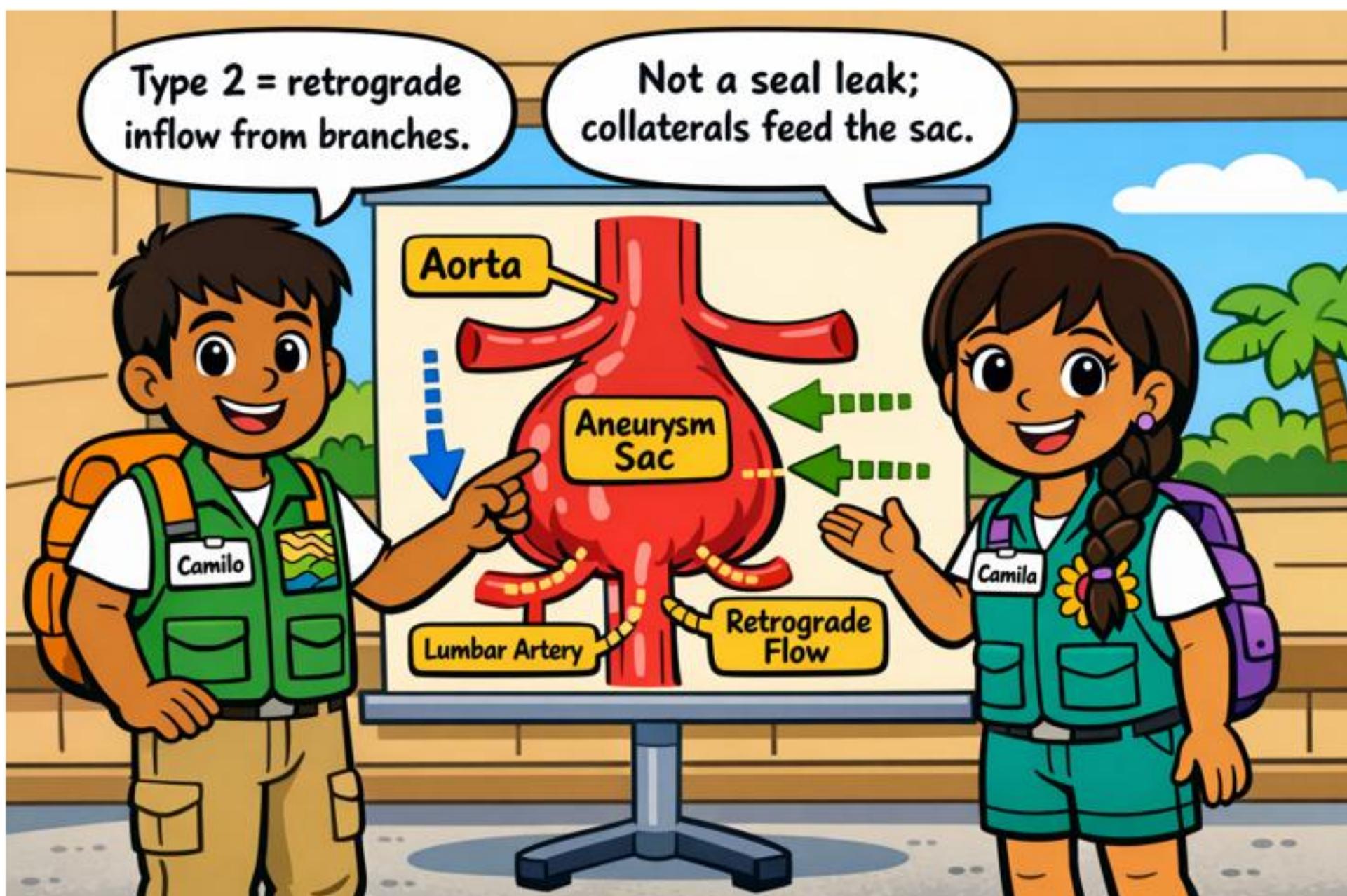
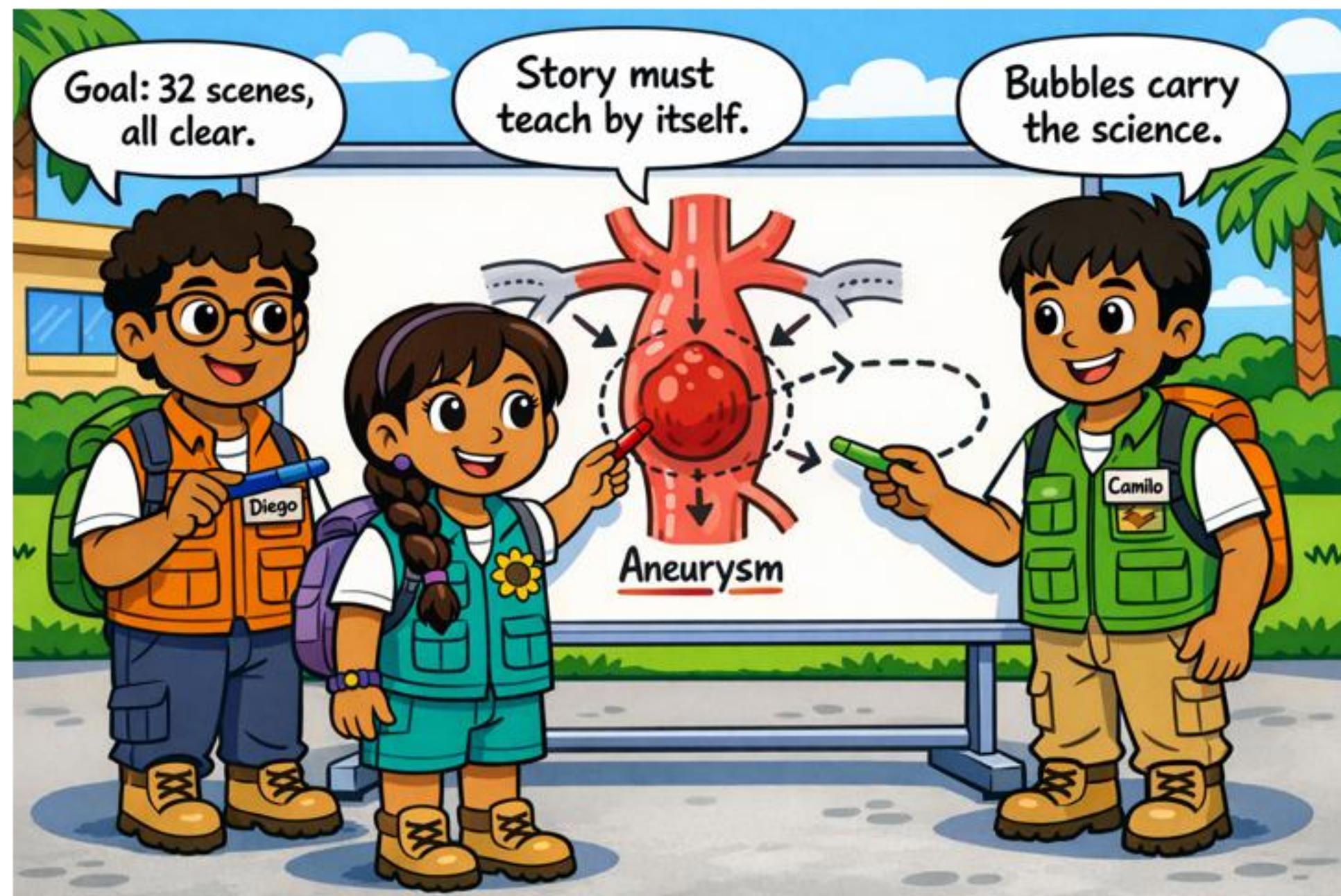


We track wash-in
and wash-out seconds.

Persistence over
60 seconds flags risk.



