

Teach the Evidence Chain

Each lesson moves from analogy to biology to a bounded clinical decision.

Standard 45-minute lesson flow

Minutes	Teacher and student move
0-5	Carry forward the prior take-home and state today's question.
5-12	Show only the analogy panel. Ask the three observation questions.
12-18	Students write the three rules. Name where the analogy stops.
18-27	Reveal the biomedical panel. Map each rule onto the case.
27-38	Students read labeled evidence and make the concrete decision.
38-45	Reveal the strongest answer, write CER, and state the next unlock.

Day One: Recognizing and Communicating a Cleft at Birth

Students will perform a structured newborn lip-and-palate exam (inspection plus palpation), distinguish what is and is not found, and communicate a cleft finding to a family clearly and...

CARRY FORWARD
Start with what you can observe before you explain why it happened.

10-YEAR TAKEAWAY
Day-one cleft care begins with a complete exam and clear, respectful communication.

Socratic launch

Show the analogy panel only: The careful home inspector. Do not name the biology yet.

- What does the inspector check in more than one way?
- What does the inspector record even when nothing is wrong?
- Which observations would be facts, and which would be guesses?

Rules students should earn

- Inspect every relevant structure in a set order.
- Use more than one sense when a problem may be hidden.
- Record normal findings as well as abnormal findings.

Biology reveal and evidence

ID	Finding supplied in the case
D01-E1	The upper lip has a visible gap on the left side.
D01-E2	The palate gap is seen with a light and confirmed by palpation.
D01-E3	Breathing, tone, heart sounds, eyes, ears, hands, feet, and jaw size are otherwise unremarkable.

Decision and answer guidance

Situation: Mateo is breathing well. His parents ask what you found and what happens next.

Strongest option: Name the observed cleft, explain that a team and plan are available, and document the complete exam.

Evidence required: D01-E2 + D01-E3

Claim ceiling: You may describe the structural finding. You may not claim a genetic cause or final isolated-versus-syndromic classification yet.

Next handoff: We saw and named Mateo's cleft, but 'a cleft' is not precise enough for a chart or a surgical plan. Exactly which structures are...

Describing the Cleft: Type, Side, and How Complete

Students will classify a cleft by the structures involved (lip only, palate only, or both), by laterality (unilateral or bilateral, and which side), and by completeness (complete or...

CARRY FORWARD

Day-one cleft care begins with a complete exam and clear, respectful communication.

10-YEAR TAKEAWAY

A useful cleft description names the structures, the side, and the completeness as three separate choices.

Socratic launch

Show the analogy panel only: A three-part mailing address. Do not name the biology yet.

- Which address details are independent?
- What happens if one line is missing?
- Could two packages share one detail but still go to different places?

Rules students should earn

- Use one field for each kind of information.
- Do not replace three fields with one vague label.
- Check every field before making a plan.

Biology reveal and evidence

ID	Finding supplied in the case
D02-E1	The gap involves both the lip and the palate.
D02-E2	Only the left side of the lip is involved.
D02-E3	The lip gap reaches the nostril and the palate is open along its length.

Decision and answer guidance

Situation: The surgeon will use your entry to plan the first visit. The registry rejects vague labels.

Strongest option: Complete unilateral left cleft lip and palate

Evidence required: D02-E1 + D02-E2 + D02-E3

Claim ceiling: You may classify anatomy. You may not infer a syndrome from the cleft pattern alone.

Next handoff: We can describe Mateo's cleft exactly: complete, unilateral, left, lip and palate. But a precise description still does not tell us WHY. A cleft...

Is the Cleft a Clue? The Syndromic Question

Students will explain the difference between an isolated (nonsyndromic) cleft and a syndromic cleft, and use the rule 'a cleft plus other anomalies suggests a syndrome' to frame...

CARRY FORWARD

A useful cleft description names the structures, the side, and the completeness as three separate choices.

10-YEAR TAKEAWAY

A cleft is syndromic only when a pattern of additional findings supports that claim.

Socratic launch

Show the analogy panel only: One warning light or a dashboard pattern?. Do not name the biology yet.

