

Problem definition

Your goal: Define a medical innovation problem with a clear, evidence-based problem statement.

One product: Innovation problem definition: specific problem statement supported by cited evidence, and a named list of affected stakeholders.

Question: Who needs what, what evidence supports the need, and what could be measured without inventing a result?

Start the work

Keep the March 17 criterion and open questions if available; S1 supplies a tentative recovery route.

1. Choose a healthcare problem from your earlier work or research.
2. Write a specific, measurable problem statement.
3. Cite evidence showing the problem is real and significant.
4. Identify the stakeholders most affected.
5. Submit your problem definition.

Save the same record locally if access or the exact assignment is missing. Ask for what you need for actual submission, official activity, credit policy and remaining course work.

Words you will use

problem statement

A concise description of who has a need, what the need is and where it occurs.

medical innovation

A new or changed approach intended to address a health-related need.

specific

Clear about the people, need and setting being discussed.

measurable

Described so a stated feature or outcome could be counted or otherwise checked.

evidence

A traceable fact or record used to support a bounded claim.

citation

Information that identifies the source of a fact.

credible source

A source whose methods, authority and limits fit the claim.

significant need

A need worth investigating for a stated reason; this phrase is not a claim of statistical significance.

stakeholder

A person or group affected by a problem or design decision.

criterion / criteria

A goal used to judge success; criteria is the plural.

constraint

A boundary a design must respect.

planned measure

A specified way to examine progress later, with no result yet.

baseline

A starting measurement used for comparison; none is supplied for S1.

comparison control

A reference condition used to examine what differs.

question prompt list

A prepared list that helps someone consider questions to ask.

caregiver

Someone who helps another person with care or support.

random assignment

Using chance to place participants into study groups.

average / mean

The sum of values divided by how many values there are.

subgroup

A subset of the people included in a study.

intervention

A deliberately introduced change; E2 studied a preparation package.

observation

A recorded feature or event, including a published measurement.

teaching model

An invented or simplified representation used for learning.

decision

A chosen action or priority based on reasons and values.

claim

A statement defended with evidence and reasoning.

reasoning

An explanation of how evidence supports a claim.

limitation

A boundary on what the evidence can establish.

clinical benefit

An improvement in health or care outcomes; none is established for S1.

accessible format

A presentation adapted to different access needs.

tradeoff

A choice where improving one goal may make another harder to meet.

feasibility

Whether a design can be developed within its limits.

prototype

An early model of a proposed design.

CER

Claim, Evidence, Reasoning: a position, its support and the link between them.

Medicaid

A U.S. public health coverage program; E2 uses insurance categories without identifying participants.

E1: a documented communication need

AHRQ advises people to prepare questions before a healthcare visit and ask questions when they need to understand an explanation. Its public resource provides space for three priority questions. This is authoritative guidance about participation in care, not a trial of our proposed aid.

For this lesson, it supports the importance of organizing questions for a visit. It supplies no count of people who struggle, no local rate and no evidence that S1 solves the problem. A need can merit investigation without pretending its local size is known.

E2: a measured comparison and its boundary

Waltz and colleagues studied caregivers attending pediatric specialty appointments for children with undiagnosed, suspected genetic conditions. Caregivers were randomly assigned to receive pre-visit preparation, including a question prompt list, or a control condition without it.

The preparation group included 59 caregivers; the control group included 53. Questions were counted from appointment recordings. The published abstract reports an average of 4.36 questions in the preparation group and 2.83 in the control group.

This is a real published comparison of a preparation package in a specific setting. It supports investigating question preparation as a communication need. It does not test S1 or isolate which part of the package mattered.

The authors reported no intervention effect for the subgroup whose children had Medicaid or no insurance. That finding is not proof of zero possible benefit for every such caregiver. Needs and access may differ. Do not assume a result transfers to all users or proves improved health.

E3: the problem-definition rule

NGSS HS-ETS1-1 asks students to define engineering problems through criteria and constraints. It calls for requirements that can be checked and quantified where possible. Apply that rule by naming who needs what, in which setting, and how progress could be examined.

A problem statement names a need; it does not require one favored solution. Build a bigger sign is a solution choice. Help visitors find the clinic entrance names a need that different solutions could address.

A planned measure is not a measured result. Name what could be counted or checked, in what later approved comparison, and label that as a plan. Do not invent a baseline, target improvement, success rate or local patient count.

S1: optional continuity and supplied stakeholder perspectives

Original fictional case: the March 17 team considered a large-print appointment-question card with optional audio. The paper concept could work without a phone; audio would need a compatible device. These are proposed features, not observed benefits. You may adopt this as your tentative practice idea if earlier work is missing.