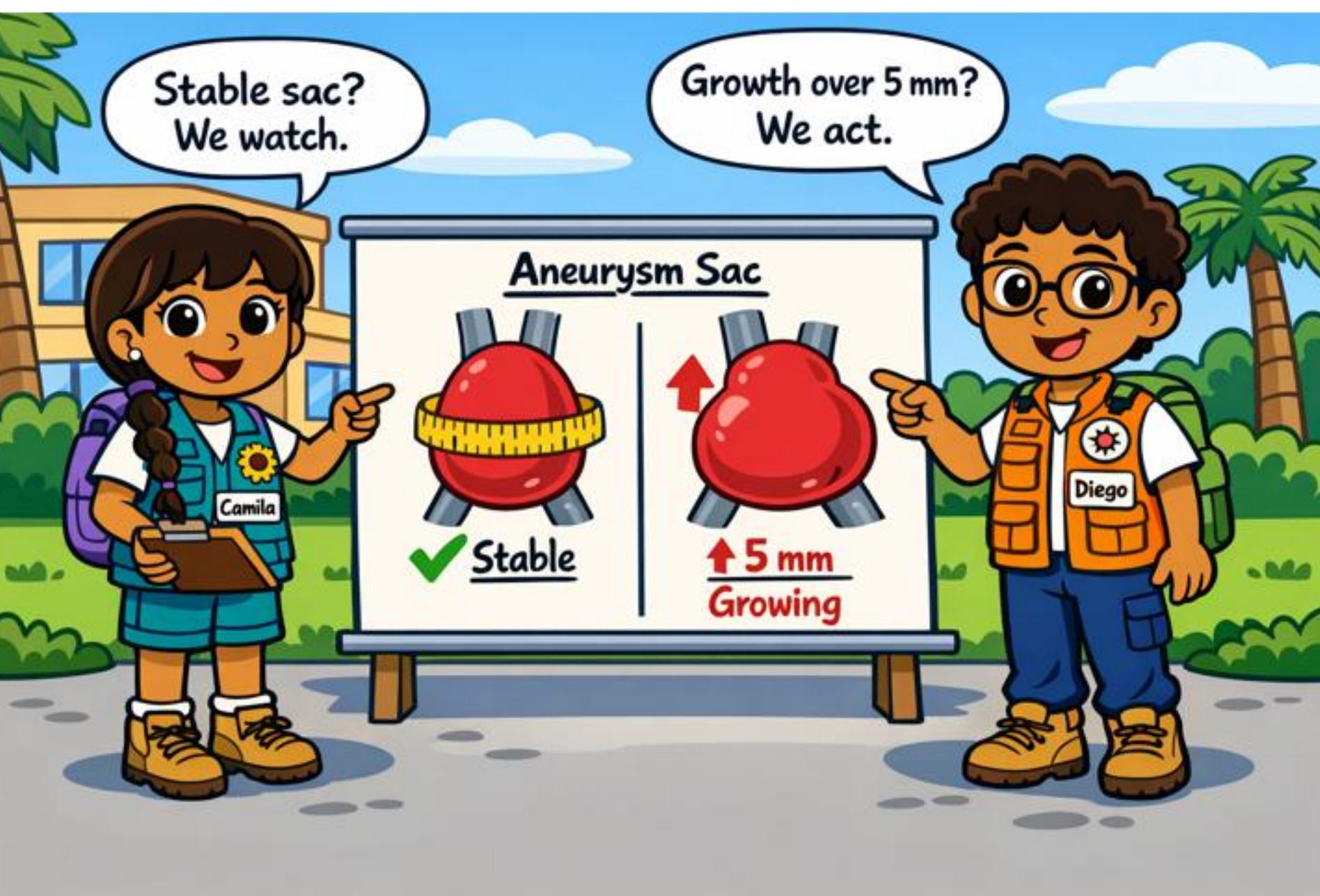
We track wash-in
and wash-out seconds.

Persistence over
60 seconds flags risk.



Stable sac?
We watch.

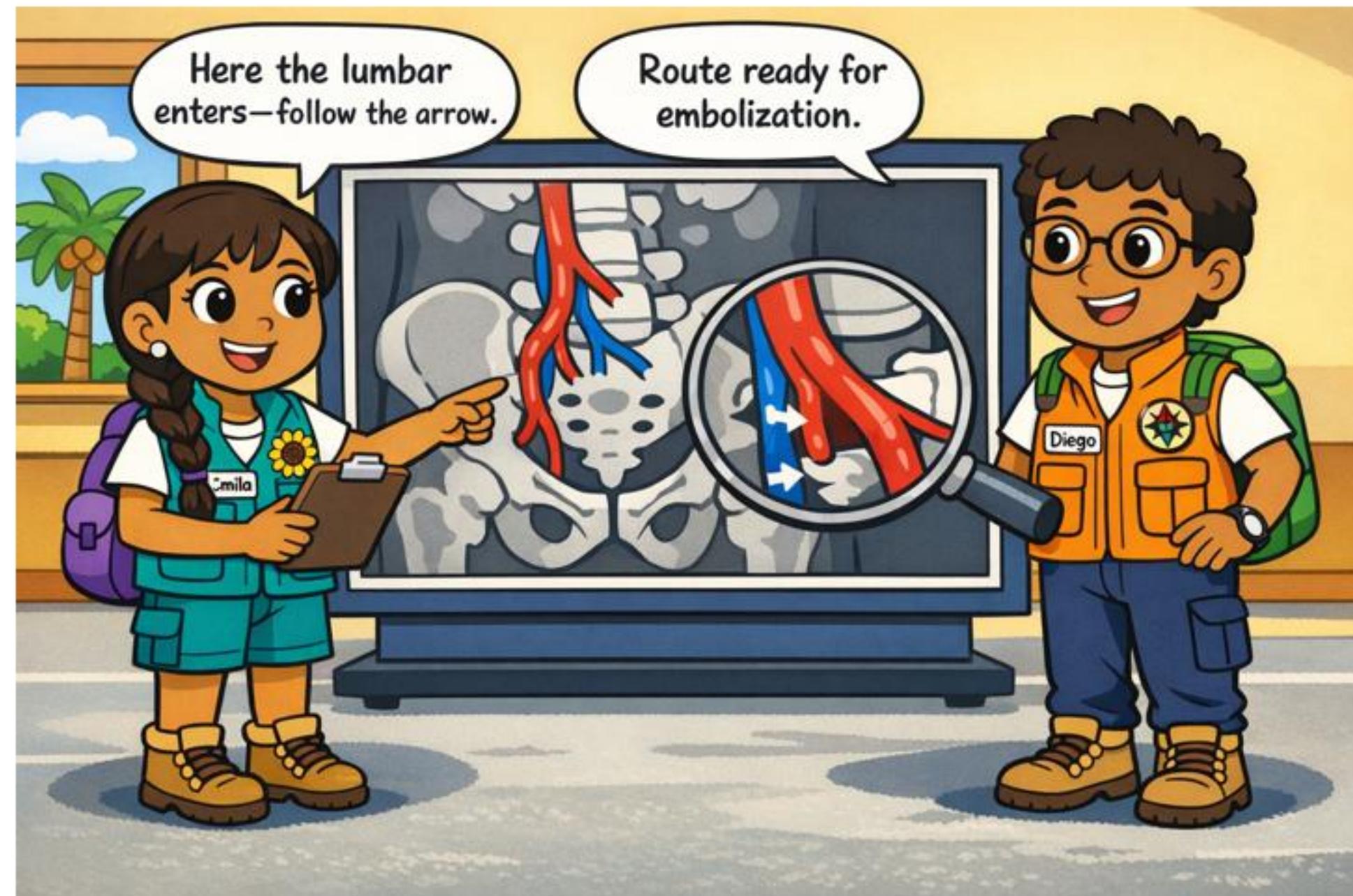
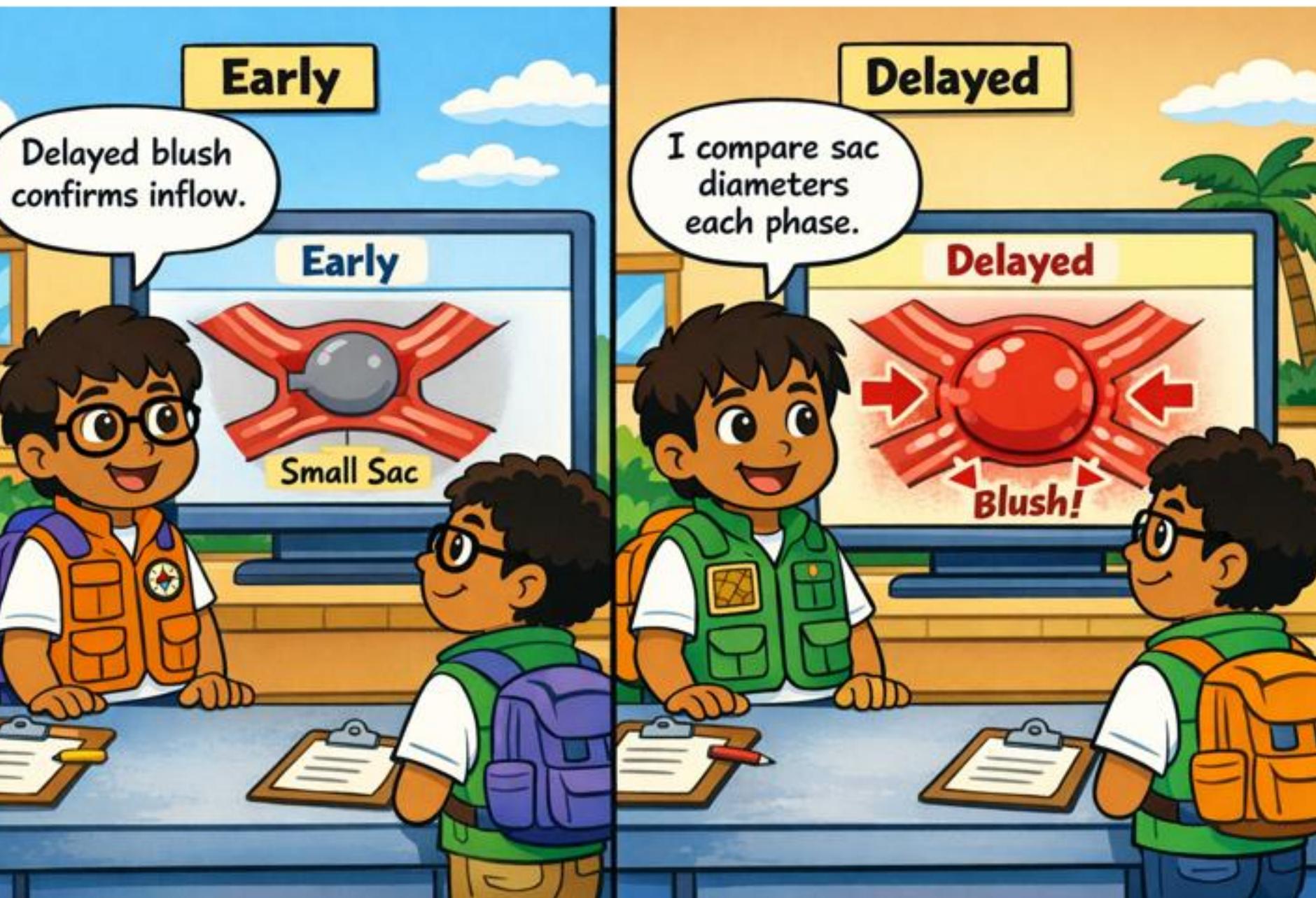
Growth over 5 mm?
We act.