- How does one warning differ from several linked warnings?
- Which situation suggests a broader system problem?
- What information would you check before deciding?

Rules students should earn

- One finding can be local.
- A repeated pattern across systems can signal a larger condition.
- Absence of red flags is evidence, but not absolute proof.

Biology reveal and evidence

ID	Finding supplied in the case
D03-E1	Mateo has a complete unilateral left cleft lip and palate.
D03-E2	No jaw, heart, limb, eye, ear, or tone abnormality was found on the newborn exam.
D03-E3	Family history and targeted syndrome checks are not yet complete.

Decision and answer guidance

Situation: The team must choose how to describe the case today without overstating what is known.

Strongest option: Cleft under evaluation, with no additional anomalies found so far

Evidence required: D03-E2 + D03-E3

Claim ceiling: You may state that no red flags have been found so far. You may not call the cleft isolated or nonsyndromic until the evaluation is complete.

Next handoff: We learned that a cleft can ride alone or come bundled with other features, so the only honest answer right now is 'we do...'

The Short List: Ruling Out the Big Cleft Syndromes

Students will match each of four high-stakes cleft syndromes (Van der Woude, 22q11.2 deletion, Stickler, Pierre Robin sequence) to its defining red flag and apply the checklist to...

CARRY FORWARD

A cleft is syndromic only when a pattern of additional findings supports that claim.

10-YEAR TAKEAWAY

A red-flag checklist turns a broad syndrome question into specific findings that can be checked.

Socratic launch

Show the analogy panel only: Airport screening uses named checks. Do not name the biology yet.

- Why are the checkpoints named?
- Which checks are visual and which need a tool?
- What would happen if the screener relied on a general feeling?

Rules students should earn

- Break a broad risk into visible checks.
- Match each concern to a specific sign.
- A negative check narrows the list but does not erase all uncertainty.

Biology reveal and evidence

ID	Finding supplied in the case
D04-E1	No lower-lip pits are seen.
D04-E2	Jaw size and breathing are normal.
D04-E3	Heart exam, eye exam, and limb exam are unremarkable.

Decision and answer guidance

Situation: The team has time for one next step before the family leaves.

Strongest option: Complete the structured family history and genetics examination

Evidence required: D04-E1 + D04-E2 + D04-E3

Claim ceiling: You may say named red flags are absent on today's screen. You may not say every possible syndrome has been ruled out.

Next handoff: We now have a checklist of red flags, and Mateo trips none of them on inspection. But a checklist you eyeball by hand can...

The Exam and the Test That Sort Syndromic from Isolated

Students will describe the head-to-toe dysmorphology exam and the chromosomal microarray (CMA), and use the diagnostic-yield data (high yield when other anomalies are present, near-zero in isolated cleft...

CARRY FORWARD

A red-flag checklist turns a broad syndrome question into specific findings that can be checked.

10-YEAR TAKEAWAY

Testing is most useful when the history and exam create a question the test can answer.

Socratic launch

Show the analogy panel only: Choose the right tool after you inspect the wall. Do not name the biology yet.

- Why does the expert inspect before choosing a tool?
- Which tool is broad and which is targeted?
- Could the most expensive tool still be the wrong first choice?

Rules students should earn

- Define the question before ordering a test.
- Match test scale to the suspected problem.
- A normal result does not erase evidence outside the test's range.

Biology reveal and evidence

ID	Finding supplied in the case
D05-E1	Mateo's structured exam shows the cleft but no additional congenital anomalies.
D05-E2	The three-generation family history shows no repeated cleft pattern or matching syndrome features.
D05-E3	Chromosomal microarray is best at detecting missing or extra DNA segments, not every possible DNA change.

Decision and answer guidance

Situation: Mateo has one major structural finding and no additional anomalies after a careful exam.

Strongest option: Document the completed genetics evaluation and reserve testing for new findings or a specific question

Evidence required: D05-E1 + D05-E2 + D05-E3

Claim ceiling: You may justify a measured testing plan. You may not say a normal microarray proves there is no genetic contribution.

