Screen-by-Screen Storyboards

ESA Hub Program

AMI Critical Thinking Video

Amgen

PAGE TITLE: **Assessing Hb Trends to Optimize Patient Outcomes**

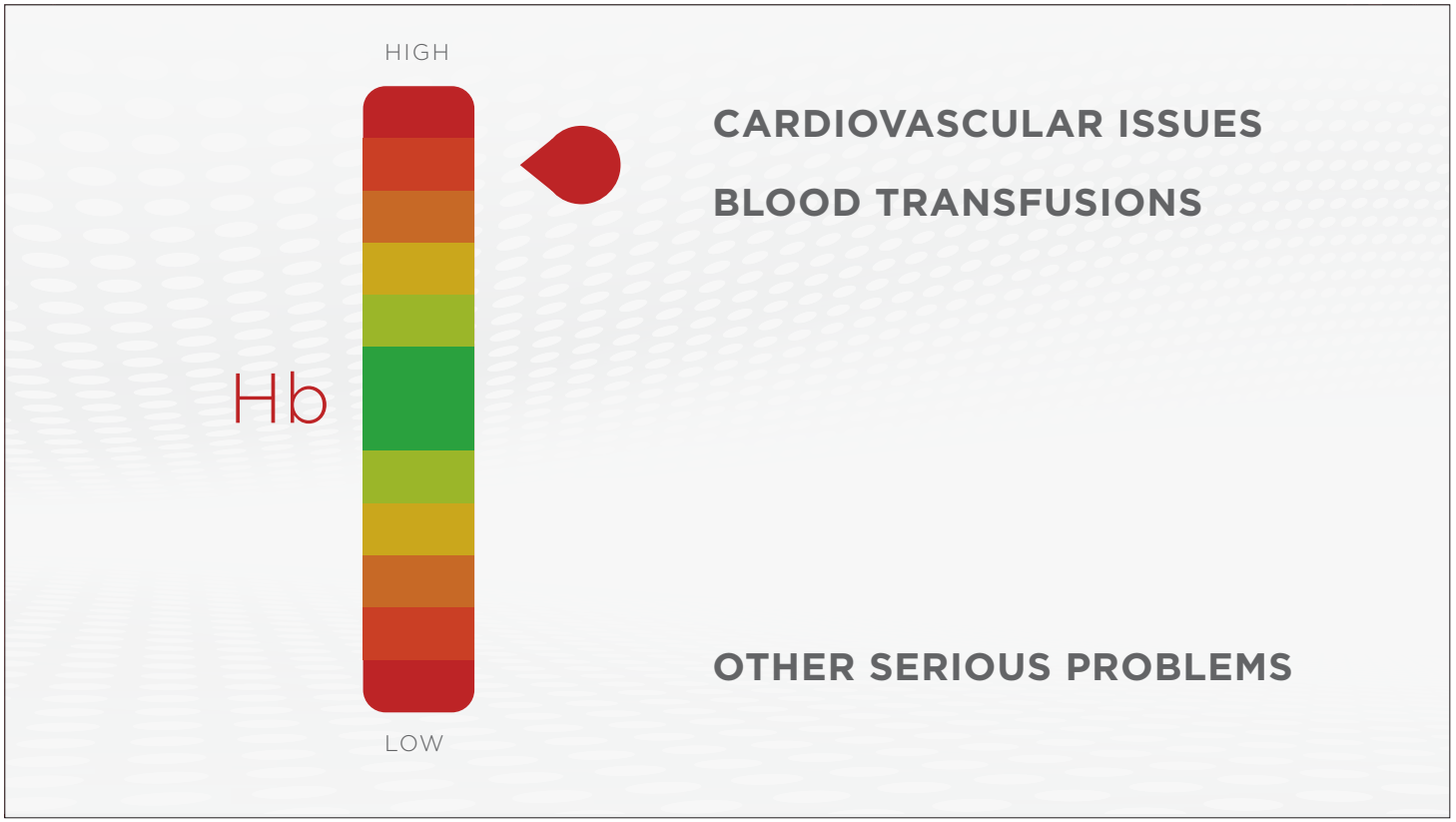
VOICE OVER TEXT

In this video, we'll look at the different factors that may affect hemoglobin (Hb) levels in patients with anemia due to chronic kidney disease (CKD), and how to assess trends in lab values.

ANIMATION NOTES:

Title animates on. Subtext animates on. Red blood cell background is a video file.
[https://premier.shutterstock.com/video/detail-20548588/3d-animation-of-red-blood-cells-flowing-through-artery]

PAGE TITLE: **Assessing Hb Trends to Optimize Patient Outcomes**



VOICE OVER TEXT

It's important to keep Hb levels within range in order to optimize patient outcomes. Hb that is too high or too low could lead to cardiovascular issues or require blood transfusions, or cause other serious problems.

ANIMATION NOTES:

Hb level animates on, blood drop indicator moves up and down. When indicator is high, 2 bullets at top animate on as VO speaks. When indicator is low, 1 bullet at bottom animates on as VO speaks.

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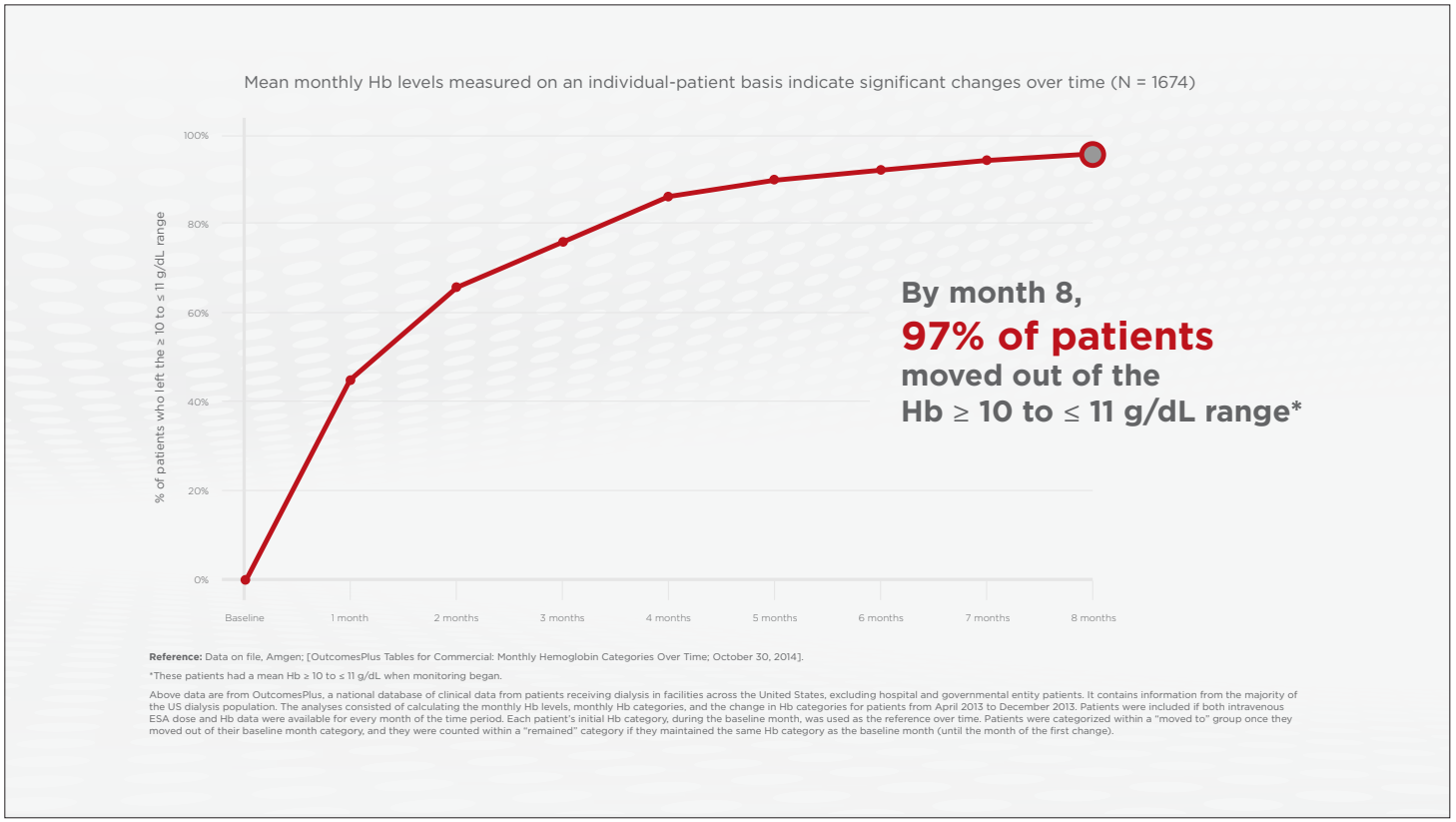

VOICE OVER TEXT

We know that patients on dialysis frequently experience changes to their Hb levels.

This chart shows that, in an 8-month study of dialysis patients across the US, the vast majority - 97% - had a mean monthly Hb change that caused them to move out of their baseline range.

ANIMATION NOTES:

Chart animates on. Take-away bullet animates on as VO speaks.

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VOICE OVER TEXT

So what are the various factors that may affect a patient's Hb levels?

ANIMATION NOTES:

Text animates on. Red blood cell background is a video file.