CTA arterial plus
delayed for slow flow.

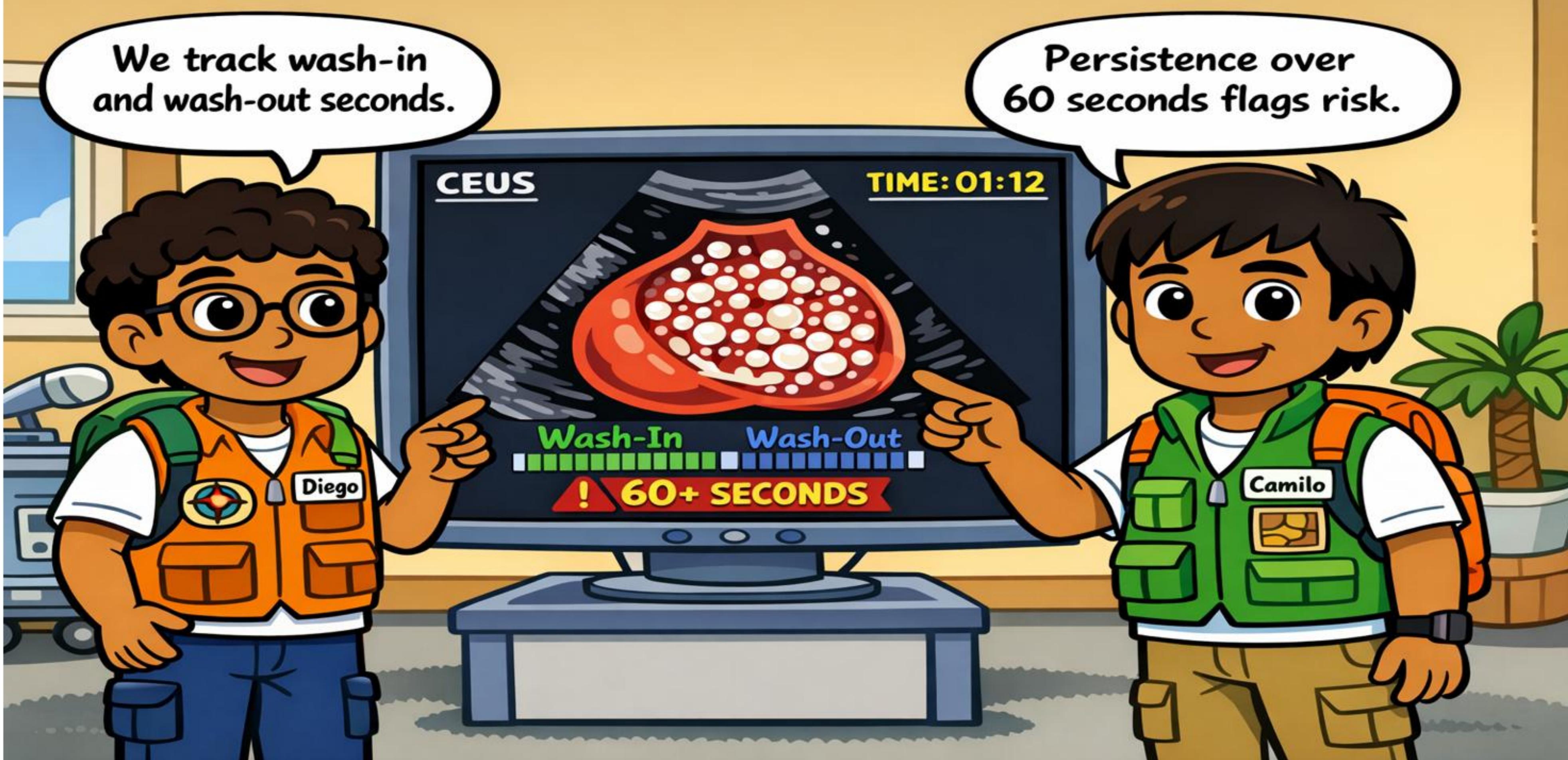
We hunt the vessel
feeding the sac.

- Arterial Phase
- Delayed Phase
- Source Vessel Hunt



We track wash-in
and wash-out seconds.

Persistence over
60 seconds flags risk.



Show sac trend
and vessel map.

We have the
data ready!



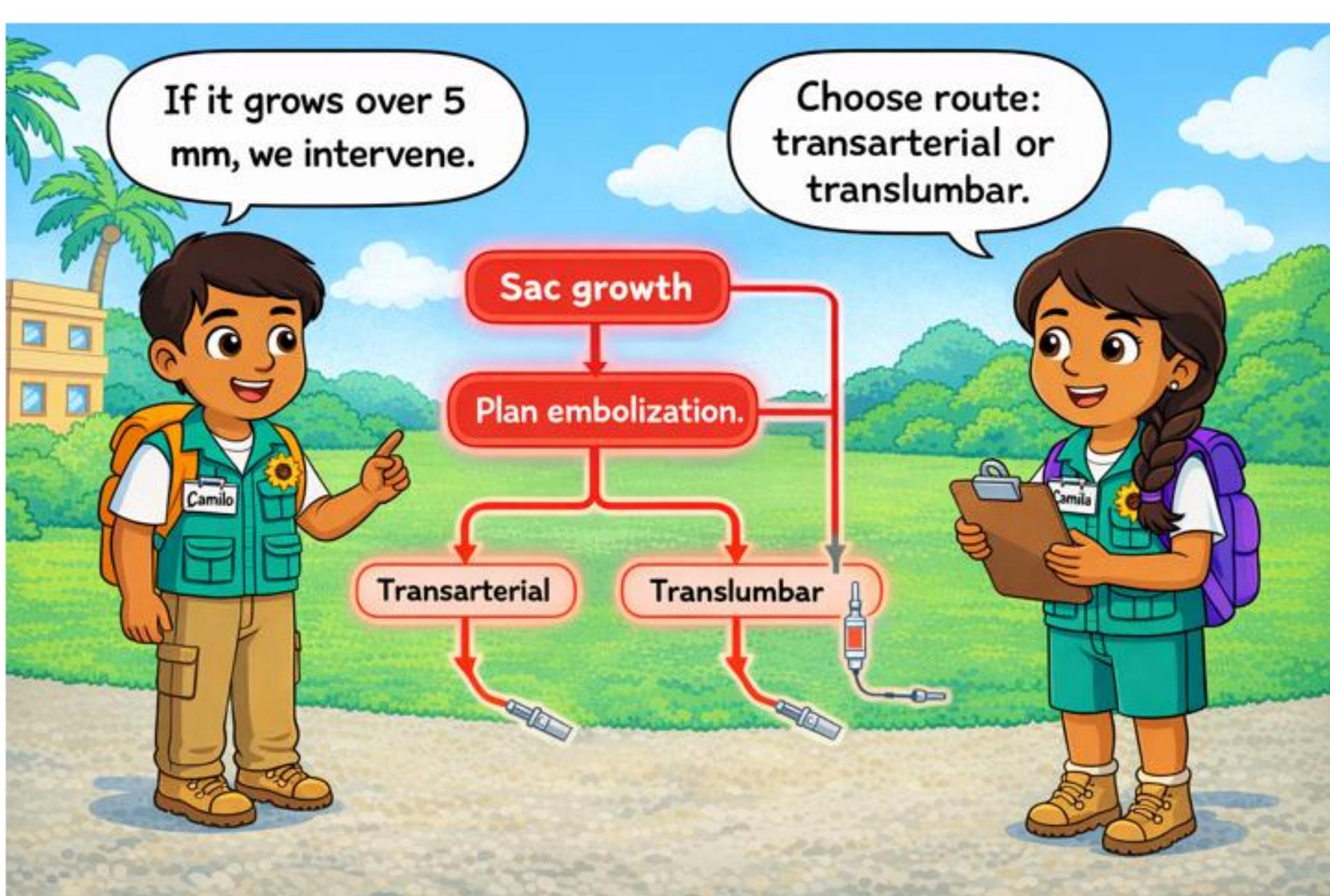
Half resolve
within six months.

CTA every
3-6 months.