Next handoff: We sorted the exam and tests that separate a syndrome from a lone cleft, and Mateo's structured exam and testing point toward an isolated...

Keeping Mateo Fed and Growing

Students will explain why an open palate prevents normal sucking and choose feeding interventions (specialized bottle, positioning) that let Mateo grow.

CARRY FORWARD

Testing is most useful when the history and exam create a question the test can answer.

10-YEAR TAKEAWAY

An open palate limits suction, so feeding support replaces suction with flow control and positioning.

Socratic launch

Show the analogy panel only: A straw with a side hole cannot hold suction. Do not name the biology yet.

- Where does air enter the damaged straw?
- What happens to pressure inside it?
- How could you move liquid without relying on suction?

Rules students should earn

- A sealed pathway is needed to build negative pressure.
- A leak reduces suction even when effort increases.
- Assisted flow can replace the missing pressure step.

Biology reveal and evidence

ID	Finding supplied in the case
D06-E1	Mateo tires during feeding and cannot maintain suction on a standard bottle.
D06-E2	Breathing is calm and oxygen level remains normal during the observed feed.
D06-E3	With an assisted-delivery bottle, upright position, and pauses, intake improves.

Decision and answer guidance

Situation: Mateo must show a safe plan that his family can repeat at home.

Strongest option: Use an assisted-delivery bottle, upright position, paced squeezes, and weight follow-up

Evidence required: D06-E1 + D06-E2 + D06-E3

Claim ceiling: You may recommend the observed safe strategy. You may not assume every infant with a cleft has the same feeding ability.

Next handoff: We answered today's question: Mateo can be fed with the right bottle and position. But most is not all. A few cleft babies struggle...

When a Cleft Is an Airway Emergency

Students will identify the Pierre Robin sequence triad and explain why glossoptosis turns a cleft into an airway emergency, then place Mateo on that risk spectrum.

CARRY FORWARD

An open palate limits suction, so feeding support replaces suction with flow control and positioning.

10-YEAR TAKEAWAY

In Robin sequence, the small jaw lets the tongue fall back and block the airway; the palate gap itself is not the blockage.

Socratic launch

Show the analogy panel only: A pillow blocks a narrow doorway. Do not name the biology yet.

- What makes the doorway easy to block?
- Which object moves into the opening?
- Would cutting a hole in the wall explain the blockage?

Rules students should earn

- A narrow space leaves less room for movement.
- Position can turn a soft structure into an obstruction.
- Treat the obstruction mechanism, not an unrelated opening.

Biology reveal and evidence

ID	Finding supplied in the case
D07-E1	Mateo has normal jaw size and no tongue-back position on examination.
D07-E2	Breathing is quiet, oxygen level is normal, and there are no retractions.
D07-E3	A comparison infant has micrognathia, glossoptosis, noisy breathing, and oxygen drops when lying flat.

Decision and answer guidance

Situation: Only one bassinet needs immediate airway escalation.

Strongest option: Escalate the comparison infant with small jaw, tongue-back position, and oxygen drops

Evidence required: D07-E1 + D07-E2 + D07-E3

Claim ceiling: You may rule on the current airway signs. You may not claim that Mateo can never develop a breathing problem later.

Next handoff: Mateo's airway is safe, his cleft is isolated, and feeding is handled. Step back: how common is a cleft like his, and in whom...

How Common Is Mateo's Cleft, and in Whom?

Students will read real cleft epidemiology data and describe how prevalence varies by cleft type, sex, ancestry, and laterality, then locate Mateo's profile within the most common pattern.

CARRY FORWARD

In Robin sequence, the small jaw lets the tongue fall back and block the airway; the palate gap itself is not the blockage.

10-YEAR TAKEAWAY

Epidemiology describes patterns in groups; it does not identify the cause of one child's cleft.

Socratic launch

Show the analogy panel only: A weather map shows patterns, not one raindrop's cause. Do not name the biology yet.

- What can the map tell you about a region?
- What can it not tell you about one raindrop?
- Which patterns would need a denominator?