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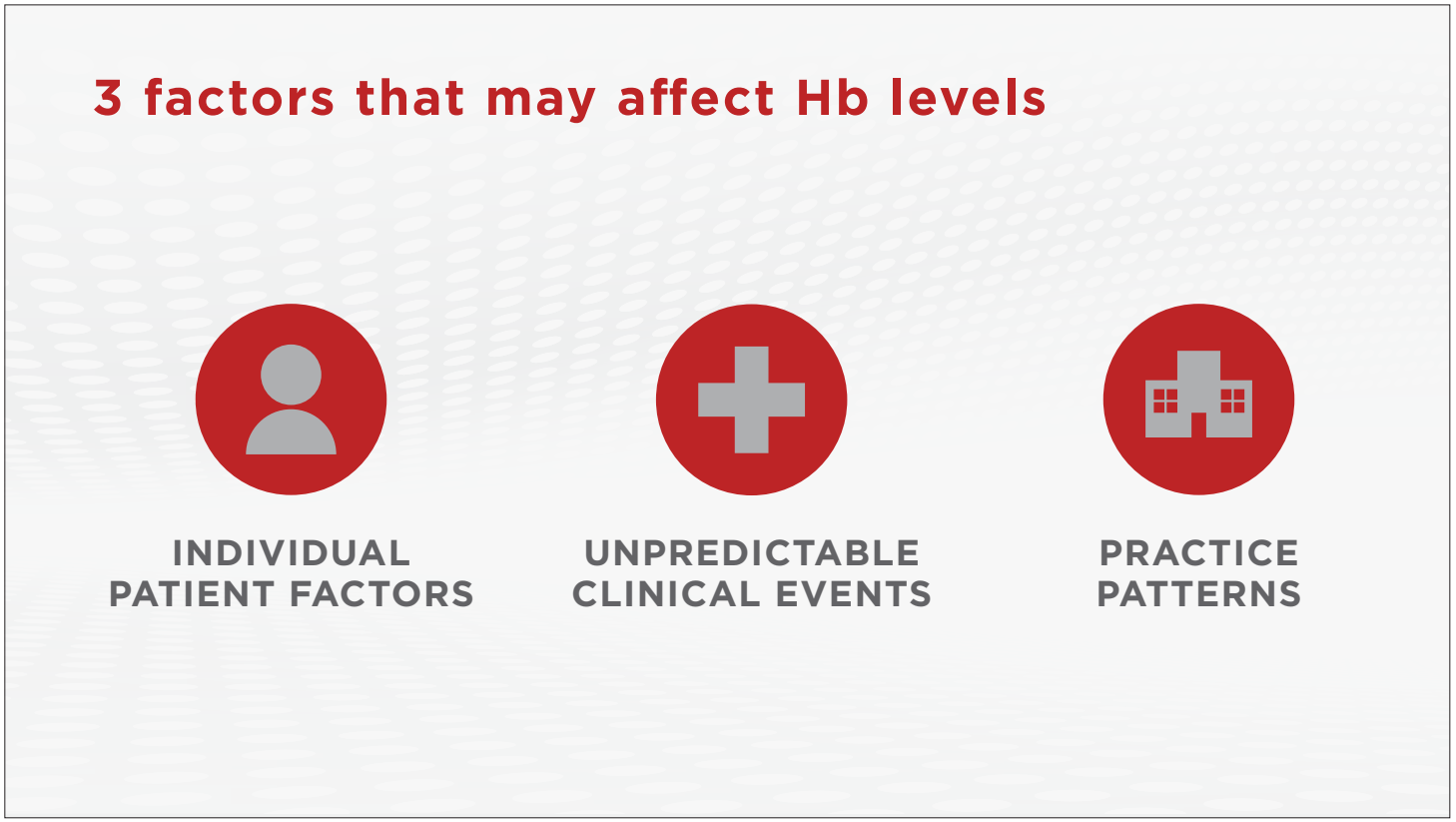

VOICE OVER TEXT

1. Individual patient factors,
2. Unpredictable clinical events, and
3. Practice patterns

ANIMATION NOTES:

Title animates on. Icons and factor names animate on as VO speaks.

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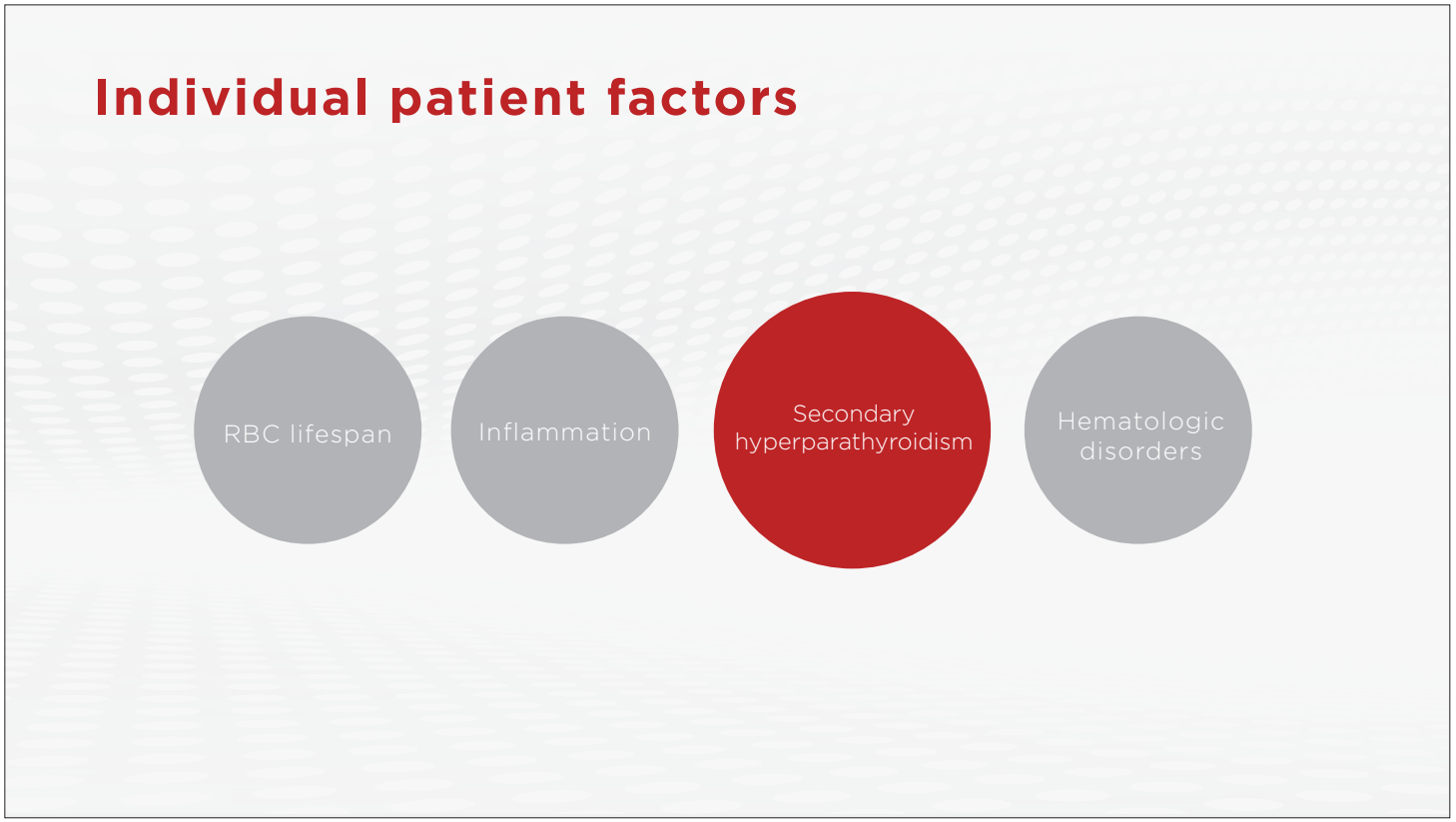
VOICE OVER TEXT

Looking at the first group - patient factors - what are these?

ANIMATION NOTES:

Arrow slides in from left. Text and icon animate on. Background texture is a video file.
[https://premier.shutterstock.com/video/detail-30126370/flowing-abstract-grey-white-waves-graphic-motion-design-video-animation-ultra-hd-4k-3840x2160]

PAGE TITLE: **Assessing Hb Trends to Optimize Patient Outcomes**



VOICE OVER TEXT

Well, they may include things like the lifespan of a patient's red blood cells, inflammation, secondary hyperparathyroidism (HPT), or hematologic disorders.

ANIMATION NOTES:

Title animates on. All circles animate on. As each "individual patient factor" is read by VO, that circle will turn red and enlarge.

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VOICE OVER TEXT

The second group of factors that might impact Hb is unpredictable, or intercurrent, clinical events.

ANIMATION NOTES:

Arrow slides in from left. Text and icon animate on. Background texture is a video file.