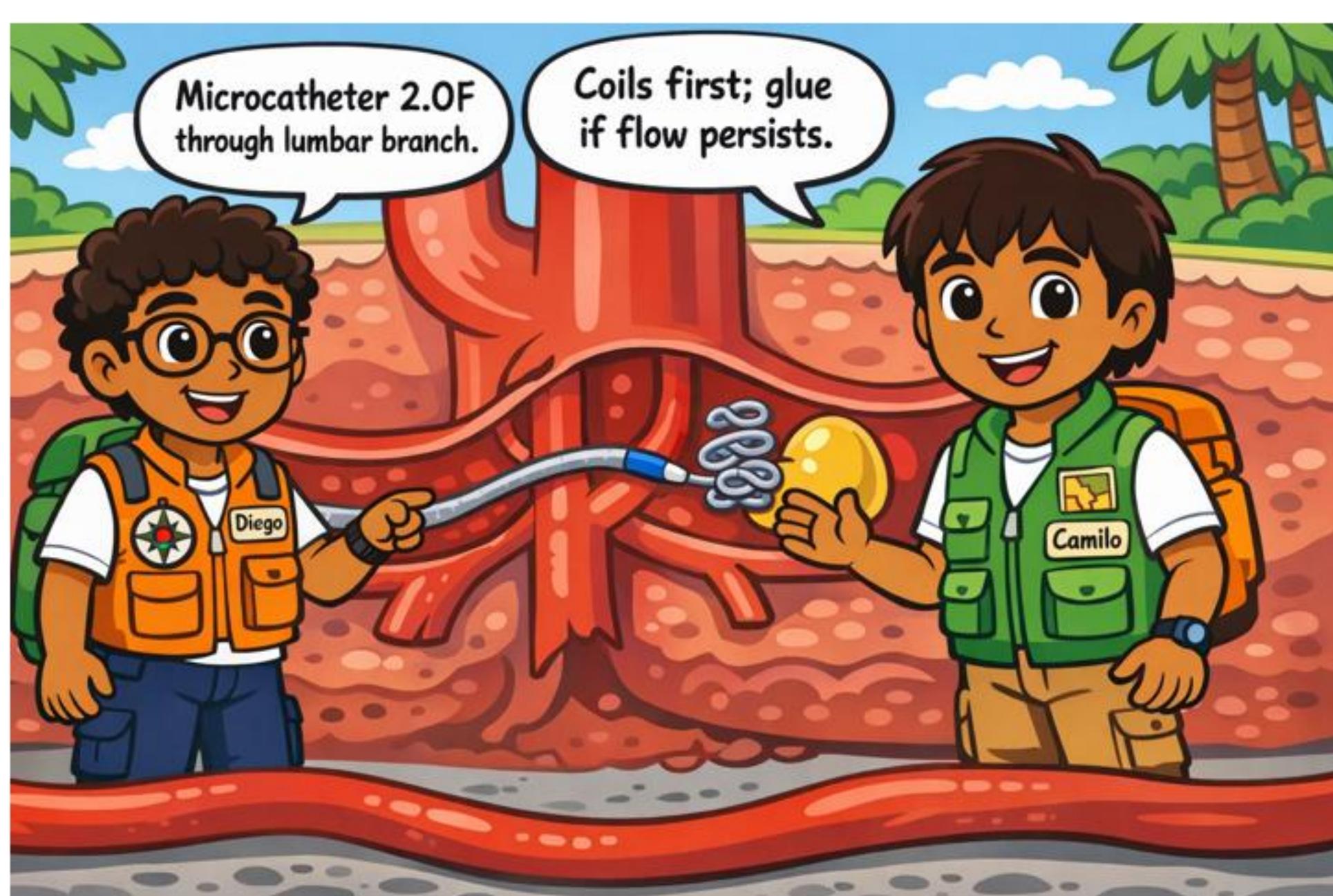
If it grows over 5
mm, we intervene.

Choose route:
transarterial or
translumbar.



Microcatheter 2.0F
through lumbar branch.

Coils first; glue
if flow persists.



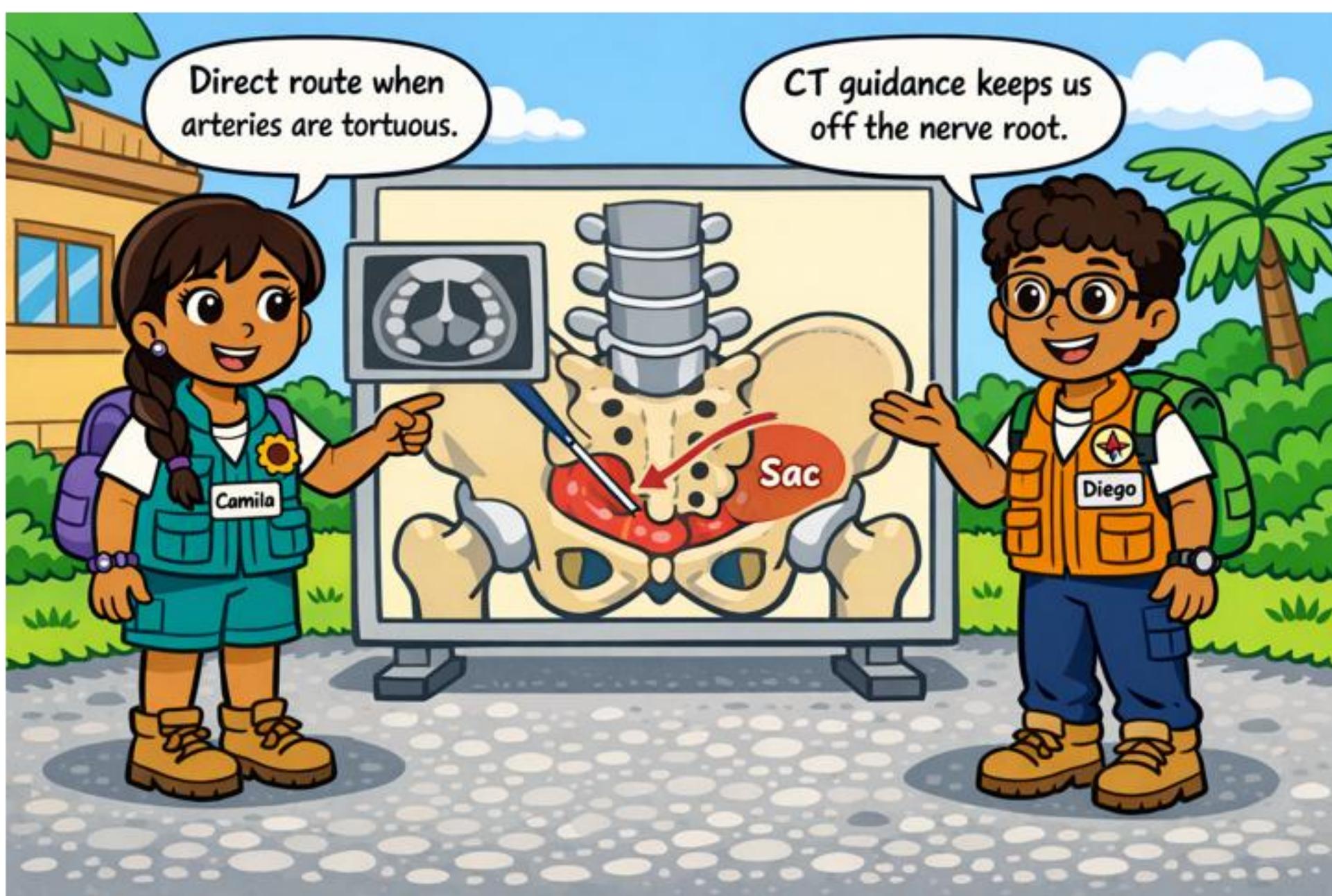
We track wash-in
and wash-out seconds.

Persistence over
60 seconds flags risk.



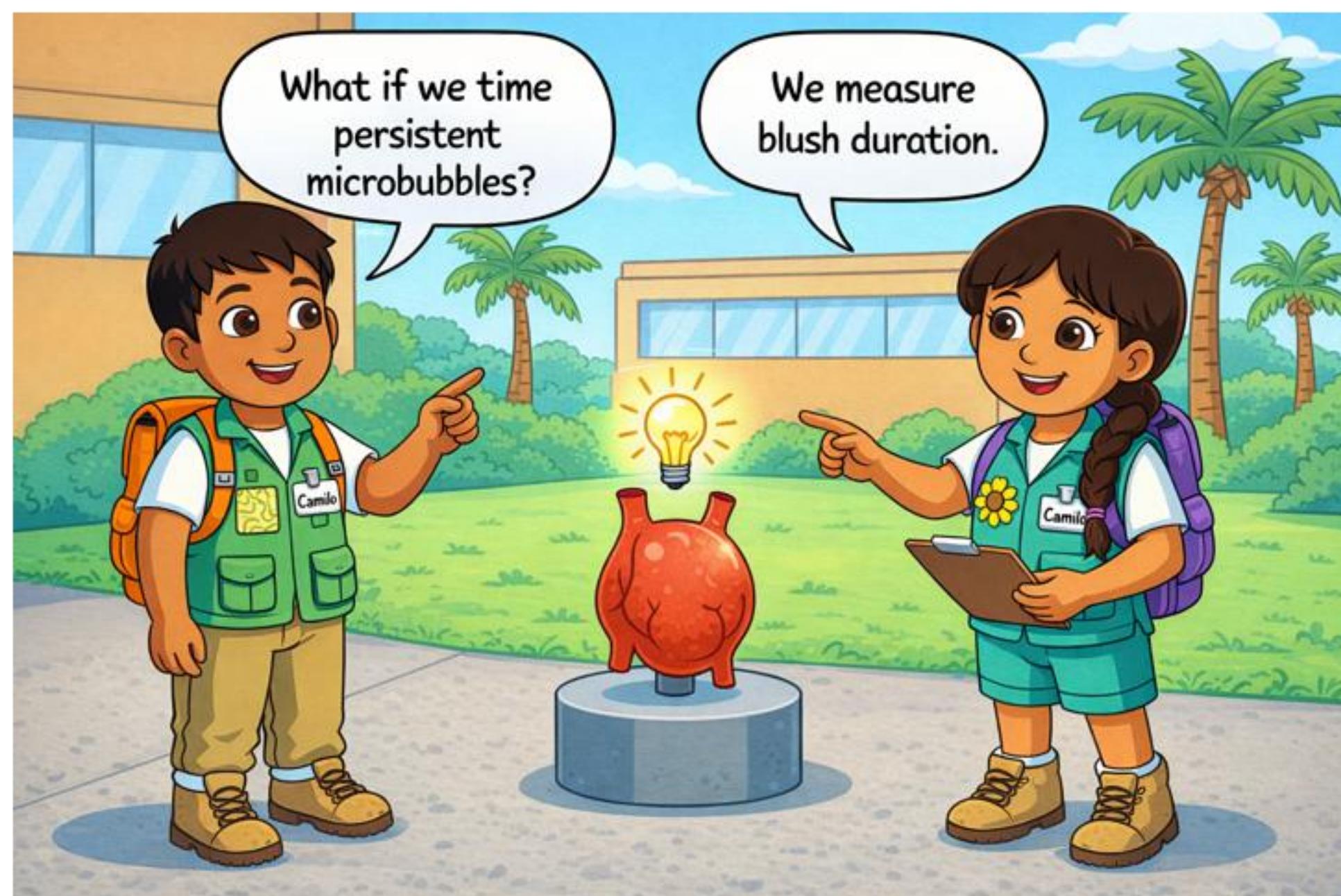
Direct route when
arteries are tortuous.