Rules students should earn

- Count events relative to the population at risk.
- Separate group patterns from individual explanations.
- Treat ancestry patterns as descriptive, not deterministic.

Biology reveal and evidence

ID	Finding supplied in the case
D08-E1	Cleft lip with or without cleft palate occurs in roughly 1 in 1,000 births in current U.S. CDC estimates.
D08-E2	Unilateral clefts are more common than bilateral clefts, and left-sided unilateral clefts are more common than right-sided ones.
D08-E3	Mateo is one patient with a specific history.

Decision and answer guidance

Situation: Both sentences must use the same data without confusing group patterns with personal cause.

Strongest option: Describe the group pattern and state that it does not identify Mateo's cause

Evidence required: D08-E1 + D08-E2 + D08-E3

Claim ceiling: You may describe prevalence and pattern. You may not use group data to claim why Mateo's cleft happened.

Next handoff: Mateo's cleft fits the single most common pattern, which means it is not rare and not random. So what actually caused it: his genes...

What Caused Mateo's Cleft?

Students will explain that nonsyndromic clefts arise from many small genetic influences combined with environmental factors (multifactorial cause), using real twin and risk-factor data, and apply that model...

CARRY FORWARD

Epidemiology describes patterns in groups; it does not identify the cause of one child's cleft.

10-YEAR TAKEAWAY

Most isolated clefts reflect many small genetic and environmental influences crossing a developmental threshold.

Socratic launch

Show the analogy panel only: Many small drops can fill a threshold cup. Do not name the biology yet.

- Does one drop fill the cup?
- Could different combinations reach the same line?
- Can you identify one guilty drop after the cup overflows?

Rules students should earn

- Many small influences can add together.
- Different combinations can cross the same threshold.
- Risk is not certainty and association is not blame.

Biology reveal and evidence

ID	Finding supplied in the case
D09-E1	Mateo has no clear syndrome pattern or single-gene family pattern.
D09-E2	Research finds many genetic regions associated with common nonsyndromic clefts.
D09-E3	Smoking and some other pregnancy exposures are associated with higher risk, but no exposure in Mateo's case proves causation.

Decision and answer guidance

Situation: Your answer must be accurate, clear, and free of blame.

Strongest option: Explain multifactorial risk and that no single cause can be identified in this case

Evidence required: D09-E1 + D09-E2 + D09-E3

Claim ceiling: You may explain multifactorial risk. You may not claim a specific exposure or variant caused Mateo's cleft.

Next handoff: Mateo's cleft came from many small influences working together, not one fixable thing. So if no single cause can be removed, what is the...

The Plan for the Next 18 Years

Students will order the major stages of cleft care from birth through adolescence and explain why each is timed when it is, building Mateo's staged multidisciplinary care timeline.

CARRY FORWARD

Most isolated clefts reflect many small genetic and environmental influences crossing a developmental threshold.

10-YEAR TAKEAWAY

Cleft care follows developmental windows, so the right action depends on what the child needs next.

Socratic launch

Show the analogy panel only: A train schedule is built around connections. Do not name the biology yet.

- Why can one missed connection affect later steps?
- Which stops are fixed and which can vary?
- Who keeps the whole route visible?

Rules students should earn

- Sequence work around readiness and dependency.
- Protect important windows without pretending every date is exact.
- Assign someone to coordinate the whole route.

Biology reveal and evidence

ID	Finding supplied in the case
D10-E1	Mateo needs feeding and growth follow-up now, before surgery.
D10-E2	Lip and palate operations are staged at different times for different purposes.
D10-E3	Hearing, speech, dental growth, psychosocial health, and facial growth require repeated checks over years.

Decision and answer guidance

Situation: The family wants a one-page plan that shows what happens now, in infancy, in childhood, and in adolescence.

Strongest option: Create a staged plan tied to developmental needs and review points

Evidence required: D10-E1 + D10-E2 + D10-E3

Claim ceiling: You may provide typical windows and ownership. You may not promise exact dates before individual evaluation.