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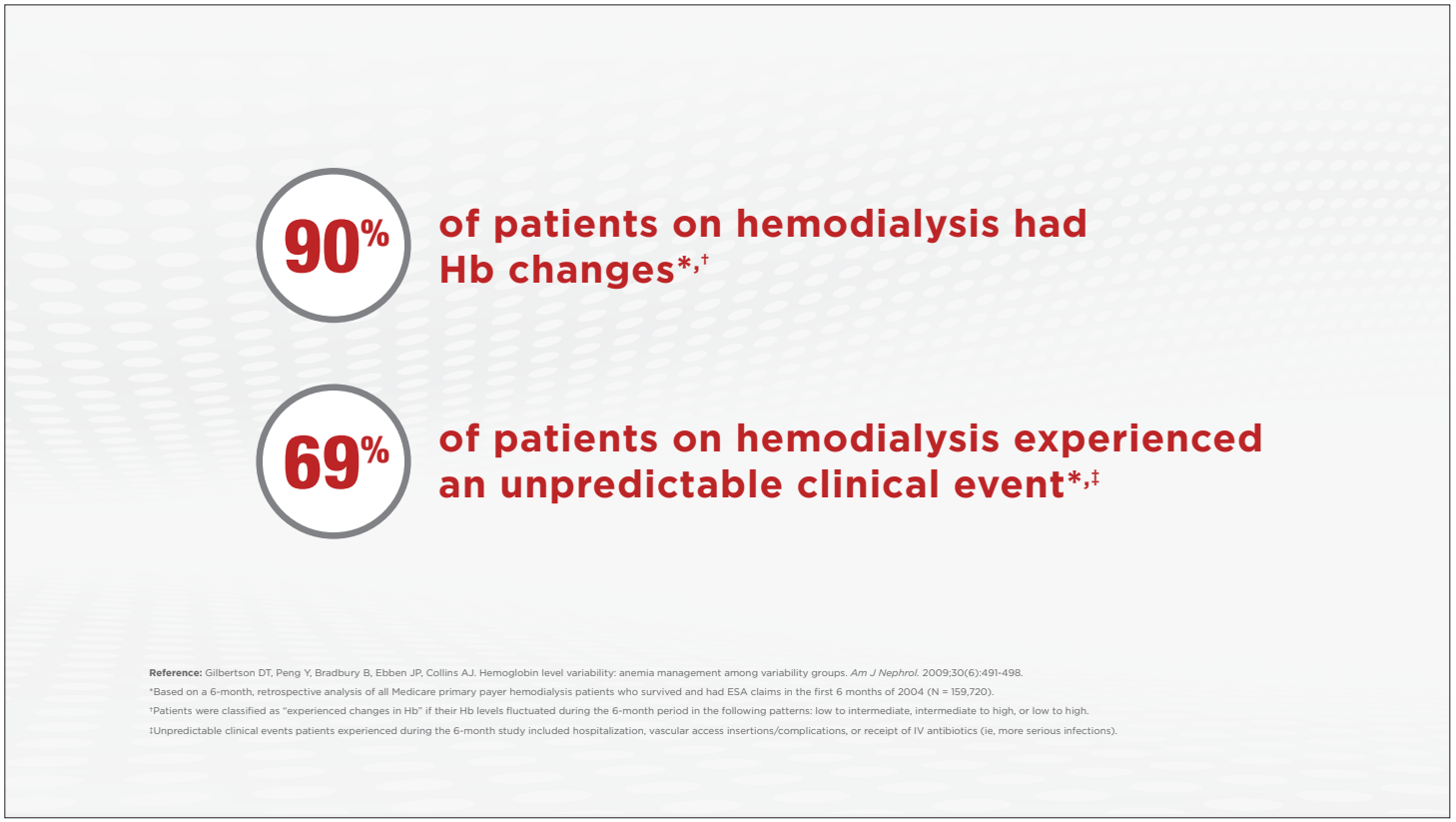

VOICE OVER TEXT

In a 6-month study of patients with CKD on dialysis, 90% saw changes in their Hb levels, while 69% experienced unpredictable clinical events. So there appears to be a correlation.

ANIMATION NOTES:

As VO speaks, each stat (number icon and text) animate on.

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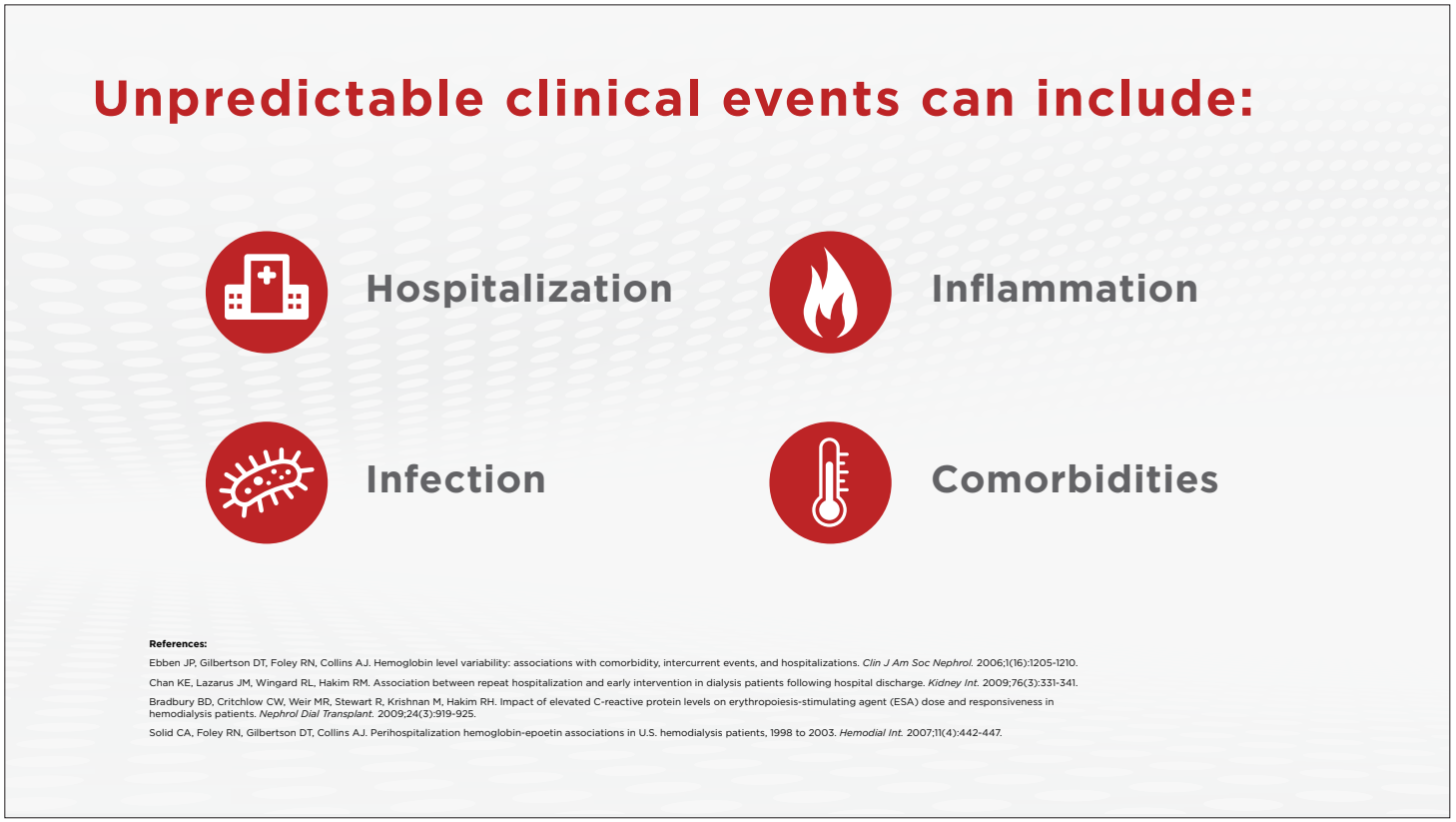
VOICE OVER TEXT

Unpredictable clinical events could include hospitalization, inflammation, infection, or one or more comorbidities.



ANIMATION NOTES:

Title animates on. As VO speaks, each icon and event animates on.

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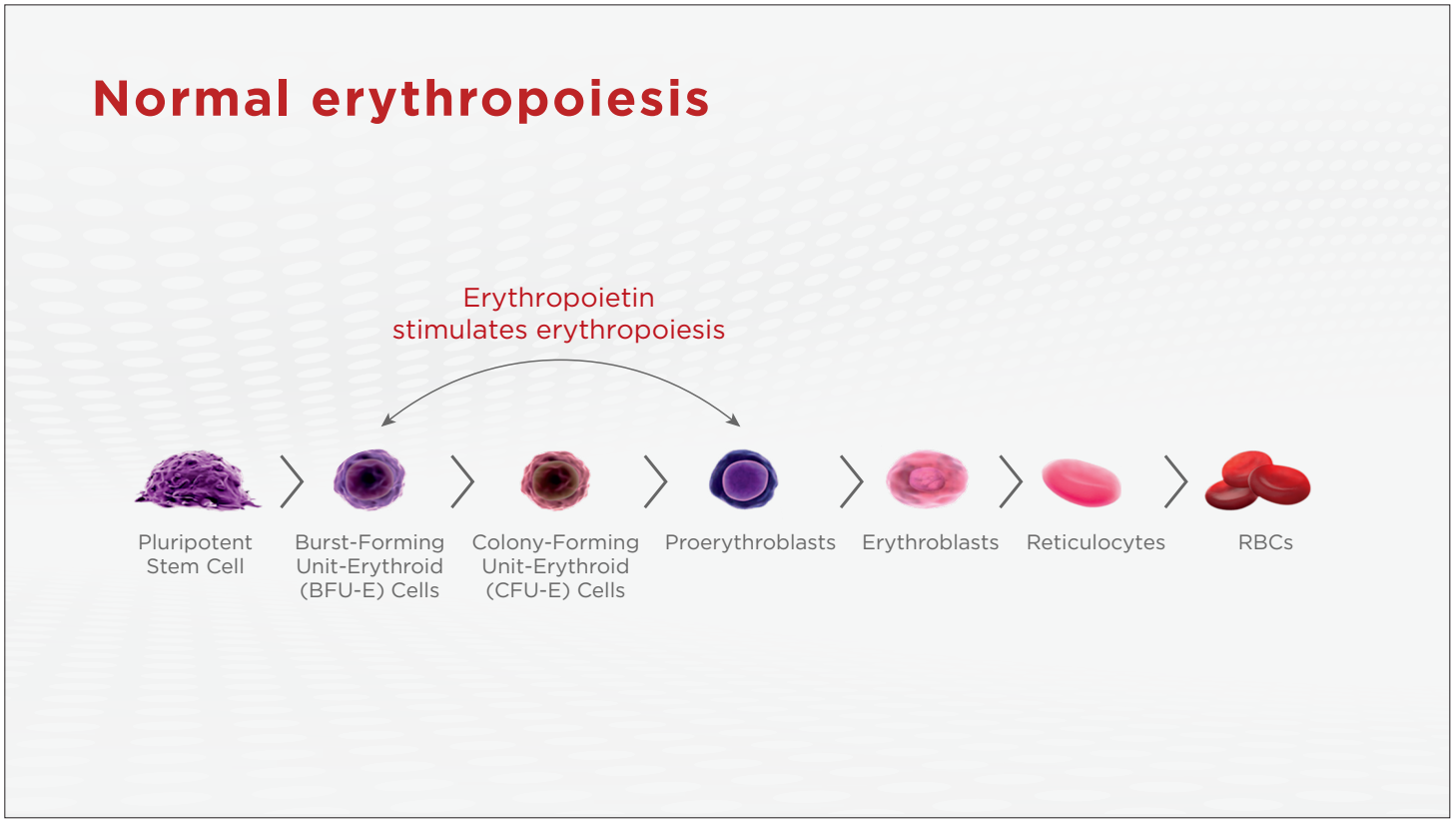

VOICE OVER TEXT

So how do these factors affect Hb?