Today step back from the card and define the underlying question-preparation need. You may instead use your own documented problem and credible public evidence. Missing earlier work stays missing; adopting S1 does not complete it.

Possible affected groups include people preparing for visits, caregivers who help them prepare, and clinicians receiving their questions. People needing accessible formats may have different access needs. These are design considerations, not interviews or claims about all members of a group.

A visitor may value keeping questions organized. A caregiver may value helping without replacing the visitor's priorities. A clinician may value clear questions while needing time to address them. An accessible format may help access but require resources. No measured burden or stakeholder preference is supplied.

Name stakeholder groups, not real people. Explain a plausible need or burden for each and label it as a reason to investigate. Choose which group your statement centers. Use invented questions only; collect no personal health information and conduct no user or clinical testing.

R1: warmups and evidence levels

Warmup one: state one observation or rule about problem definition that you can defend from E1 or E3.

Warmup two: name a result that would make you revise its application to S1.

Sort three statements as observation, teaching model or decision. A: E2 reports an average of 4.36 questions in its preparation group. B: S1 proposes optional audio. C: the team should focus first on people preparing their own questions.

Check after sorting: for each statement, ask whether it reports a published result, describes an invented feature, or chooses a priority. A source result, fictional feature and chosen priority have different roles. None proves that S1 works.

X1: recovery, critique and limits

Remediation frame: E1 shows a documented need. E2 helps explain why investigating it is reasonable. Therefore I can claim a bounded need, but I cannot claim an untested solution works. Replace these general phrases with specific facts and your own reasoning.

Solo peer-check input: Everyone needs our audio card because it will eliminate missed questions. Find a gap in the population, setting, measure or evidence. Explain one specific repair. This supplied flawed sentence is not an actual peer's work.

Self-check: one classroom mock-up looks clear, so a writer claims the problem is solved. Name the source and comparison, apply E3, and state a method limitation. Appearance alone cannot establish question preparation or clinical benefit.

Extension: propose one additional measurement, comparison control or stakeholder perspective. Explain what finding would change your decision and how far the revised claim could go. Planning a future check does not authorize testing.

Restart at the first unfinished evidence ID or response field. Use Cornell cues for the reviewed claim, evidence boundary and decision rule. End by naming the evidence ID that most limits a stronger claim.

P1: dated work and Schoology submission check

Today is Thursday, March 18, 2027. Today's task is an evidence-based problem statement for your Lab Notebook. Confirm the official format and tracker requirement with the teacher.

Open the linked assignment and check its posted requirements and deadline. Save the problem statement, cited evidence and stakeholder list together. Submit through that route when available, or save locally and ask for access help. A saved draft does not prove submission or completion of an official activity.

Participation and any extra credit require the actual teacher policy; this practice awards no points.

Ask for what you need to complete any missing March 17 CER, actual post and classmate reply. No homework is due before this class. Independent work uses the same source cards and X1 critique.

Ask the teacher which other weekly work applies alongside today's innovation work; none of it is completed here.

The broader innovation unit requires a design brief, three criteria, two constraints, a stakeholder tradeoff, sketch and feasibility rating. Those remain separate from today's problem definition and do not become complete by writing it.

Before Friday, March 19, the schedule lists Design criteria and constraints: 25 minutes, Class Records. It also lists Design sprint and tradeoffs: 25 minutes, Lab Notebooks. These two preparation items are separate from today's 80-minute lesson.

The design-sprint branch requires three labeled concepts, criteria scores and a justified choice; solo work uses the same outputs. Friday's full proposal and feasibility check go to Lab Reports through the confirmed route. Ask for missing criteria, sketches, rubric or official inputs.

M1: a different worked problem, not a result

Original fictional practice case: a clinic classroom display contains invented supply labels in two print styles. The author stipulates that one style has smaller letters. No worker, patient or error data were collected. This case illustrates problem framing only.

Weak wording: Build a bigger label because it prevents every error. Revised problem statement: people reading the classroom supply display need to distinguish item names under its stated viewing conditions. A later approved comparison could examine correctly identified invented names across the two print styles.

Evidence and rule: the stipulated print difference identifies a feature worth examining; E3 supports naming a need and a checkable measure. The measure is planned, not observed. This fictional case cannot establish a real clinic need or prove fewer errors. The actual task must use public evidence such as E1 and E2.

Stakeholders: readers need legible information; display maintainers need labels they can update. These are proposed considerations. I would seek their perspectives before ranking the needs. I have defined a bounded problem without declaring a particular label effective.

Try the decision

Which problem definition respects today's evidence?