CT guidance keeps us
off the nerve root.



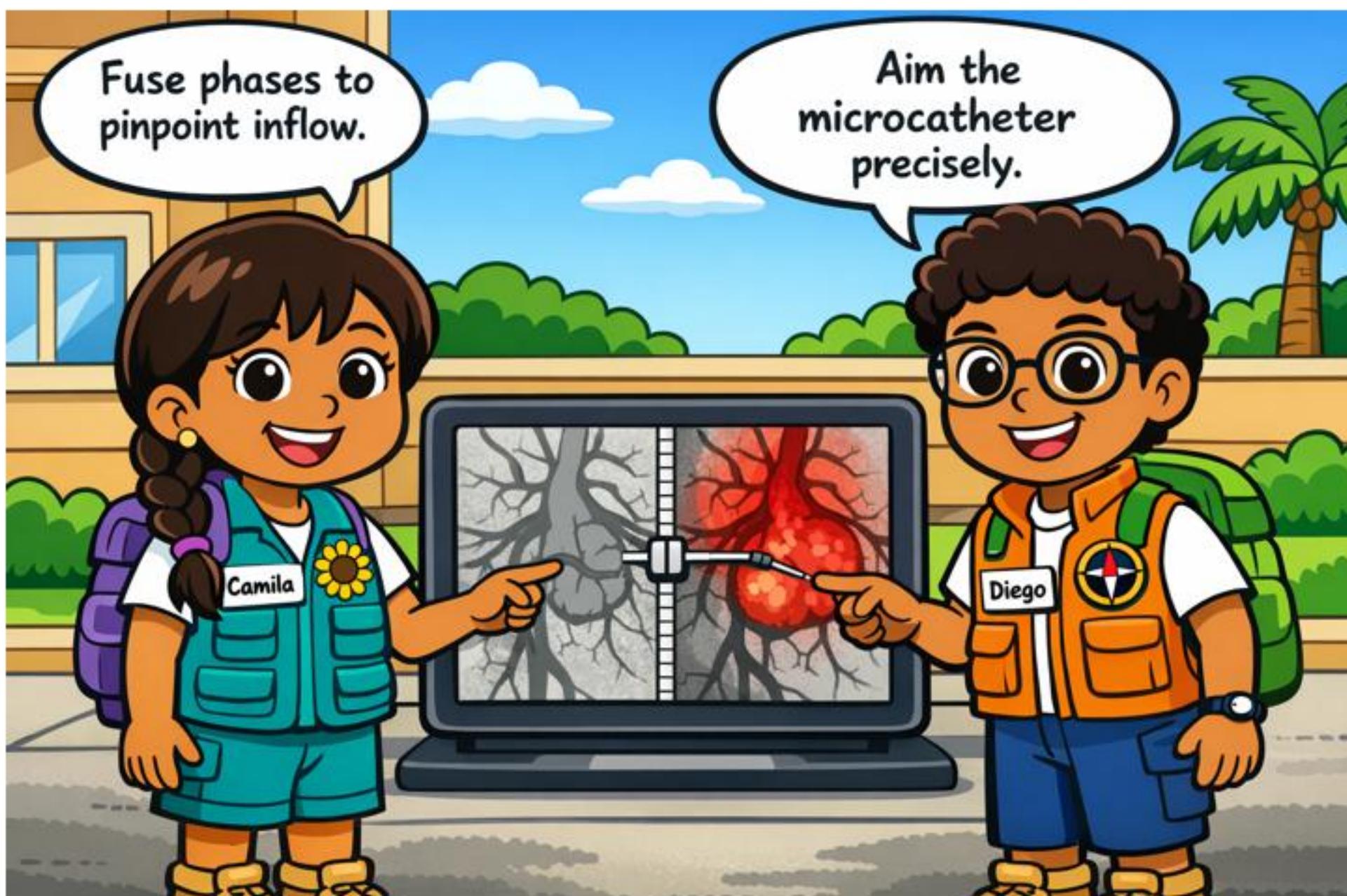
What if we time
persistent
microbubbles?

We measure
blush duration.



Fuse phases to
pinpoint inflow.

Aim the
microcatheter
precisely.



Pressure probe
inside sac.

Drop means we
sealed the inflow.



We track wash-in
and wash-out seconds.

Persistence over
60 seconds flags risk.



Selective embolization
succeeds 70-80%.

Recurrence 10-20%;
keep surveillance.