In the case of inflammation and infection, these conditions may inhibit the production of red blood cells, the process known as erythropoiesis.

The image here shows the difference between normal and impaired erythropoiesis.

ANIMATION NOTES:

Title animates on. Diagram animates on from left to right.

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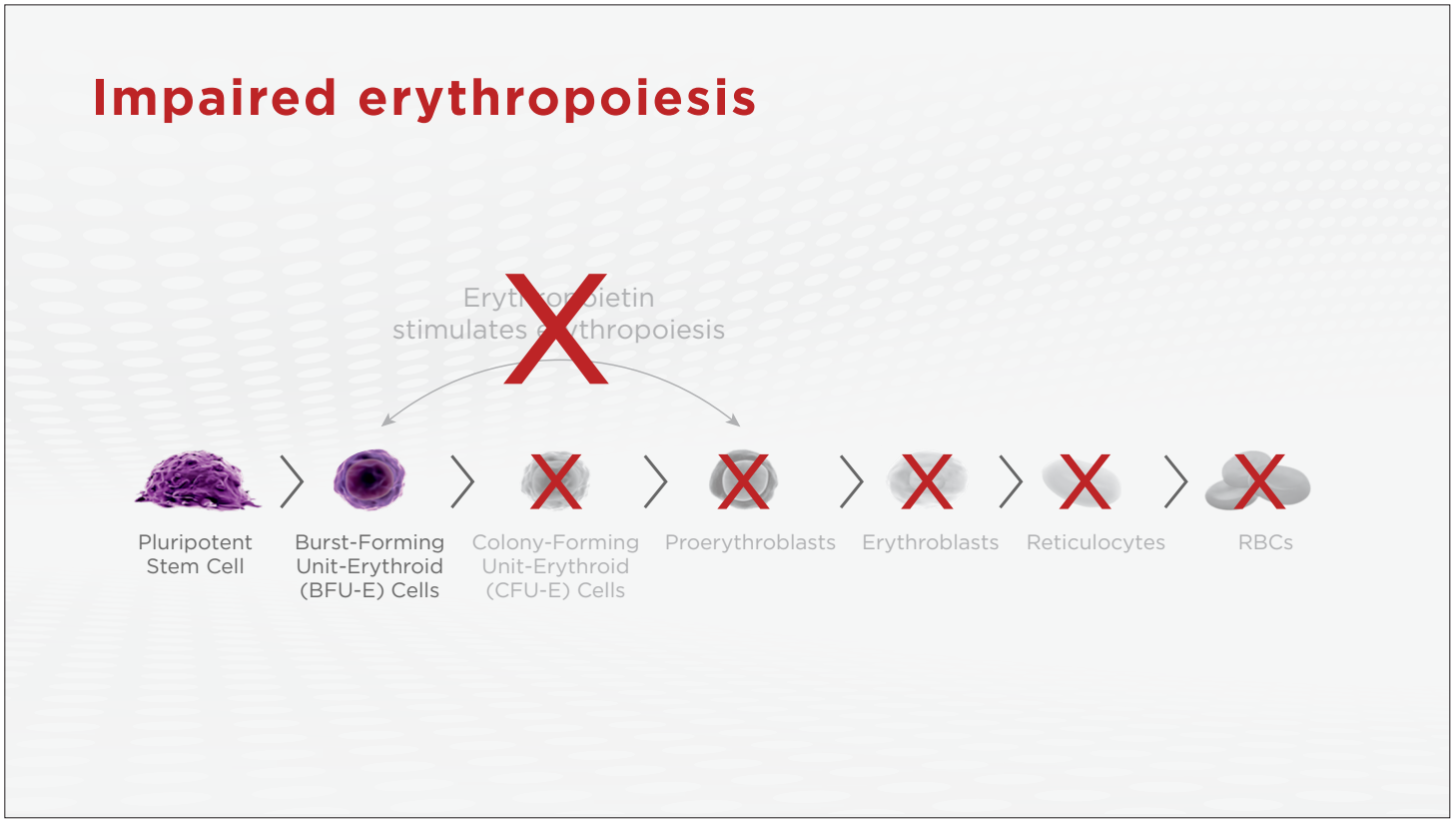
VOICE OVER TEXT



ANIMATION NOTES:

Title transistions to new copy. Images grey out. Red x's appear.

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VOICE OVER TEXT

As for comorbidities, these might include anything from iron deficiency or GI bleed to vascular disease, pneumonia, arthritis, pure red cell aplasia, or interdialytic weight gain.

Even a tooth abscess or foot ulcer could affect a patient's Hb levels.

The initiation of dialysis might also have an effect, as may the use of other medications including certain antibiotics and analgesics.

ANIMATION NOTES:

Title animates on. Images animate on (pop) and comorbities animate on (slide). As VO speaks certain ones, those enlarge.

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LAB MEASUREMENTS

	Hb (g/dL)	TSAT (%)	FERRITIN (ng/mL)	TIBC (ug/dL)	RETICULOCYTE COUNT (% of total RBC count)	WBC (cells/mm³)	ALBUMIN (g/dL)	Kt/V	URR
Reference Values	**Individualize**	**> 20%**	**≥ 100**	**250-460**	**0.5%-1.5%**	**5,000-10,000**	**≥ 4.0**	**> 1.2**	**≥ 65**
Chronic blood loss	▼	▼	▼		▲				
Hemolysis	▼	▲	▲		▲ or ▼				
Infection	▼	▼	▲	▼		▲	▼		
Inflammation	▼	▼	▲	▼		▲	▼		
Iron deficiency absolute	▼	▼	▼	▲					
Iron deficiency functional	▼	▼	▲	▼		▲	▼		
Secondary HPT	▼								
Inadequate dialysis	▼							< 1.2	65%
Malnutrition	▼						▼		

Kt/V is a formula for measuring dialysis adequacy, where K = dialyzer clearance, t = time, and V = volume of urea distribution in a patient's body.

VOICE OVER TEXT

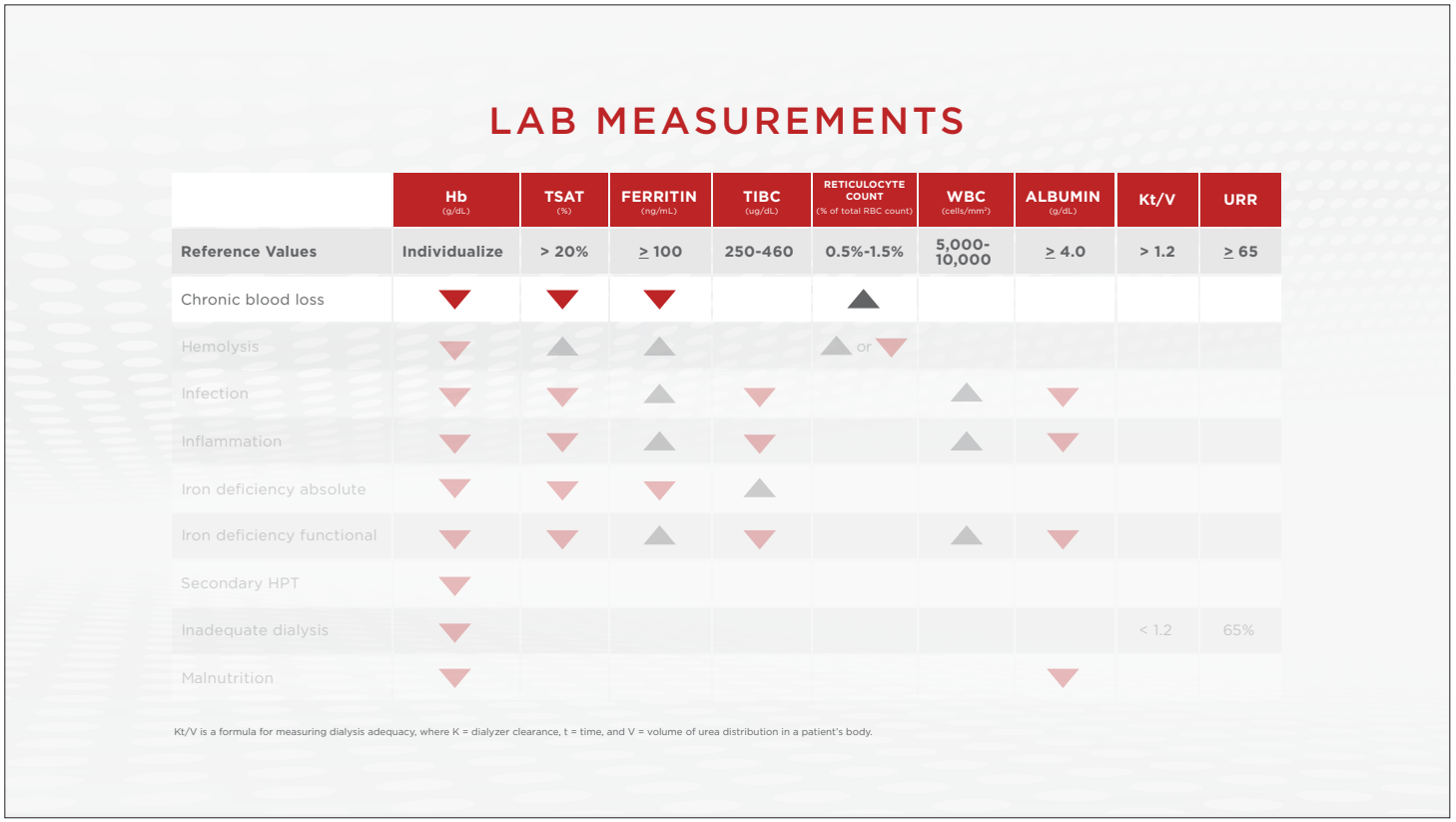
If a patient has comorbidities, we should consider the lab trends linked with those conditions that may impact Hb. This way we can manage the underlying cause of the Hb changes.

