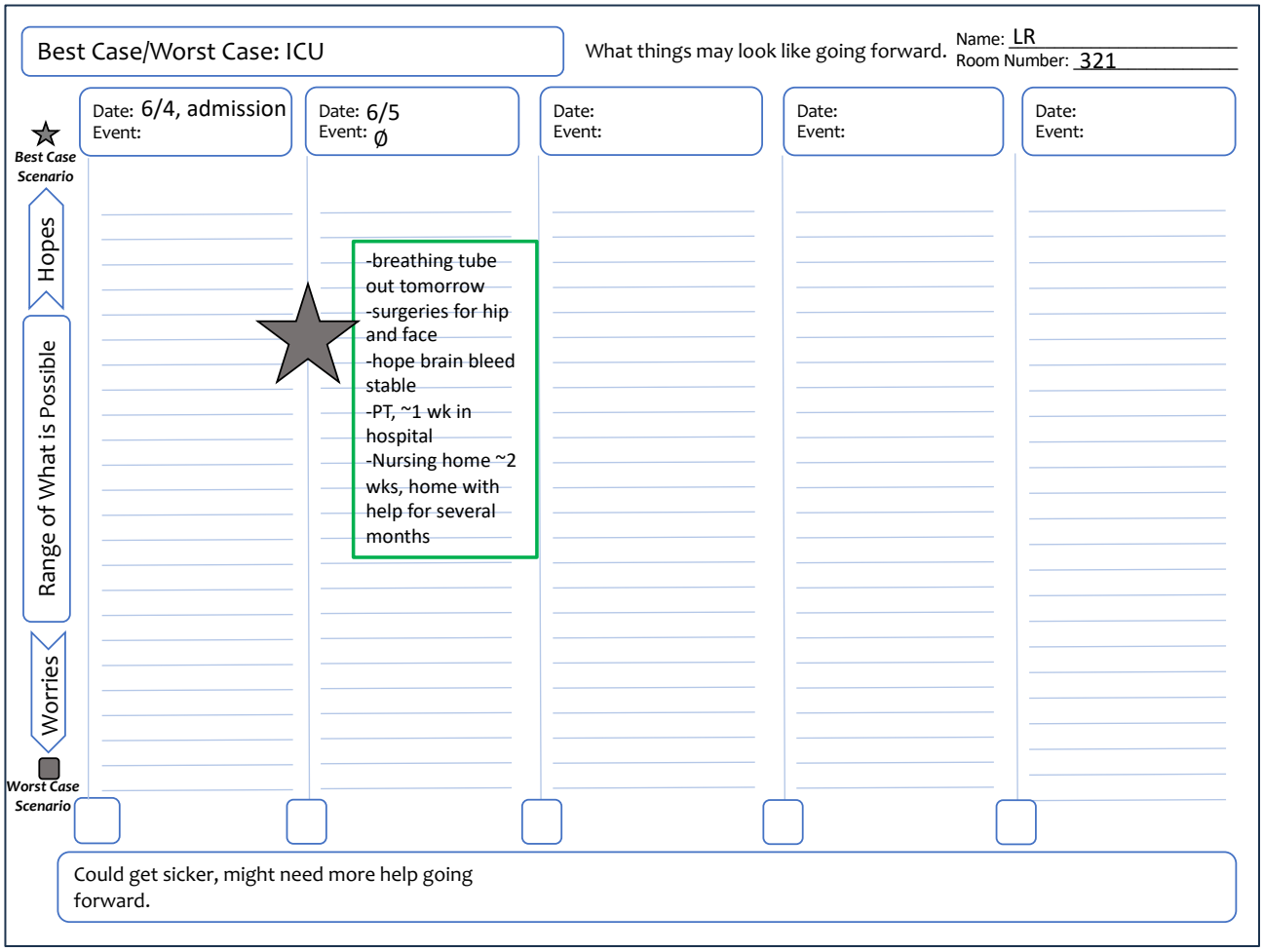
Endo: History of hypothyroidism, 0.5 of levothyroxine. Continue for now.

MSK: For her facial fractures, plastics is consulted and they will see her in a few days to discuss operative treatment when the swelling goes down. She has a right arm and right hip fracture for which she needs surgery. They are going to place a splint today for her right arm.

Prophylaxis: Given her brain bleed we are holding anticoagulation and prophylaxis for now. We'll keep her on a PPI for now while she is intubated.

Outlook: What is the Outlook?

TELL A STORY ABOUT THE BEST CASE SCENARIO TO YOUR INSTRUCTOR



Rounding Day 2

Update

We are here on rounds with Ms. Laurel Rodgers again – since we saw her yesterday, her head bleed got worse and she had to go to the OR to relieve the pressure.

Presentation

Neuro/Pain: For Neuro, she went to the OR this morning for decompressive craniotomy with neurosurgery due to worsening subdural hematoma with mass effect. She tolerated the procedure well and was returned to us this morning. Neurosurgery is involved for wound care and ICP monitoring. Pain appears well controlled.

...remaining review of systems not significant...

