Activity 3.2.5
Medical Surge

DATE	PORTAL DAY	LESSON	TURN IN
Tuesday 2026-12-08	**Surge resource debate**	**Lesson 3.2 Emergency Response**	**Exit ticket**

Where this sits. Single day. You run the regional response as a table-top simulation.

01 Why today matters

The storm cut roads and power across the region, and now three medical facilities have to treat far more people than any of them was built for.

You will find out today that a facility's capacity is set by whichever resource runs out first, not by how much of everything it has.

02 What you already know

- You can triage patients and defend a ranking.
- You have seen how limited staff and equipment force hard choices, one patient at a time. Today it is a whole region at once.
- From maths, you know how to compare quantities that are measured in different units by converting them to a common one first.

WHAT THIS SHEET WILL NOT TELL YOU

- This sheet does not tell you where to put the tent, the helicopter, or the ambulances. That is the decision the whole simulation is testing.
- It does not give you the best strategy. You will find that by comparing scores with other teams afterwards.

03 Vocabulary

TERM	WHAT IT MEANS, PLAINLY
medical surge	When the number of new patients meets or passes what a hospital can actually handle.
surge capacity	How many extra patients a facility can triage, treat, and manage on top of its normal load. Set by space, staff, supplies, equipment, and medicine together.
limiting factor	The one resource that runs out first and therefore caps the whole system. Adding more of anything else changes nothing until you fix the limiting one.
disaster response plan	A written set of guidelines, prepared in advance, for who does what when a disaster hits.
disaster preparedness	Everything done before a disaster to reduce its effects: plans, supplies, drills, agreements between facilities.
infrastructure	The physical structures a response depends on. Roads, bridges, power, water, buildings.

resource allocation	Deciding where limited people, supplies, and equipment go.
mobile medical facility	A tent or vehicle set up to treat patients away from a permanent building, placed where the patients are.
deploy	To move a resource to where it is needed and put it into use.
redistribute	To move resources between facilities so the ratios at each one make sense.
pandemic	An epidemic spread across several countries or continents. Another cause of a medical surge, and one that hits every region at once instead of one.

Every term on this list is flagged for the illustrated glossary, scoped to this activity only. Terms are not shared forward or backward between activities, because a definition from a later activity can hand you an answer you were supposed to derive.

04 How to do the work

1. With a partner, list as many causes of a medical surge as you can that are not storms. Two minutes, go fast, quantity first.
2. Answer in your notebook: what types of resources does a hospital actually need to treat patients? Get past 'doctors' to a real list.
3. Form your group and collect the game components: the regional map, three facility cards for the tent, hospital, and clinic, and four game pieces, which are a helicopter, a medical tent, and two ambulances.
4. Study the map before you place anything. Find the hospital, the clinic, the river, the bridges, and which zones are only reachable by one road.
5. Decide where to place your four pieces, one per square, and place them. Balance coverage against distance to a facility. The helicopter ignores damage, roads, and bridges; the ambulances do not, and they must use a bridge to cross the river.
6. Find your scenario letter and copy its starting resource values into the Initial column on each facility card.
7. Learn the ratios you are being given, then write them at the top of your page: medicine should not exceed the number of beds, equipment should be about half the medicine, and staff about one third the medicine.
8. Ask your teacher two questions before you compute anything, and write the answers down. First, when you calculate capacity, does medicine count at face value, one dose per patient, alongside staff times 3 and equipment times 2? Second, what is each facility's bed count? The instructions leave both unstated and every group in the room needs the same rule or the scores mean nothing.
9. You get three minutes to redistribute. Look for surpluses and shortages against the ratios, subtract from one facility's Redist. column and add to another's. Keep totals honest; nothing appears out of nowhere.
10. Calculate each facility's capacity. Multiply staff by 3 and write it down. Multiply equipment by 2 and write it down. Take medicine and beds by the rule your teacher just gave you. Then circle the LOWEST of those converted values. That lowest number is the capacity. It is not the total and it is not the average.
11. Get your scenario sheet. Draw an X through each damaged zone on your map and write the number of victims into the small box in each zone.
12. If victims are in the square where you put the tent, move them straight onto the tent's Patients field and erase them from the map. If the storm damaged the tent's square, remove 1 staff, 2 equipment, and 4 medicine from the tent card. If it damaged an ambulance or the helicopter square, mark off two movement tallies on that piece.
13. Aid arrives from a neighbouring town: 2 staff, 3 equipment, 6 medicine. Distribute it across your three facilities in the Surge column. Put it where it lifts a limiting factor, not where there is room on the card.
14. Read the vehicle movement and transport rules, then run search and rescue. Vehicles move in any direction including diagonally. Mark off a tally per square moved. An ambulance carries up to three patients, spends two tallies to cross a

damaged square, and must use a bridge. The helicopter carries up to two and ignores damage, roads, and bridges. Stop when all three vehicles are out of movement.

15 Score it. For each facility, compare final patients to the capacity you circled and record how many are over. Add all the over-capacity patients together, add every victim still left on the map, and add those two numbers. Lower is better and zero is perfect.

16 Identify the limiting factor at each of your three facilities and write down what you would place or redistribute differently if you ran it again.

17 Compare scores across the class and write down which strategies produced the lowest ones.

05 Safety

READ EVERY LINE BEFORE YOU START

- Table-top day. Pencils and erasers, no equipment, no chemicals.
- This is a simplified game and it is missing things that matter enormously in a real disaster: how long treatment takes, patients who get worse while waiting, staff who have been awake for twenty hours, and the fact that everyone is moving at the same time rather than in turns. Say which simplification you think mattered most to your score.
- The victims on this map are counters in a game. Real medical surge decisions put people in an order and some of them do worse for it. Keep the arithmetic and keep the seriousness.

06 Where students get stuck

- Adding resources together to get capacity. Capacity is the smallest converted value, not the sum. A facility with 60 medicine, 20 equipment, and 2 staff can treat 6 patients, not 82. That is the whole lesson.
- The unstated rule. The instructions never say whether medicine counts one to one, and bed counts are missing from the starting table. If your group assumes one thing and the group next to you assumes another, your scores are not comparable. Get the rule from your teacher, write it at the top of the page, and use it everywhere.
- Redistributing to make the cards look tidy. Even numbers across three facilities feel satisfying and usually score worse. Move resources to raise the lowest converted value somewhere; that is the only move that raises capacity.
- Putting the tent where the map looks empty. Put it where victims are and a vehicle cannot easily reach, because the tent is the only piece that treats people where they already are.
- Forgetting the bridges. Ambulances cannot cross the river anywhere else, and a route that ignores that is not a route.
- Spending all movement collecting from the biggest pile of victims. Time is measured in tallies. Four trips of two beat one perfect trip of six if the tallies run out first.
- Treating leftover victims as free. They are added straight into your score. A victim you never reached costs exactly as much as a patient sent to a facility that was already over capacity.

07 What you turn in

EXIT TICKET

Exit ticket. Three lines. One: your final score, with the two numbers that made it. Two: the limiting factor at each of your three facilities. Three: the single placement or redistribution decision you would change, and the reason. Your map, facility cards, capacity calculations, and reflection stay in your notebook.

08 Check yourself

- [ ] A clinic has 30 medicine, 8 equipment, and 4 staff. Using staff times 3 and equipment times 2, what is its capacity, and which resource is limiting? (How to do the work, step 10)
- [ ] Define surge capacity in your own words, and name two things it depends on. (Vocabulary)
- [ ] Why does adding more medicine to a facility that is short of staff not help? (Where students get stuck)