Lab trends might include the ferritin or albumin measurements for conditions such as chronic blood loss, hemolysis, infection, inflammation, iron deficiency, or malnutrition.

ANIMATION NOTES:

Chart (minus arrows) animate on. Arrows animate on. Left column is "highlighted" when VO speaks.

PAGE TITLE: **Assessing Hb Trends to Optimize Patient Outcomes**



VOICE OVER TEXT

Let's take a look at chronic blood loss, which is a common condition. In this case, we'd want to measure for Hb, transferrin saturation, ferritin, total iron binding capacity, retriculocyte count, white blood cell count, albumin, ratio of K multiplied by t over V, and urea reduction ratio.

ANIMATION NOTES:

All chart (except for the chronic blood loss row and up) fades to highlight. Red row highlights as VO speaks.

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VOICE OVER TEXT

Our final group of factors that could affect a patient's Hb levels is what goes on inside the dialysis center where patients are being treated.

ANIMATION NOTES:

Arrow slides in from left. Text and icon animate on. Background texture is a video file.

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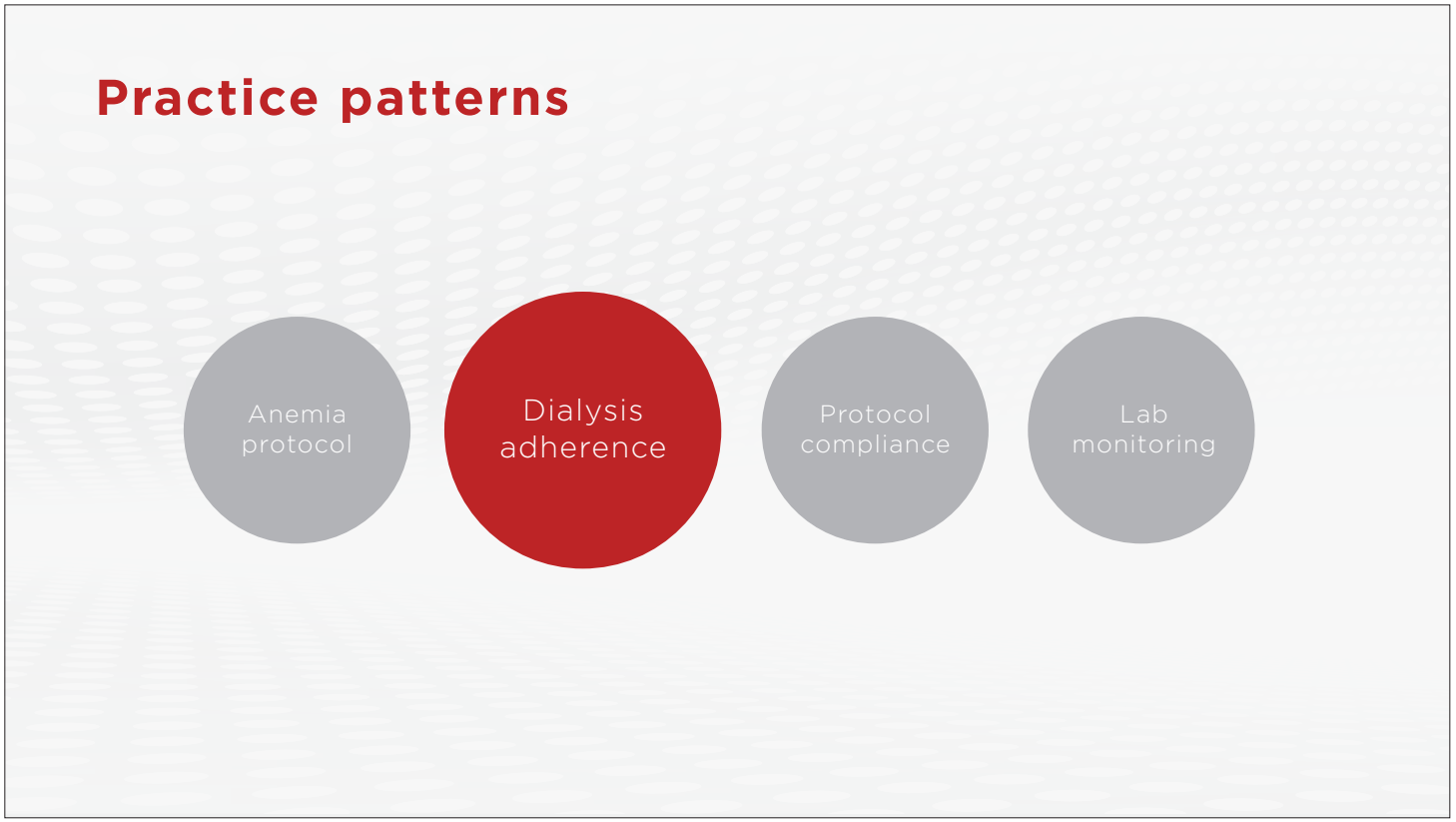


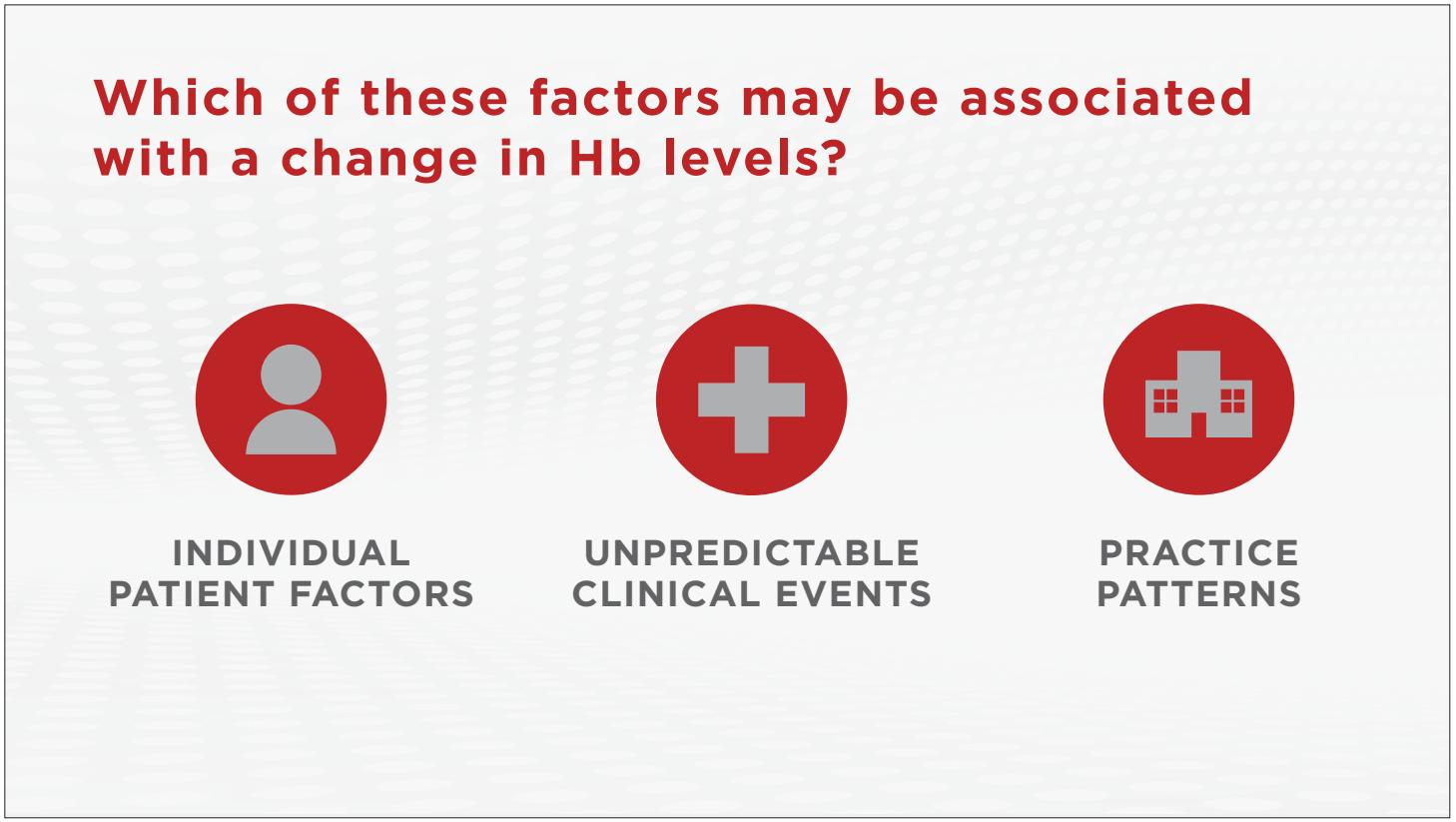
VOICE OVER TEXT

Practice patterns may include the anemia protocol, dialysis treatment adherence, protocol compliance, and lab monitoring.

ANIMATION NOTES:

Title animates on. All circles animate on. As each “practice pattern” is read by VO, that circle will turn red and enlarge.

PAGE TITLE: **Assessing Hb Trends to Optimize Patient Outcomes**



VOICE OVER TEXT

Having looked at the different factors that may affect a patient's Hb levels, we must evaluate which of those elements may be associated with the change in Hb levels.

ANIMATION NOTES:

Title animates on. Icons and factor names animate on as VO speaks.

PAGE TITLE: **Assessing Hb Trends to Optimize Patient Outcomes**

VOICE OVER TEXT

There are several questions we should ask. For example, is there a change in the patient's status and is this congruent with the patient's clinical picture? Is there a trend in the lab value – what does this look like, how fast is it moving, and how does the lab value relate to other lab parameters?