Prophylaxis: So for prophylaxis we are continuing to hold anticoagulation, and we'll continue her PPI while intubated.

Outlook: What is the Outlook?

ADD EVENT, STAR, BEST CASE AND ANY CHANGES TO WORST CASE ON GRAPHIC AID

Rounding Day 3

Update

Our next patient is Ms. Laurel Rodgers – since we saw her yesterday, she has been very agitated and has developed ICU delirium.

Event - Agitation and delirium, trouble weaning from vent (on video)

Presentation

Neuro: ICPs stable, agitated when sedation weaned, CAM ICU positive for delirium
Pulm: Failed SBT, trouble weaning from vent
...remaining review of systems not significant...
Prophylaxis: Still holding her anticoagulation until we get OK from neurosurgery
Outlook: Now for outlook. Based on your experience, what can we expect for Ms. Rodgers if everything went as well as we could hope for?

Best Case Sample Verbal Description

I think, again, her outlook is a bit worse than yesterday given her worsening delirium. She's been difficult to wean from the vent too. However, I think if everything goes well, we'll get her extubated tomorrow or the day after and hopefully with the tube out she will be less delirious. She'll stay in the ICU for another day or two after that as we get her respiratory status stabilized, and she'll go to a general care floor. If we're lucky, we won't have to readmit her to the ICU during the rest of her hospital stay, and she'll start the long journey toward recovery...lots of painful PT and OT work. I think she'll probably be in the hospital for another week or two, maybe three weeks after she leaves the ICU, and then she'll need to go to a nursing home for several months for more rehab. I am worried it's going to be very difficult for her to be independent and live by herself again, even if she does really well with PT and OT.

COMPLETE THE GRAPHIC AID FOR ROUNDING DAY 3 (OPTIONAL)

Case 2: Colin Flaherty (Evaluation)

Rounding Day 1

Background

Mr. Flaherty is a 72 year old man with a history of hypertension who presented to the trauma bay last night after an MVC at highway speeds in which he was a belted driver involved in a collision with a semitruck. He was initially alert and oriented in the trauma bay, and the trauma team obtained a chest and pelvis xray notable for L rib fractures without pneumothorax. Prior to CT scan, he became hypotensive and lethargic; FAST revealed large amount of blood in L paracolic gutter so he was taken emergently to OR. He underwent exploratory laparotomy which revealed significant bleeding from the spleen; he underwent splenectomy and no other intra-abdominal injuries were identified. Once he was stabilized in the ICU, he underwent a CT pan scan to assess

for other injuries. His only other identified injuries were L sided nondisplaced rib fractures 3-9. Overnight, he has not required additional blood transfusion and is not requiring any vasopressor support.

Presentation

Neuro/Pain: On propofol and fentanyl for pain and sedation; when paused he moves all extremities
CV: History of hypertension, takes lisinopril which we are holding.
Pulm: Ventilated on volume control setting with FiO2 40%, PEEP 5, TV 400, RR 16. AM CXR without pneumothorax, does show some L sided opacity consistent with pulmonary contusion. Anticipate SBT/extubation this morning.
GI: s/p splenectomy, NPO with OG tube in place while intubated. We will remove OG tube when extubates and start liquid diet.
Renal/GU: making adequate urine, Cr 0.9, remove foley catheter today. continue maintenance IVF while NPO.
Heme: Hgb stable this morning at 9 from 8 yesterday. Received total of 3 pRBC, 2 FFP, 2 plts yesterday. INR, PTT, TEG all within normal parameters this AM. Continue Hgb checks q6h until this evening, then can space to q12h.
ID: will need splenectomy vaccines prior to discharge
Endo: no history of DM, sliding scale insulin available for stress-induced hyperglycemia, has not required any doses
MSK: No acute issues.
Prophylaxis: If hgb remains stable at mid-day check will start lovenox for DVT ppx. On PPI while intubated, will discontinue if extubates today.
Outlook: What is the Outlook?

TELL YOUR INSTRUCTOR THE BEST CASE STORY AND COMPLETE THE GRAPHIC AID FOR ROUNDING DAY 1

Rounding Day 2

Update

Mr. Flaherty was extubated yesterday afternoon, though has struggled with pain control associated with his rib fractures and remains on BiPAP for oxygenation needs. During tertiary exam yesterday, the trauma team noted that Mr. Flaherty had significant bruising and swelling of his L knee and distal thigh. Xrays demonstrated a minimally displaced L distal femur fracture.

Presentation

Neuro/Pain: Scheduled tylenol, gabapentin, dilaudid PCA, lidocaine patches for pain control. Requesting a local block from anesthesia team to facilitate better pain control.
CV: History of hypertension, takes lisinopril which we are holding.
Pulm: BiPAP 12/6 50% FiO2. Wean as tolerated.
GI: s/p splenectomy, NPO due to aspiration risk as he remains on positive pressure. Passing flatus, no bowel movement.
Renal/GU: making adequate urine, Cr 0.8. continue maintenance IVF while NPO.
Heme: Hgb stable this morning at 9.2 from 9.0. No ongoing concerns for bleeding.
ID: will need splenectomy vaccines prior to discharge.