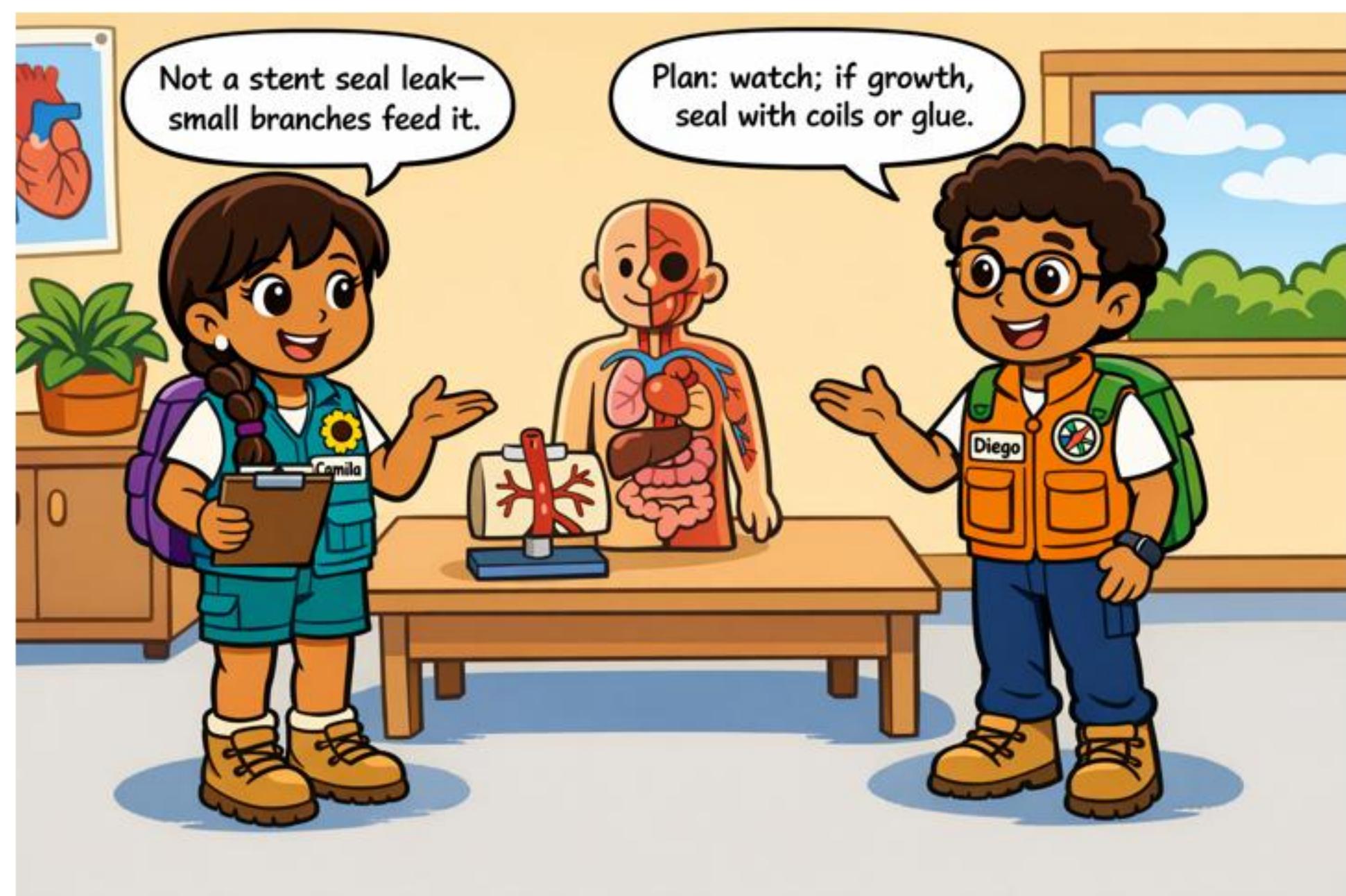
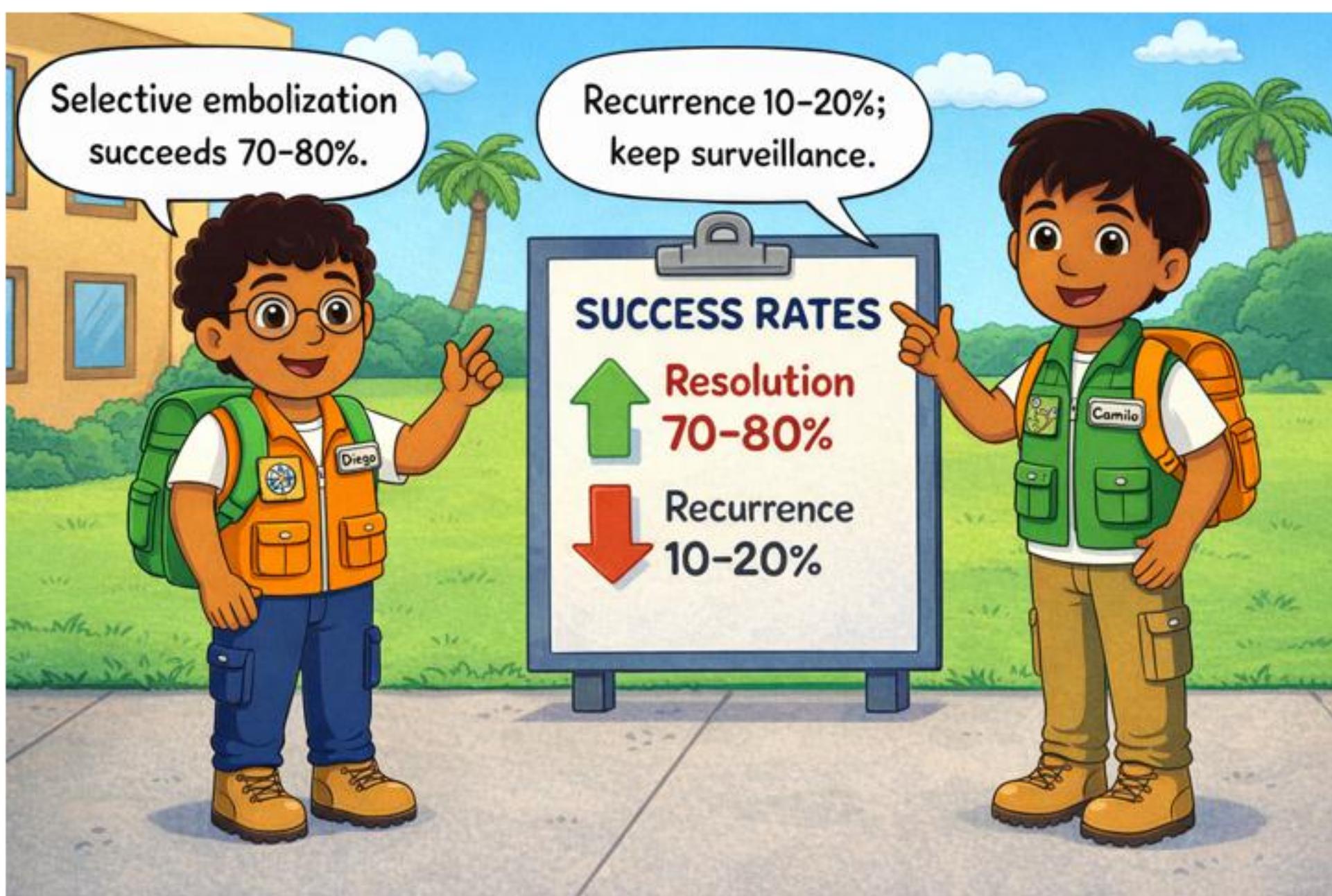
SUCCESS RATES

Resolution 70-80%

Recurrence 10-20%

Not a stent seal leak—
small branches feed it.

Plan: watch; if growth,
seal with coils or glue.



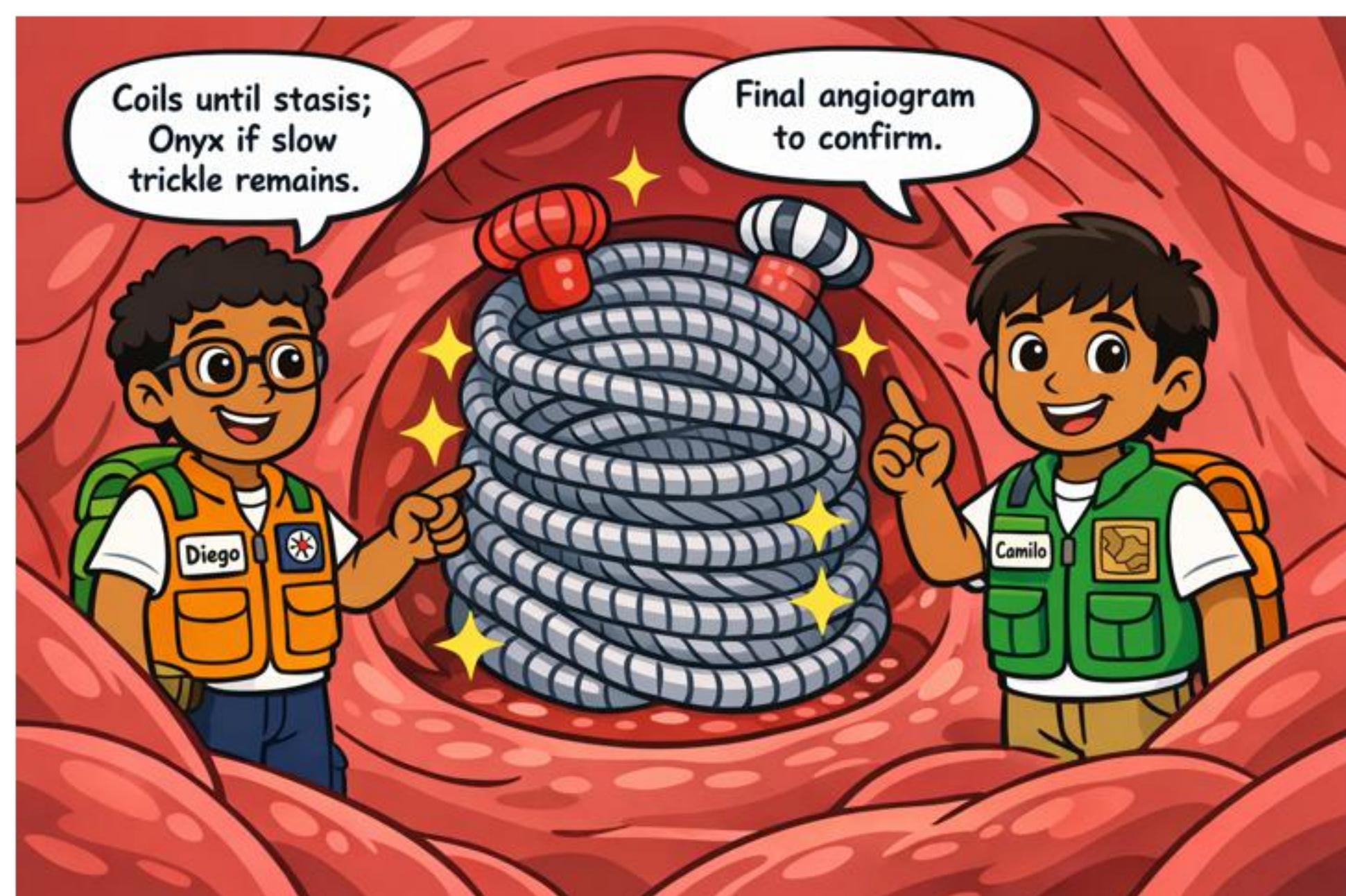
Checklist:
anticoagulation,
access, microcatheter.

Keep fluoroscopy
dose low.