On the other hand, do you suspect there's a mistake in the results? Or is there anything else that may account for them?

ANIMATION NOTES:

Title animates on. All circles animate on. As each "question" is read by VO, that circle will turn red and enlarge.

PAGE TITLE: **Assessing Hb Trends to Optimize Patient Outcomes**

VOICE OVER TEXT

By using a systematic approach, we can find opportunities to better manage anemia for our patients with CKD.

ANIMATION NOTES:

Text animates on. Red blood cell background is a video file.

PAGE TITLE: **Assessing Hb Trends to Optimize Patient Outcomes**

VOICE OVER TEXT

It's a threefold matter of:

1. Monitoring Hb trends over time – that's weekly at initiation and at every dose adjustment until Hb is stable, and then at least monthly when Hb is stable

ANIMATION NOTES:

Title animates on. Icon and text animate on as VO speaks.

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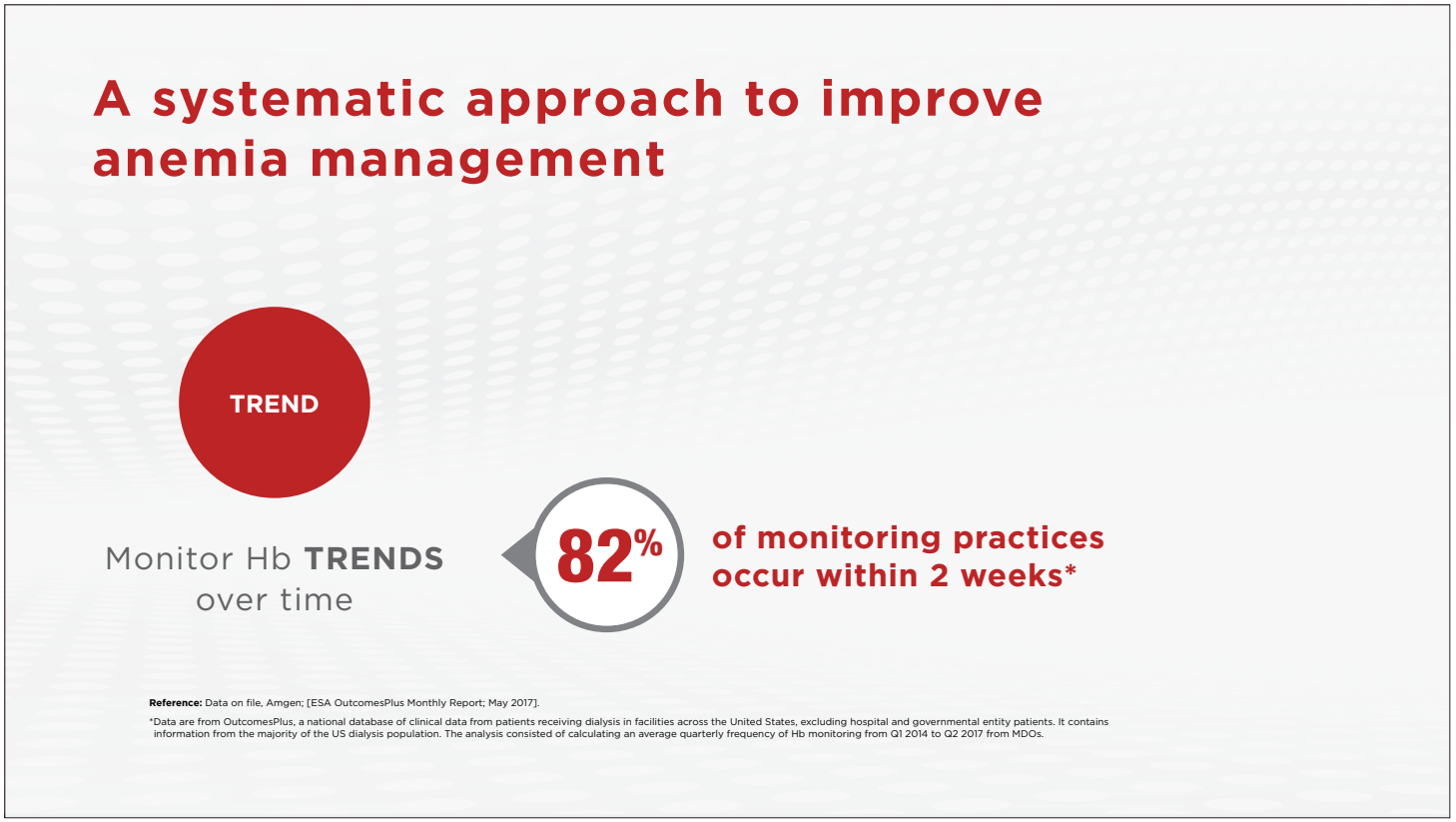

VOICE OVER TEXT

By the way, did you know that 82% of monitoring practices occur within 2 weeks, according to a national database?

ANIMATION NOTES:

Stat animates on.

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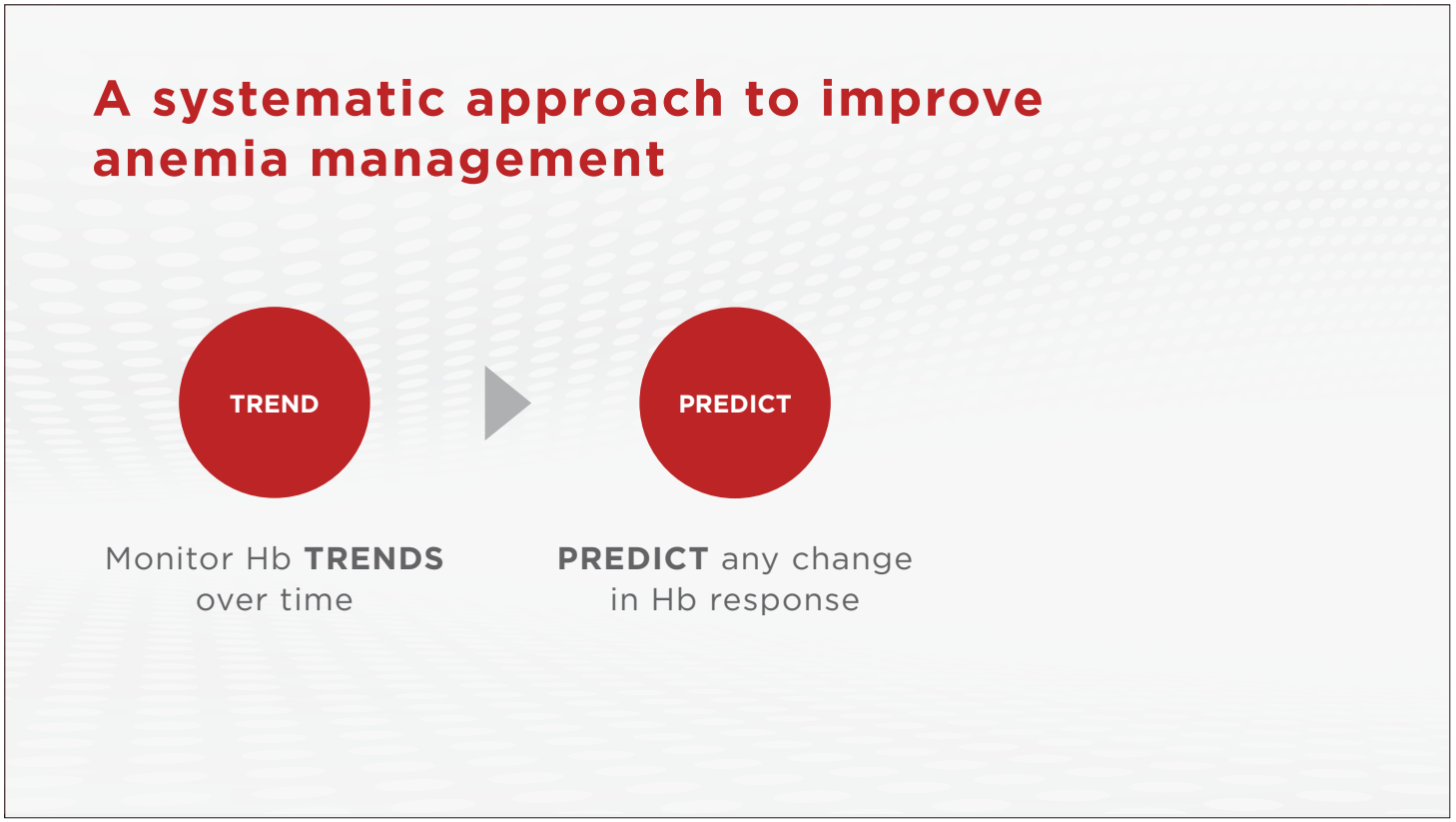

VOICE OVER TEXT

2. Predicting any change in Hb response – this means assessing iron status and causes of low or high Hb, and

ANIMATION NOTES:

Arrow and next icon and text animate on as VO speaks.