Next handoff: We have an 18-year care plan for Mateo, but what do the operations on that plan actually fix? What do the surgeries accomplish clinically?

What the Surgeries Are Actually For

Students will explain the clinical purpose and approximate timing of cleft lip repair (cheiloplasty) and cleft palate repair (palatoplasty) from a family's point of view, distinguishing the form...

CARRY FORWARD

Cleft care follows developmental windows, so the right action depends on what the child needs next.

10-YEAR TAKEAWAY

Lip repair restores form, while palate repair separates spaces and supports speech; different jobs require staged operations.

Socratic launch

Show the analogy panel only: Repair the front door and the room divider for different reasons. Do not name the biology yet.

- Which repair changes the outside form?
- Which repair separates two spaces?
- Why would the jobs occur at different times?

Rules students should earn

- Name the function before choosing the repair.
- Different structures can require different procedures.
- Timing follows the problem each repair prevents.

Biology reveal and evidence

ID	Finding supplied in the case
D11-E1	Mateo's parents want the lip and nose to have continuous form.
D11-E2	The open palate connects the mouth and nose and cannot support normal oral pressure for speech.
D11-E3	Speech sounds begin developing during the same period in which palate repair is commonly planned.

Decision and answer guidance

Situation: The family asks why both problems cannot be fixed in one visit and forgotten.

Strongest option: Explain two structures, two jobs, and individualized timing

Evidence required: D11-E1 + D11-E2 + D11-E3

Claim ceiling: You may explain typical goals and timing. You may not promise a specific operation date or outcome.

Next handoff: We answered why the palate is repaired early to protect speech. But that raises a new question: how exactly does a repaired palate let...

How a Repaired Palate Lets Mateo Talk

Students will explain how the soft palate seals off the nose for speech, why a cleft causes hypernasal speech and nasal air escape (velopharyngeal insufficiency), and what the...

CARRY FORWARD

Lip repair restores form, while palate repair separates spaces and supports speech; different jobs require staged operations.

10-YEAR TAKEAWAY

Clear pressure sounds need the soft palate to move upward and seal the mouth from the nose.

Socratic launch

Show the analogy panel only: A pressure door must close before the pump works. Do not name the biology yet.

- What happens if the door stays open?
- Which sounds would need pressure most?
- Is the problem the pump, the door, or both?

Rules students should earn

- Pressure builds only after a passage is sealed.
- A moving valve must close at the right time.
- Leaks create a predictable pattern of weak pressure.

Biology reveal and evidence

ID	Finding supplied in the case
D12-E1	Mateo's voice sounds overly nasal during connected speech.
D12-E2	The consonants p, b, t, d, k, and g sound weak and nasal air is visible on a mirror.
D12-E3	Vowels and low-pressure sounds are easier to produce.

Decision and answer guidance

Situation: You must decide whether today's pattern needs ordinary articulation practice alone or a full velopharyngeal evaluation.

Strongest option: Refer for velopharyngeal evaluation while continuing appropriate speech support

Evidence required: D12-E1 + D12-E2 + D12-E3

Claim ceiling: You may identify a pattern consistent with VPI. You may not diagnose the exact structural cause without further evaluation.

Next handoff: We answered how the palate lets Mateo make clear speech and what VPI is. But the same little muscles near the palate do another...

Protecting Mateo's Hearing

Students will explain why cleft palate leads to recurrent middle-ear fluid and conductive hearing loss (Eustachian tube dysfunction) and why the team monitors hearing and uses ear tubes.

CARRY FORWARD

Clear pressure sounds need the soft palate to move upward and seal the mouth from the nose.

10-YEAR TAKEAWAY

Cleft-related middle-ear fluid can reduce hearing, so repeated hearing checks protect speech development.

Socratic launch

Show the analogy panel only: A drain that does not open lets fluid collect. Do not name the biology yet.

- What happens when the drain stays closed?
- Why can the surface look fine while fluid collects behind it?
- How would you test whether flow is blocked?