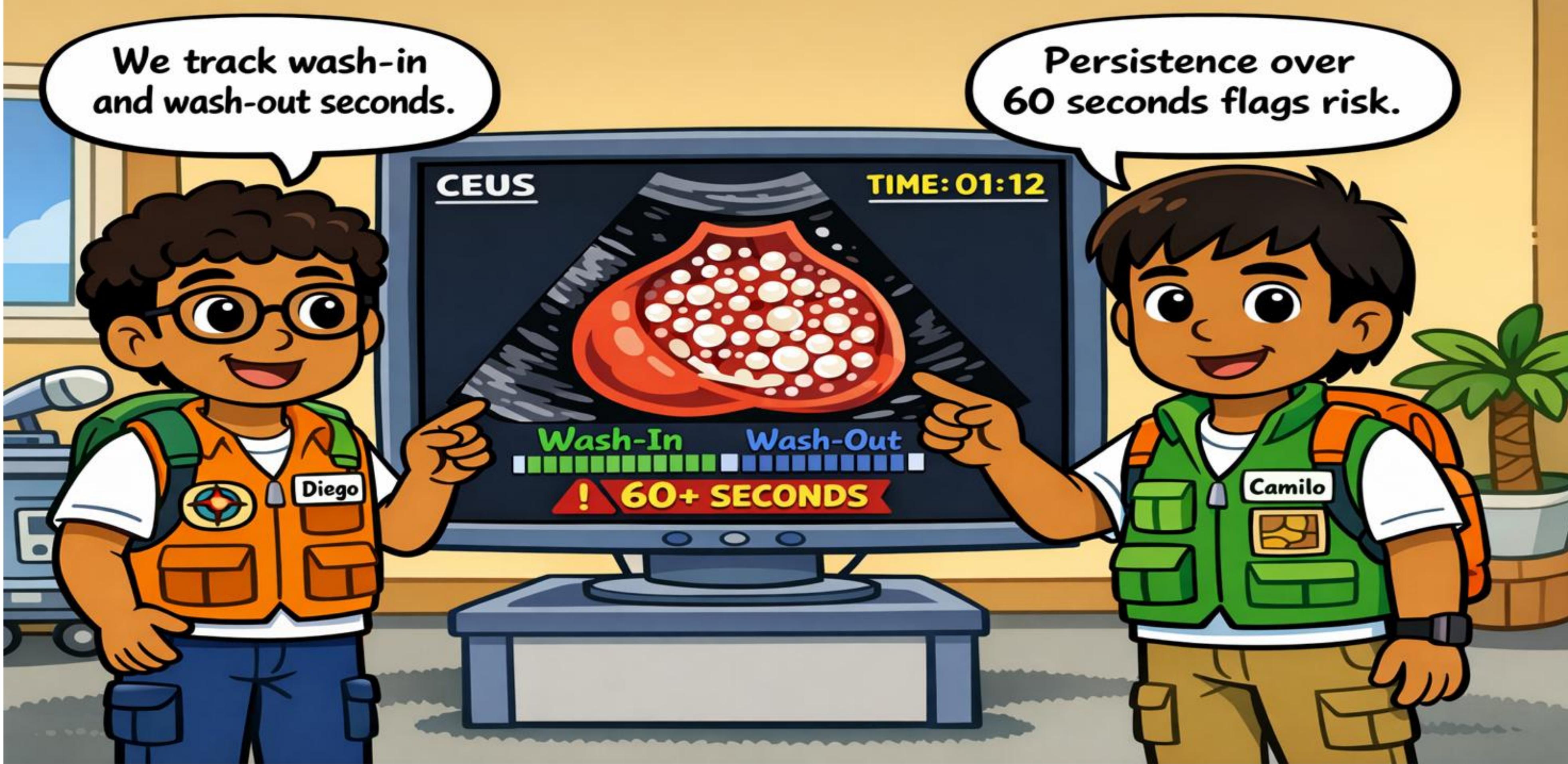
Coils until stasis;
Onyx if slow
trickle remains.

Final angiogram
to confirm.



We track wash-in
and wash-out seconds.

Persistence over
60 seconds flags risk.



CTA at 6-12 weeks
shows no blush.

Diameter stable
or smaller.



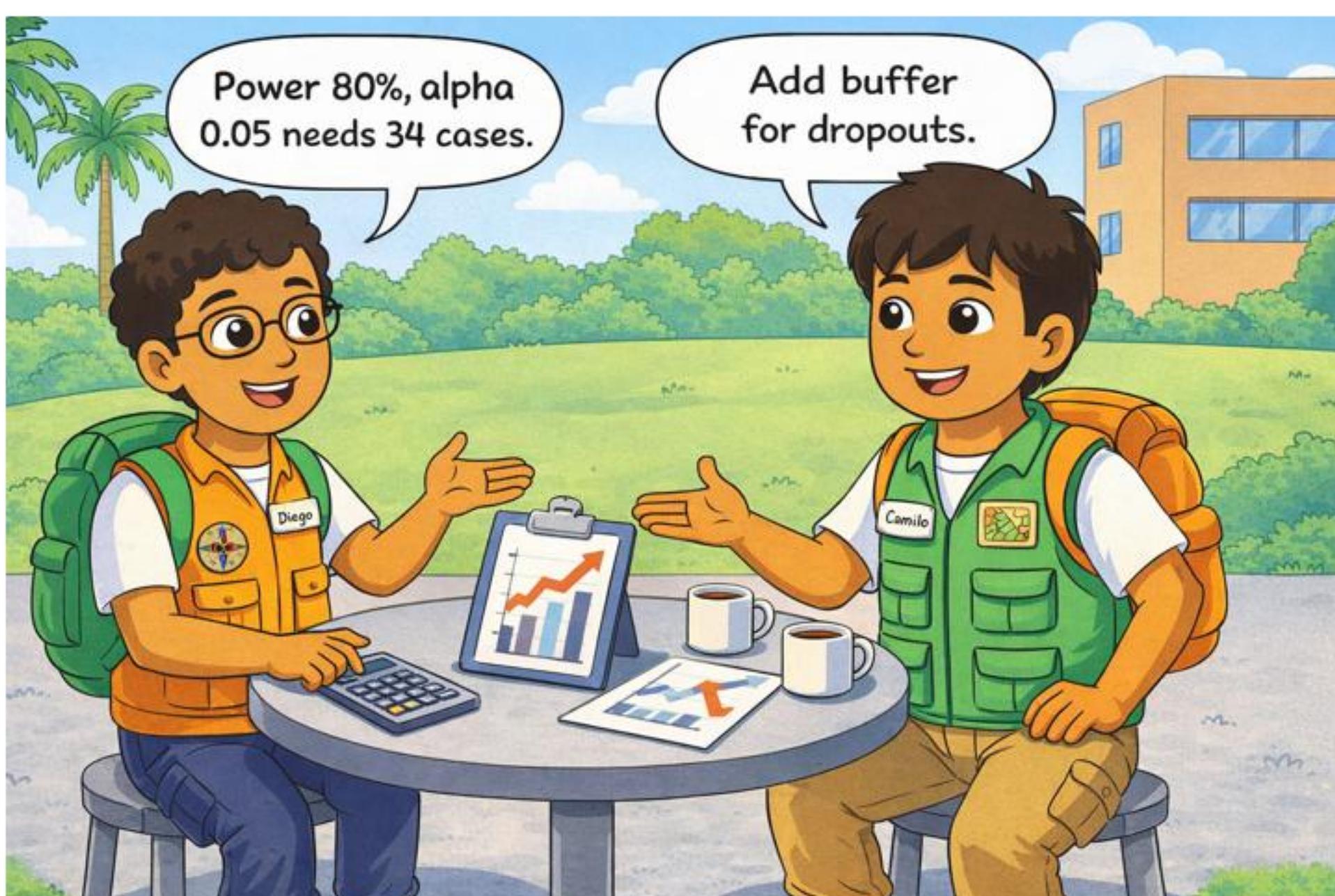
Hypothesis: bubble
over 60s predicts
expansion.

Test in 20 consecutive
patients.



Power 80%, alpha
0.05 needs 34 cases.

Add buffer
for dropouts.



Consent must be
clear and plain English.

Low risk,
potential benefit.



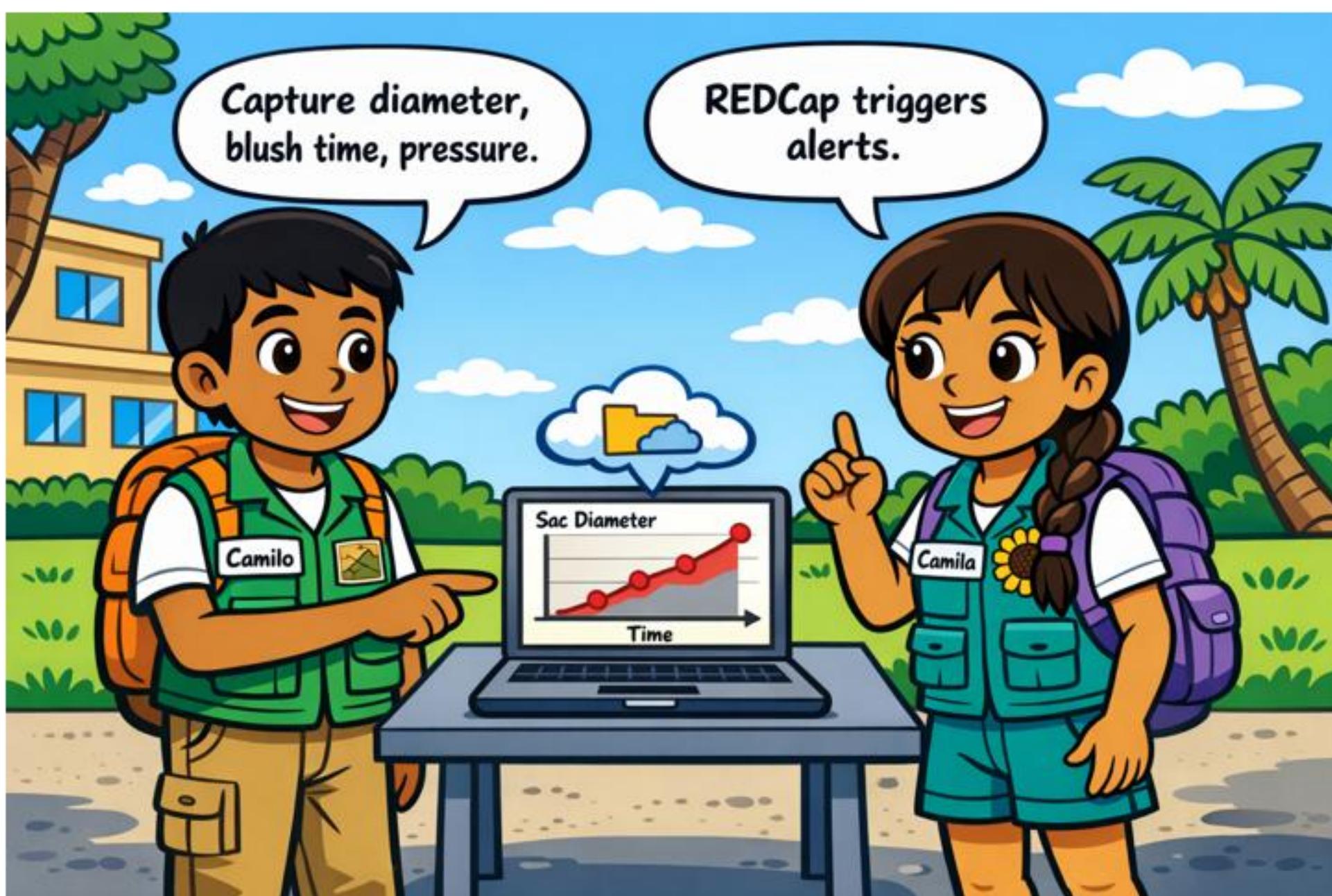
We track wash-in
and wash-out seconds.