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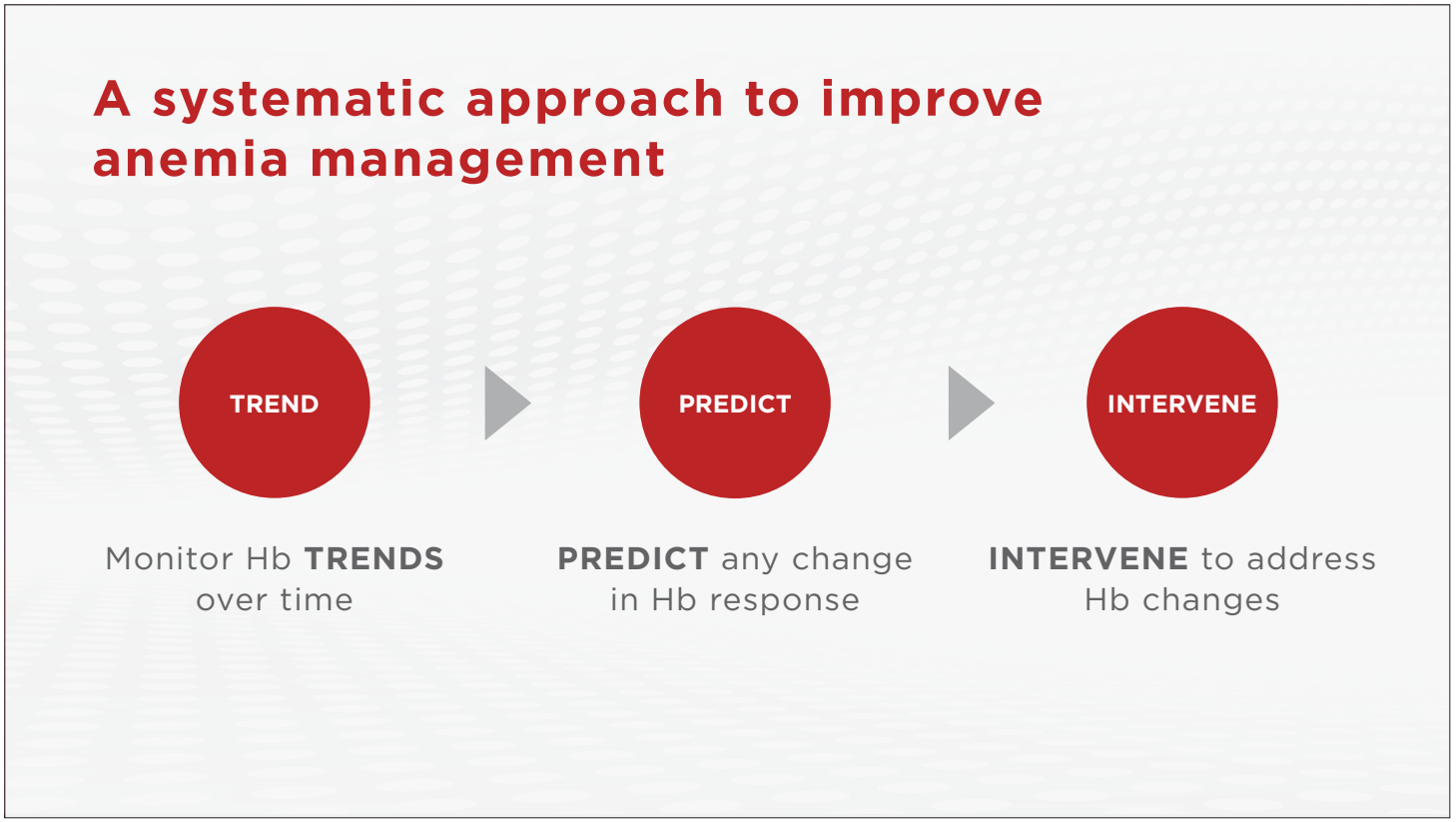

VOICE OVER TEXT

3. Intervening to address Hb changes as appropriate – this could mean identifying and managing factors affecting Hb, as well as factors associated with anemia due to CKD. It may also mean individualizing anemia management dosing, using the lowest dose sufficient to reduce the need for blood transfusion.

ANIMATION NOTES:

Arrow and next icon and text animate on as VO speaks.

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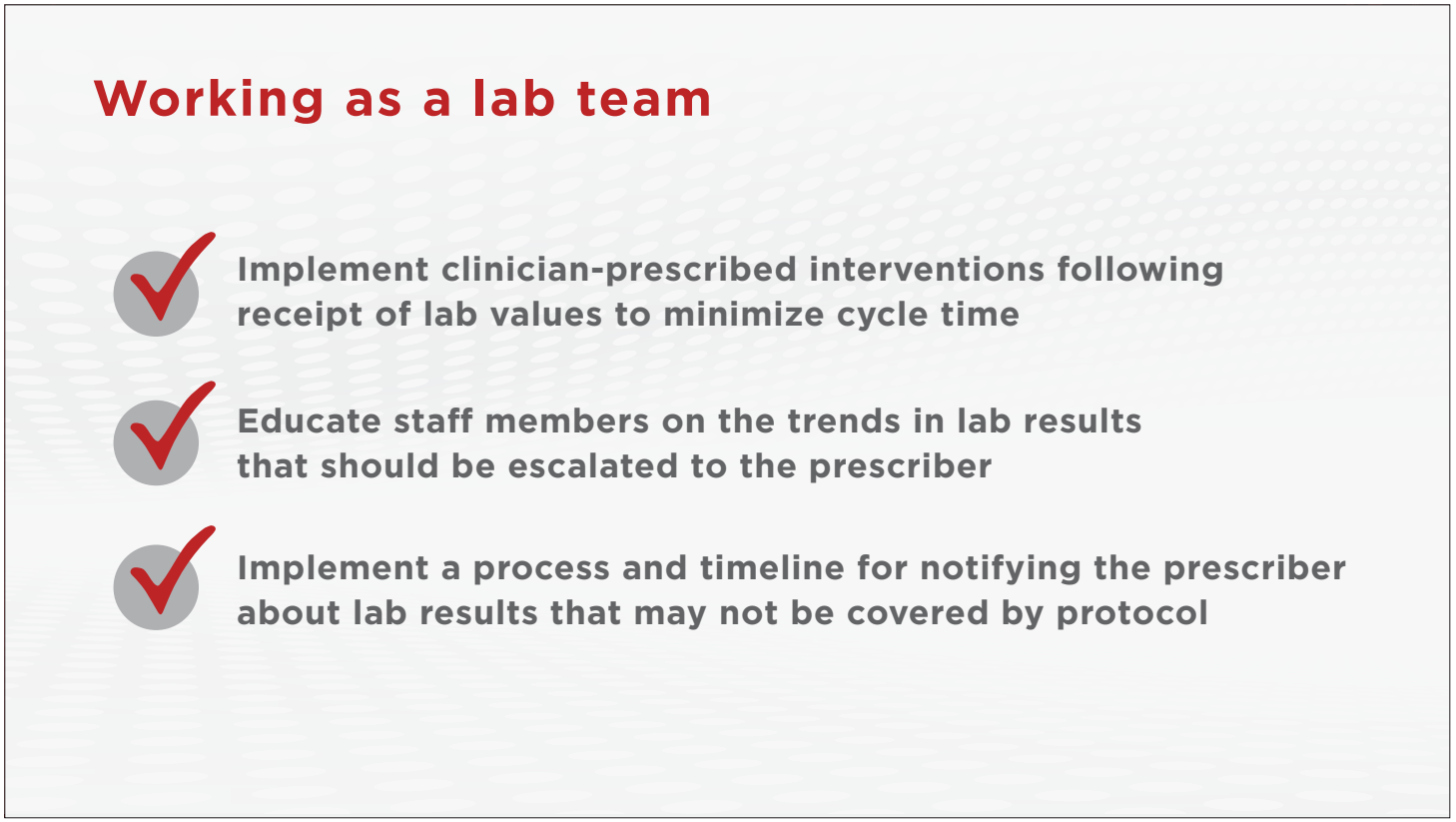

VOICE OVER TEXT

We should also find a system for working as a lab team. For example, it's important to educate your staff on trends that should be reported to the prescriber, and to implement a process and timeline for notifying the prescriber about lab results that may not be covered by normal protocol.

ANIMATION NOTES:

Title animates on. As VO speaks, each bullet (with checkmark) animates on.

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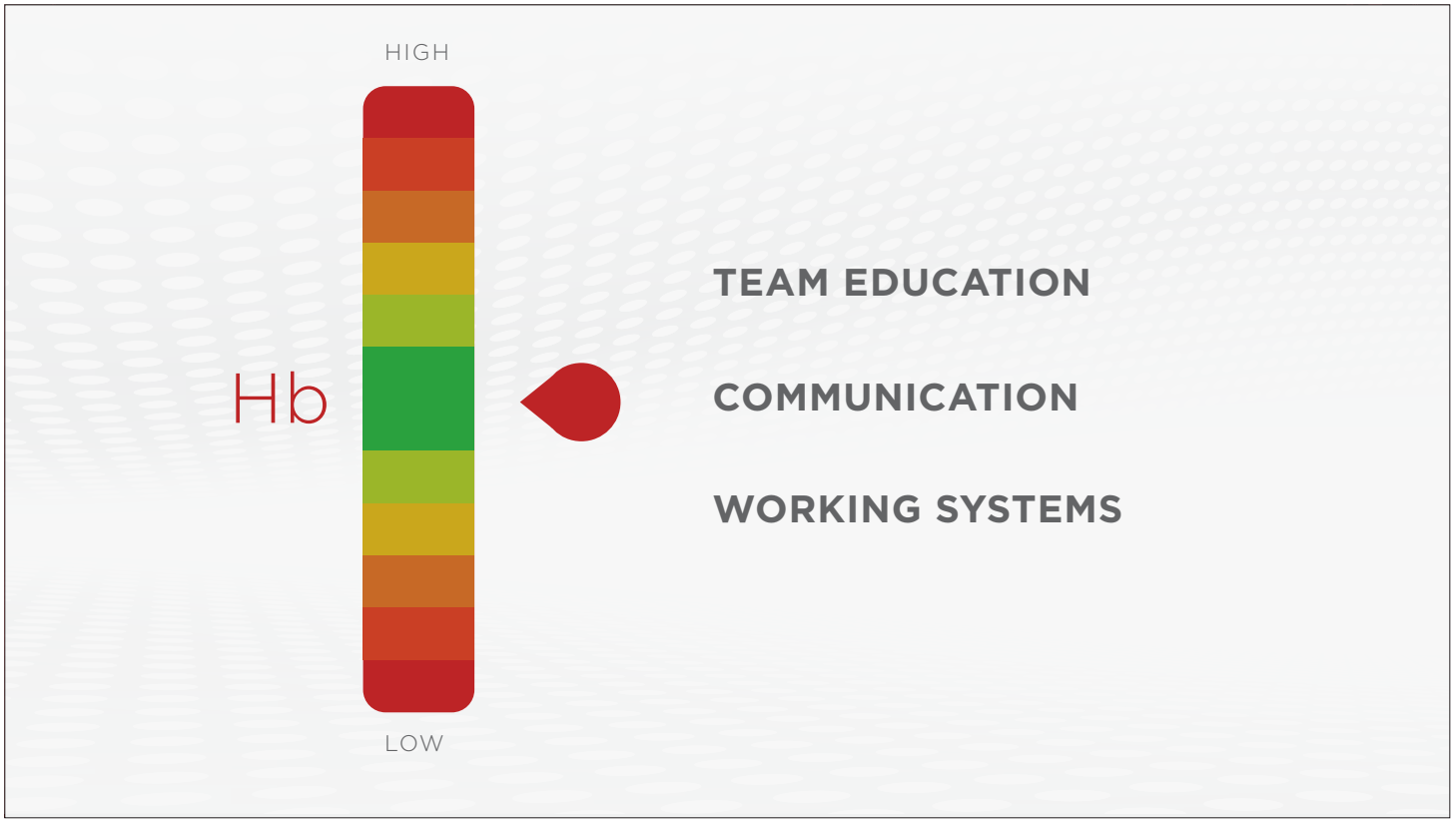

VOICE OVER TEXT

With team education, communication, and working systems, we can manage our patients' treatment and keep their Hb levels within range to achieve the best possible outcomes.