Endo: no history of DM, sliding scale insulin available for stress-induced hyperglycemia, has not required any doses
MSK: Orthopedic surgery consulted for L femur fracture; planning operative intervention later today vs tomorrow pending OR availability.
Prophylaxis: Lovenox for DVT ppx, will hold afternoon dose per Orthopedic surgery request.
Outlook: What is the Outlook?

TELL YOUR INSTRUCTOR THE BEST CASE STORY AND COMPLETE THE GRAPHIC AID FOR ROUNDING DAY 2

Family Scenario

Mr. Flaherty's child, Connor, flew in from Washington, DC, where they live when they heard that their dad was in the hospital. They are in the room and asking for an update from one of the physicians on how their dad is doing. Using the BC/WC-ICU graphic aid, help update Connor.

USE THE GRAPHIC AID TO UPDATE CONNOR

Events that Change the Story

The left column lists examples of events that are worth noting on the top of the graphic aid because they change the story. The right column lists examples of events that would probably not change the story, therefore do not need to be noted on the graphic aid.

Events that change the story	Events that probably don't change the story
☐ New imaging findings (stroke, previously un-reported injuries)	☐ Minor change in imaging (e.g., improving CXR)
☐ Major cardiac event (e.g., MI, CHF)	☐ ECG changes
☐ Major hemorrhage (e.g., GI bleed, head bleed)	☐ Minor bleeding or bleeding not requiring operative invention
☐ New complex infection	☐ UTI or other uncomplicated infection
☐ Evolving neuro exam	☐ ICU delirium
☐ Worsening delirium	☐ Minor change in ventilator settings
☐ Failure to extubate	☐ Fluctuating vital signs
☐ Steady decline in vital signs	☐ Fluctuating urine output
☐ Pulmonary embolism	☐ Medication side effects
☐ Need for hemodialysis	
☐ Failure to meet expected milestones (e.g., no change in clinical status over 3 days)	

Using Best Case/Worst Case-ICU as a Team

- **Generating the outlook:** (Recommended: Attending/Fellow)
  - It is important that a team member with experience generates the outlook.hTey need to use their experience and knowledge to tell the story of the Best Case and Worst Case Scenarios. The attending or fellow may want to invite a resident to generate the outlook and then confirm or adjust the story.
  - If the team member leading the systems-based patient presentation has the experience to generate the outlook, they can do so by starting, "In the Best Case Scenario, we are hoping…"
  - If the team member leading the systems-based patient presentation does not feel that they have the experience to generate the outlook, they can prompt the attending/fellow to describe the outlook at the end of the review by saying "What is the outlook?"
- **Annotating the graphic aid:** (Recommended: Resident/APP)
  - Someone on the team will be responsible for writing the patient's initials, room number, and date on the graphic aid. They will also list any overnight events, draw the star related to prognosis, and write bullet points next to the star to briefly convey the Best Case Scenario to family members. If they have questions about what overnight events should be listed, or how to represent the Best Case Scenario with bullet points on the graphic aid, they should ask the person who is generating the outlook.
- **Confirming graphic aid notes with the team:** (Suggested: Initiated by Resident/APP)
  - It may be helpful to pause after generating the outlook and review the graphic aid as a team to ensure everyone is on the same page. The team can confirm the location of the star (Best Case Scenario) in relation to the square (Worst Case Scenario), what event(s) are listed at the top of the day, and what bullet points describing the Best Case Scenario are listed next to the star.
- **Using the graphic aid with patients and families/loved ones:** (Any team member)
  - If family is at the patient's bedside, the physicians or APPs caring for the patient should use the graphic aid during their daily communication with family members. If daily updates with family occur over the phone, it is still useful to describe the Best and Worst Case Scenarios. Remember that the Best Case Scenario describes "what we are hoping for" and the Worst Case Scenario describes "what we are worried about".
  - Discussing the graphic aid with families is not limited to physicians or APPs. Nurses, therapists, pharmacists, and other team members can all use the graphic aid to discuss the patient's care or outlook with their family members. If the family has additional questions about the graphic aid any team member can reach out to resident physicians, APPs, or attending physicians to further discuss the graphic aid with the family.
- **Filling out the back side of the graphic aid:** (Patients, family members, any team member)
  - Family members can fill out the back side of the graphic aid to share more about their loved one. Anyone on the team or who participates in the patient's care can encourage the family to complete this and assist them if needed.

Resources

- Visit our website at www.patientpreferences.org/bcwc-icu/
- Best Case/Worst Case ICU Graphic Aid available online
- Sample Cases
    - Case 1 Patient Story (AB)
    - Case 1 Video
    - Case 2 Patient Story (SD)
    - Case 2 Video
- Video resources
    - Learn more about BC/WC-ICU by watching this video https://www.youtube.com/watch?v=31pv2Rlp6R4
    - Watch an ICU team demonstrating how to use BC/WC-ICU https://www.youtube.com/watch?v=93I18zvt4Xg

To contact the study team

- At the University of Wisconsin:
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