- Name a bounded question-preparation need, cite E1/E2 and propose a checkable measure without claiming S1 works.
- State that everyone needs S1 because E2 proves this card improves health.
- Avoid defining any problem until a finished product has been tested.

Explain your choice using the reading. Discuss it or say it to yourself. This practice does not add another submission.

Your 80-minute flow

0–10 minutes	Complete both warmups and R1 sort; check each with R1's questions.
10–25 minutes	Read E1/E2/S1, inspect M1, choose and narrow a problem.
25–45 minutes	Draft the statement, planned measure and cited evidence with limitation.
45–60 minutes	Name stakeholder groups and explain why each matters.
60–75 minutes	Revise, complete X1 self-check, save or submit; record P1 holds. Use extension if ready.
75–80 minutes	Read a peer statement or X1, identify a gap and record a repair.

Your response record

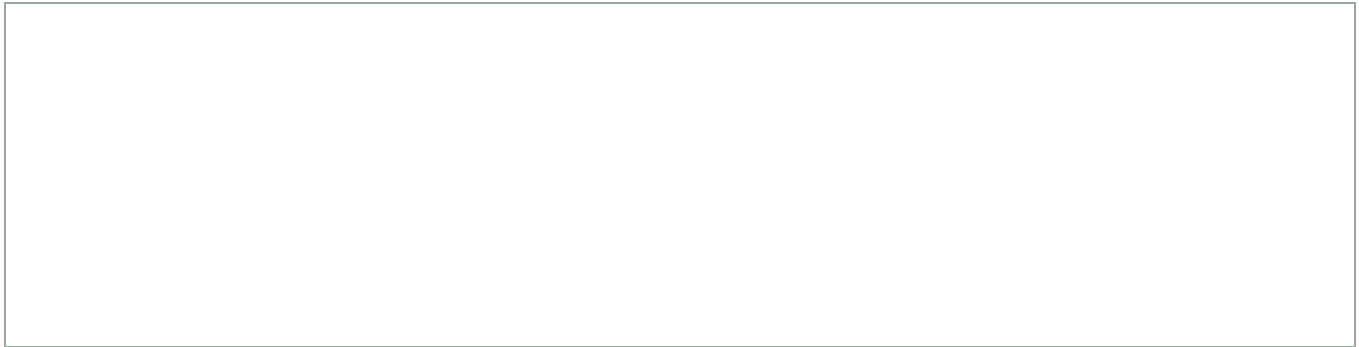
Use these labels on paper or in your document. The space below also works when this page is printed.

Warmups and evidence sort

Answer both R1 warmups and classify A, B and C. Check each answer with R1's three questions and revise one if needed.

E1 supports a source observation; E3 supplies a rule. A revision condition must name a possible finding.

Use this space or the same labeled section in your existing document. Add paper when your table, graph or drawing needs more room.

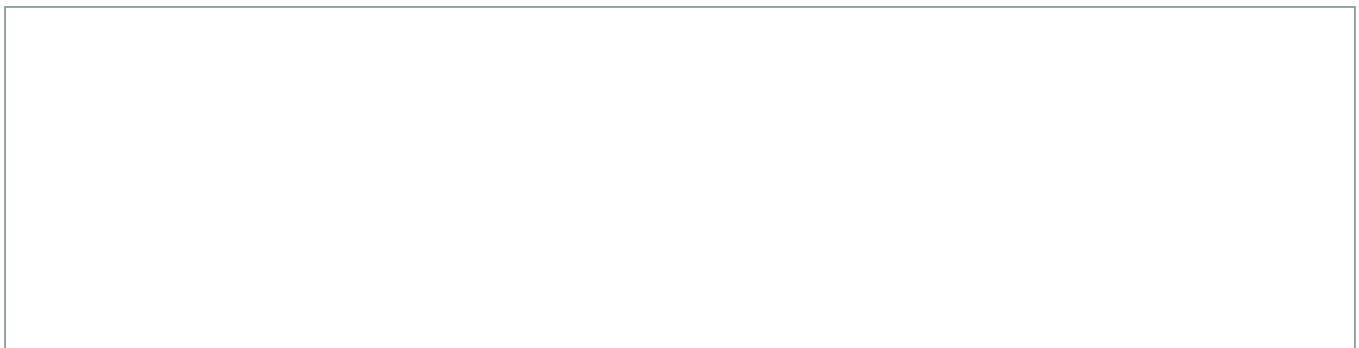


Problem choice and origin

Name your documented problem or explicitly adopt S1 as a tentative practice idea. State the people, need and setting you will focus on.