Rules students should earn

- Poor drainage allows fluid to remain.
- A hidden fluid problem can affect function before causing pain.
- Repeated measurement catches changes over time.

Biology reveal and evidence

ID	Finding supplied in the case
D13-E1	Mateo passed the newborn hearing screen.
D13-E2	At follow-up, both eardrums show reduced movement and middle-ear fluid.
D13-E3	Mateo sometimes does not turn toward soft speech sounds.

Decision and answer guidance

Situation: The family asks whether the original pass means no further hearing checks are needed.

Strongest option: Complete age-appropriate hearing testing and coordinate ear management

Evidence required: D13-E1 + D13-E2 + D13-E3

Claim ceiling: You may say hearing is at risk and testing is needed. You may not state the degree of loss before audiology results.

Next handoff: We answered why the cleft palate threatens hearing and how the team protects it. But Mateo's first teeth are coming in, and his parents...

Caring for Mateo's Teeth and Bite

Students will describe the dental anomalies common in cleft lip and palate and explain why dental and orthodontic care is staged across childhood, including alveolar bone grafting.

CARRY FORWARD

Cleft-related middle-ear fluid can reduce hearing, so repeated hearing checks protect speech development.

10-YEAR TAKEAWAY

Dental and orthodontic care is staged because teeth, bone, and facial growth change on different schedules.

Socratic launch

Show the analogy panel only: Build the roadbed before aligning the lanes. Do not name the biology yet.

- Which step must happen before lanes can be aligned?
- What would fail if final paving came first?
- Which conditions would make the schedule change?

Rules students should earn

- Foundation changes can precede alignment.
- Sequence depends on growth and eruption.
- Different specialists own connected steps.

Biology reveal and evidence

ID	Finding supplied in the case
D14-E1	Mateo's cleft passes through the left tooth-bearing alveolar ridge.
D14-E2	One lateral incisor is missing and nearby teeth are rotated.
D14-E3	The permanent canine has not yet reached the usual graft-planning stage.

Decision and answer guidance

Situation: The family asks whether all tooth and bone work should happen immediately.

Strongest option: Use preventive dental care now and coordinate later graft and orthodontic timing with eruption

Evidence required: D14-E1 + D14-E2 + D14-E3

Claim ceiling: You may outline the sequence. You may not set a surgery date without current imaging and eruption assessment.

Next handoff: We answered why the cleft changes Mateo's teeth and bite and why dental care is staged. But now Mateo has a lot going on...

Is Mateo Growing Well?

Students will explain why cleft infants are at risk for poor feeding and slow growth, and how the pediatrician uses growth charts and developmental checks to keep the...

CARRY FORWARD

Dental and orthodontic care is staged because teeth, bone, and facial growth change on different schedules.

10-YEAR TAKEAWAY

Growth decisions come from trends across time, not one measurement on one day.

Socratic launch

Show the analogy panel only: A movie shows change that a snapshot cannot. Do not name the biology yet.

- What can the sequence show that one frame cannot?
- Which direction is the trend moving?
- When would a single low point be less concerning?

Rules students should earn

- Repeat measurements in the same way.
- Look for direction and rate of change.
- Interpret the trend with development and clinical context.

Biology reveal and evidence

ID	Finding supplied in the case
D15-E1	Mateo's weight dropped during the first feeding week but rose steadily after the assisted-feeding plan began.
D15-E2	Length and head circumference continue along their prior percentile bands.
D15-E3	Motor, language, and social milestones are appropriate for the visit.

Decision and answer guidance

Situation: You must decide whether to admit Mateo for urgent growth failure or continue the current plan with close follow-up.

Strongest option: Continue the effective feeding plan with scheduled growth and development checks

Evidence required: D15-E1 + D15-E2 + D15-E3

Claim ceiling: You may judge the current trend. You may not promise that later growth or facial development will stay normal.

Next handoff: We answered how the team keeps Mateo growing and developing well. His body and growth are well cared for. But a child is more...

Supporting Mateo and His Family Beyond the Body

Students will identify the main psychosocial needs of a child with a cleft and their family across childhood and name realistic team supports for each, while recognizing where...