Persistence over
60 seconds flags risk.



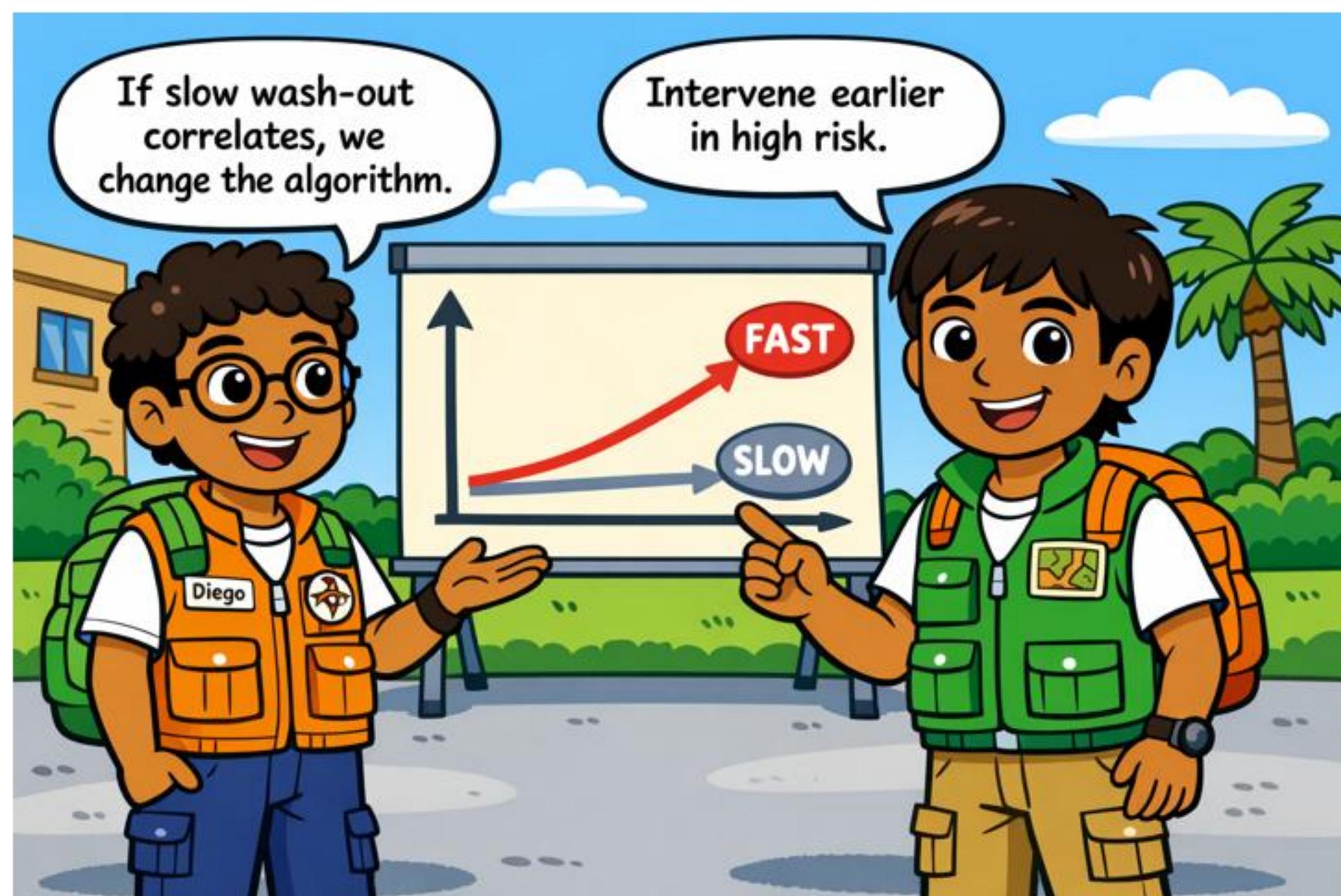
Capture diameter,
blush time, pressure.

REDCap triggers
alerts.



If slow wash-out
correlates, we
change the algorithm.

Intervene earlier
in high risk.



Three steps:
locate, measure,
route.

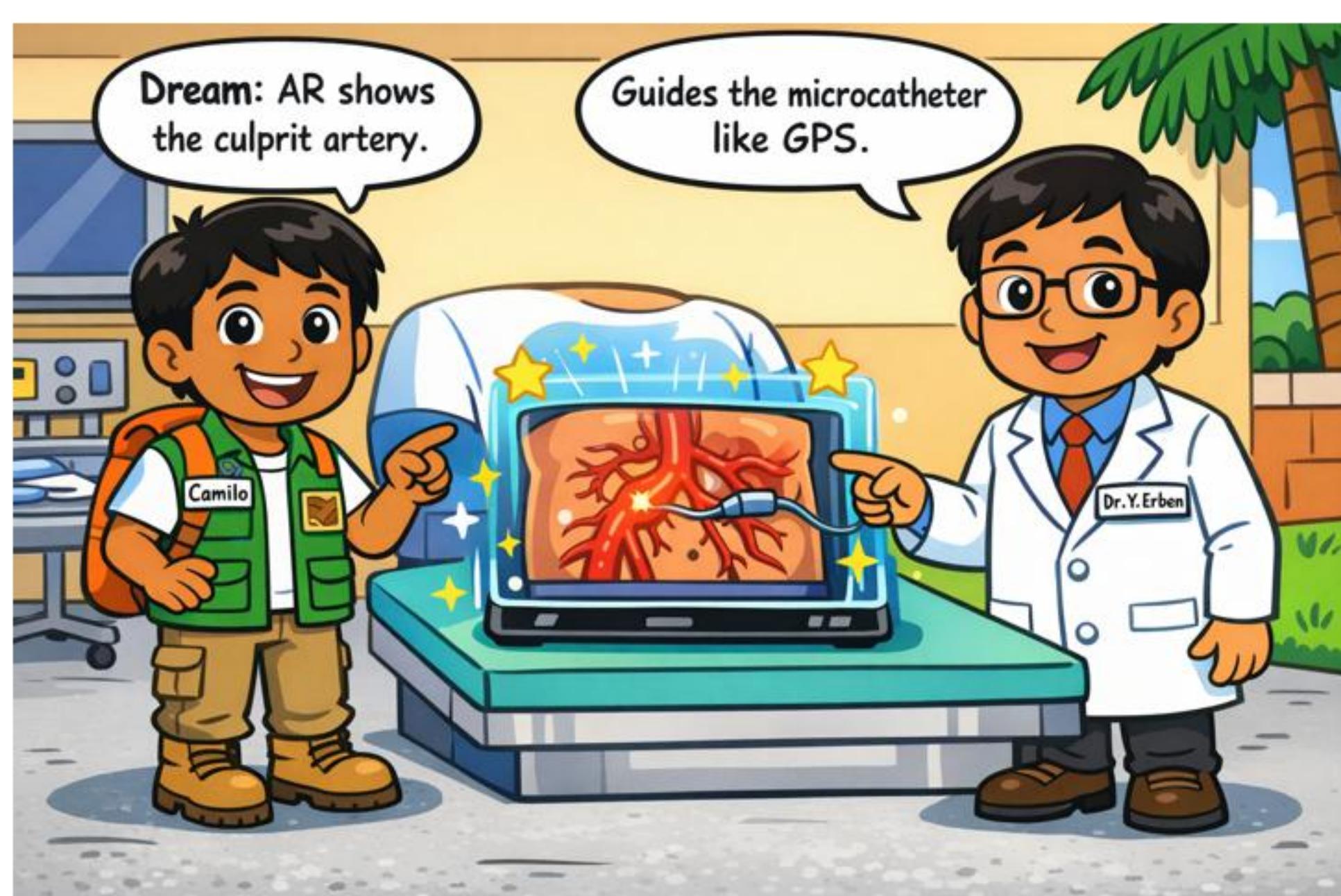
Always check
the delayed phase.

- identify source
- measure sac
- choose approach



Dream: AR shows
the culprit artery.

Guides the microcatheter
like GPS.



We track wash-in
and wash-out seconds.

Persistence over
60 seconds flags risk.