Do not turn the card into the need. Missing earlier work is not evidence.

Use this space or the same labeled section in your existing document. Add paper when your table, graph or drawing needs more room.



Specific, measurable problem statement

Write a concise problem statement. Add a planned measure and comparison that could examine progress. Clearly separate the plan from any actual result.

Name who needs what and where. Use E3. Do not invent a local rate or promise a solution.

Use this space or the same labeled section in your existing document. Add paper when your table, graph or drawing needs more room.

Cited evidence, significance and limit

Cite at least two evidence IDs with their source names. Explain why each supports investigating your problem, apply E3 and name one limitation.

For S1, E1 and E2 supply public support. Keep E2's population and package distinct from your own idea.

Use this space or the same labeled section in your existing document. Add paper when your table, graph or drawing needs more room.

Named stakeholder groups

List the affected stakeholder groups and explain why each matters. Identify the group most directly affected by your chosen need.

S1 supplies possible groups and perspectives. Label untested assumptions; use no personal names or health details.

Use this space or the same labeled section in your existing document. Add paper when your table, graph or drawing needs more room.

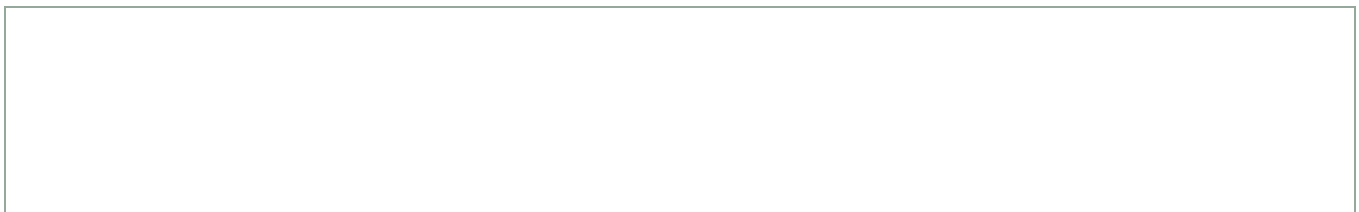


Self-check, revision and extension

Answer X1's classroom-result self-check. If ready, propose the extension and its possible effect on the claim. Name the limiting evidence ID.

Use the source, comparison, E3 rule and method limit. More confidence does not create evidence.

Use this space or the same labeled section in your existing document. Add paper when your table, graph or drawing needs more room.



Submission and next inputs

Save the statement, evidence and stakeholder list together. Check whether Schoology shows Submitted and name missing P1 inputs. Keep Friday's two preparation tasks separate.

Use the confirmed Lab Notebooks route. A draft, actual submission and official completion are different actions; check each separately.

Use this space or the same labeled section in your existing document. Add paper when your table, graph or drawing needs more room.

Peer check or solo counterpart

Read a partner's statement and identify one gap in specificity. If alone, use X1's flawed sentence and label the critique solo practice. Record your repair.

Check population, setting, measure and evidence. Do not invent a partner or copy M1 as your own response.

Use this space or the same labeled section in your existing document. Add paper when your table, graph or drawing needs more room.

Check your product

- Your problem statement is specific and evidence-based.
- You can name the stakeholders affected.
- Cite at least two evidence IDs, apply E3 and state a limitation.
- Distinguish planned measurement, published data and fictional features.

Keep the limit: Public evidence supports investigating a bounded communication need. Fictional features and a planned measure cannot prove local prevalence, clinical benefit, safety, effectiveness or official completion.

Turn in your work

Submit the problem statement, cited evidence and named stakeholder list through the linked BI assignment. After uploading, check that Schoology shows Submitted.

Save the same record locally if access or the exact assignment is missing. Ask for what you need for actual submission, official activity, credit policy and remaining course work.

[Open this assignment in Schoology.](#)

Carry forward

Define the need, trace the evidence and label the limits.

Carry the problem definition into the separate March 19 preparation and proposal requirements in P1. How will your proposed method address the specific problem you defined?

Sources and resources

[Open today's page](#)

AHRQ · Be More Engaged in Your Healthcare

Agency for Healthcare Research and Quality

<https://www.ahrq.gov/questions/be-engaged/index.html>

WALTZ · Question prompt lists and caregiver question asking in pediatric specialty appointments: A randomized controlled trial

Waltz and colleagues, Patient Education and Counseling (2023), primary research abstract in PubMed

<https://pubmed.ncbi.nlm.nih.gov/36689884/>

NGSS · HS-ETS1-1 Engineering Design

Next Generation Science Standards

<https://www.nextgenscience.org/pe/hs-ets1-1-engineering-design>