CARRY FORWARD

Growth decisions come from trends across time, not one measurement on one day.

10-YEAR TAKEAWAY

Psychosocial care belongs in the treatment plan because health includes confidence, relationships, school, and family well-being.

Socratic launch

Show the analogy panel only: A bridge needs support below the visible roadway. Do not name the biology yet.

- Which supports are easy to see?
- What happens if hidden supports weaken?
- How would you inspect support before a crisis?

Rules students should earn

- Visible function depends on less visible support.
- Check support before failure is obvious.
- Strength can grow through family, peer, school, and clinical connections.

Biology reveal and evidence

ID	Finding supplied in the case
D16-E1	Mateo's family reports stress from repeated appointments and worry about other people's reactions.
D16-E2	Mateo participates in class but avoids speaking during a new peer group activity.
D16-E3	No crisis signs are reported, and Mateo identifies one trusted adult and one supportive friend.

Decision and answer guidance

Situation: The family asks whether support is necessary if Mateo is medically stable.

Strongest option: Offer a private check-in, family resources, and a school support plan based on Mateo's preferences

Evidence required: D16-E1 + D16-E2 + D16-E3

Claim ceiling: You may identify needs reported in the case. You may not assign feelings, diagnoses, or stigma experiences that Mateo did not report.

Next handoff: We answered what Mateo's family needs beyond the body. But we have assumed his team will provide all of this. Does every child like...

Does Every Child Like Mateo Get the Same Care?

Students will explain that access to cleft care is unequal across geography, income, and population, describe the global burden of untreated clefts, and identify access barriers relevant to...

CARRY FORWARD
Psychosocial care belongs in the treatment plan because health includes confidence, relationships, school, and family well-being.

10-YEAR TAKEAWAY
Equal treatment is not always equitable care; the plan must remove the barriers that block access to the same health goal.

Socratic launch

Show the analogy panel only: The same bridge is not equally reachable from every road. Do not name the biology yet.

- Is the bridge itself different?
- Which road barriers change who can use it?
- What could be redesigned without lowering the destination?

Rules students should earn

- Measure access to the outcome, not only whether a service exists.
- Name the barrier before choosing the solution.
- Keep the clinical goal while changing the route.

Biology reveal and evidence

ID	Finding supplied in the case
D17-E1	The family missed two visits because the caregiver could not leave work and the clinic is across the city.
D17-E2	The next required services are hearing and speech follow-up, both available through the hospital network.
D17-E3	The network offers combined appointments, transportation support, and telehealth check-ins when clinically appropriate.

Decision and answer guidance

Situation: You need a recovery plan that protects care without blaming the family.

Strongest option: Bundle visits, arrange transportation support, and use appropriate telehealth follow-up

Evidence required: D17-E1 + D17-E2 + D17-E3

Claim ceiling: You may respond to the documented barriers. You may not invent income, immigration, language, or family details not in the case.

Next handoff: We answered that access is unequal, and that Mateo is fortunate to have a full team. But even with full access, the work is...

A Repaired Cleft Is Not a Cured Cleft

Students will identify the major long-term complications after cleft repair (oronasal fistula, velopharyngeal insufficiency, midface hypoplasia, otitis media with hearing loss, and obstructive sleep apnea) and explain which...

CARRY FORWARD

Equal treatment is not always equitable care; the plan must remove the barriers that block access to the same health goal.

10-YEAR TAKEAWAY

A repaired cleft still needs surveillance because speech, hearing, teeth, airway, and growth can change later.

Socratic launch

Show the analogy panel only: Different smoke detectors guard different rooms. Do not name the biology yet.

- Why is one detector not enough for the whole building?
- Which signal belongs to which room?
- What happens if nobody checks the batteries?

Rules students should earn

- Match each risk to a detection method.
- Assign ownership for every alert.
- Repeat checks because conditions change over time.

Biology reveal and evidence

ID	Finding supplied in the case
D18-E1	Mateo has new nasal air escape during fast speech.
D18-E2	Hearing is stable, and middle-ear fluid is not present today.
D18-E3	The dental team notes a narrowing upper arch during growth.

Decision and answer guidance

Situation: You must route each finding to the right specialist and decide what happens first.

Strongest option: Prioritize speech evaluation, continue hearing surveillance, and schedule orthodontic review

Evidence required: D18-E1 + D18-E2 + D18-E3

Claim ceiling: You may identify the next evaluation. You may not diagnose the cause of a new problem before the specialist assessment.

Next handoff: We answered what can still go wrong and who catches it. But Mateo now needs a surgeon, a speech-language pathologist, an audiologist, an orthodontist...

How a Team Delivers Care Without Gaps

Students will explain why cleft care is delivered by a coordinated multidisciplinary team, name the core specialties and what each contributes, and describe how a coordinator and shared...

CARRY FORWARD

A repaired cleft still needs surveillance because speech, hearing, teeth, airway, and growth can change later.

10-YEAR TAKEAWAY

A cleft team works when specialists share one plan, one record, and clear ownership across time.

Socratic launch

Show the analogy panel only: An orchestra needs a shared score and a conductor. Do not name the biology yet.

- What happens if each section uses a different score?
- Does the conductor replace the specialists?
- How does the group know who enters next?

Rules students should earn

- Keep one shared plan.
- Preserve specialist expertise while coordinating timing.
- Name who owns the next action and handoff.

Biology reveal and evidence

ID	Finding supplied in the case
D19-E1	Mateo has three follow-up actions due in different clinics within six months.
D19-E2	The speech finding affects surgical planning, and hearing status affects speech interpretation.
D19-E3	The family asks for one contact person and one written plan.

Decision and answer guidance

Situation: Before the meeting ends, every next action needs an owner, date window, and handoff.

Strongest option: Publish one shared action list with named owners and a family contact

Evidence required: D19-E1 + D19-E2 + D19-E3

Claim ceiling: You may assign ownership and sequence. You may not make a specialist's clinical decision without that specialist and the family.

Next handoff: We answered how the team holds it all together: shared records, a coordinator, and continuity across 18 years. That completes the machinery of Mateo's...

Mateo's Complete Clinical Story (and His Diagnosis)

Students will synthesize the evidence gathered across all twenty lessons to reach and justify Mateo's diagnosis (isolated nonsyndromic cleft lip and palate, multifactorial, managed over a lifetime) and...

CARRY FORWARD

A cleft team works when specialists share one plan, one record, and clear ownership across time.

10-YEAR TAKEAWAY

Mateo's record supports an isolated, nonsyndromic cleft lip and palate with multifactorial risk and lifelong coordinated care.

Socratic launch

Show the analogy panel only: A case conference weighs the whole evidence board. Do not name the biology yet.

- Which cards describe anatomy, cause, and care?
- Which missing card would change the conclusion?
- How do claim limits protect the final decision?

Rules students should earn

- Use the full evidence pattern, not one striking clue.
- Separate description, classification, cause model, and care plan.
- State what would make the conclusion change.

Biology reveal and evidence

ID	Finding supplied in the case
D20-E1	The anatomy is a complete unilateral left cleft lip and palate.
D20-E2	Repeated exam, family history, and follow-up show no consistent additional syndrome pattern.
D20-E3	No single proven cause is identified, and research supports many contributing gene and environment influences.
D20-E4	Mateo needs staged feeding, surgical, speech, hearing, dental, growth, psychosocial, and coordination follow-up.

Decision and answer guidance

Situation: The panel asks for one complete diagnosis statement and one condition that would make you reopen it.

Strongest option: Isolated nonsyndromic complete unilateral left cleft lip and palate, likely multifactorial, with staged team care

Evidence required: D20-E1 + D20-E2 + D20-E3 + D20-E4

Claim ceiling: You may state the best current synthesis. You may not claim certainty about one causal variant or exposure.

Next handoff: We answered the question we have chased since day one: Mateo has isolated, nonsyndromic cleft lip and palate, multifactorial, managed over a lifetime. But...