ANIMATION NOTES:

Hb level animates on, blood drop indicator moves up and down. When indicator settles in middle, 3 bullets animate on as VO speaks.

PAGE TITLE: **Assessing Hb Trends to Optimize Patient Outcomes**

VOICE OVER TEXT

As a recap of what we've learned, here are some short questions for you:

ANIMATION NOTES:

Text animates on. Red blood cell background is a video file.

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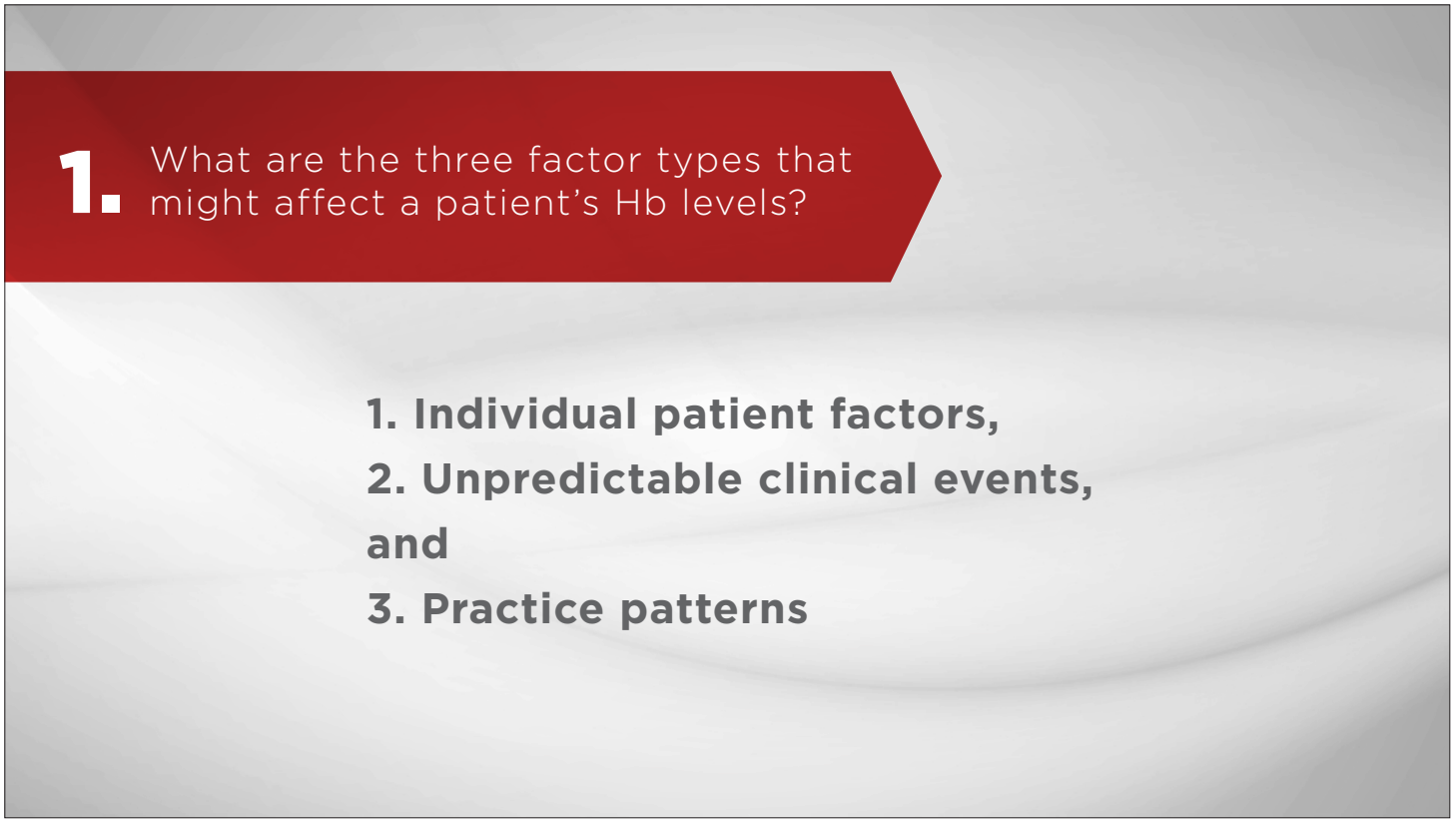
VOICE OVER TEXT

What are the three factor types that might affect a patient's Hb levels?



ANIMATION NOTES:

Arrow slides in from left. Number and question animate on. Pause for audience to think. Answer animates on, one line at a time. No VO.

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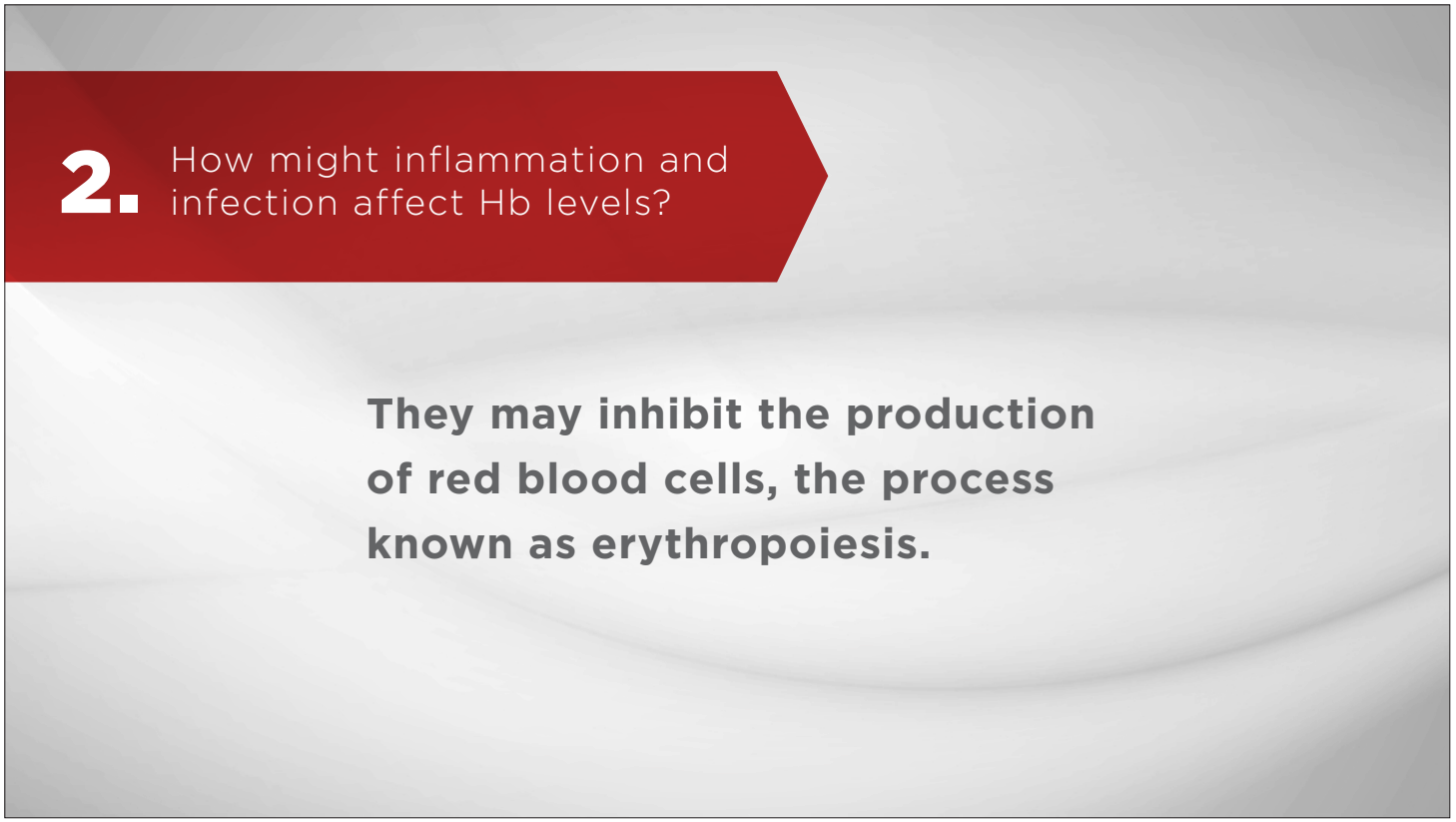
VOICE OVER TEXT

How might inflammation and infection affect Hb levels?



ANIMATION NOTES:

Arrow slides in from left. Number and question animate on. Pause for audience to think. Answer animates on, one line at a time. No VO.

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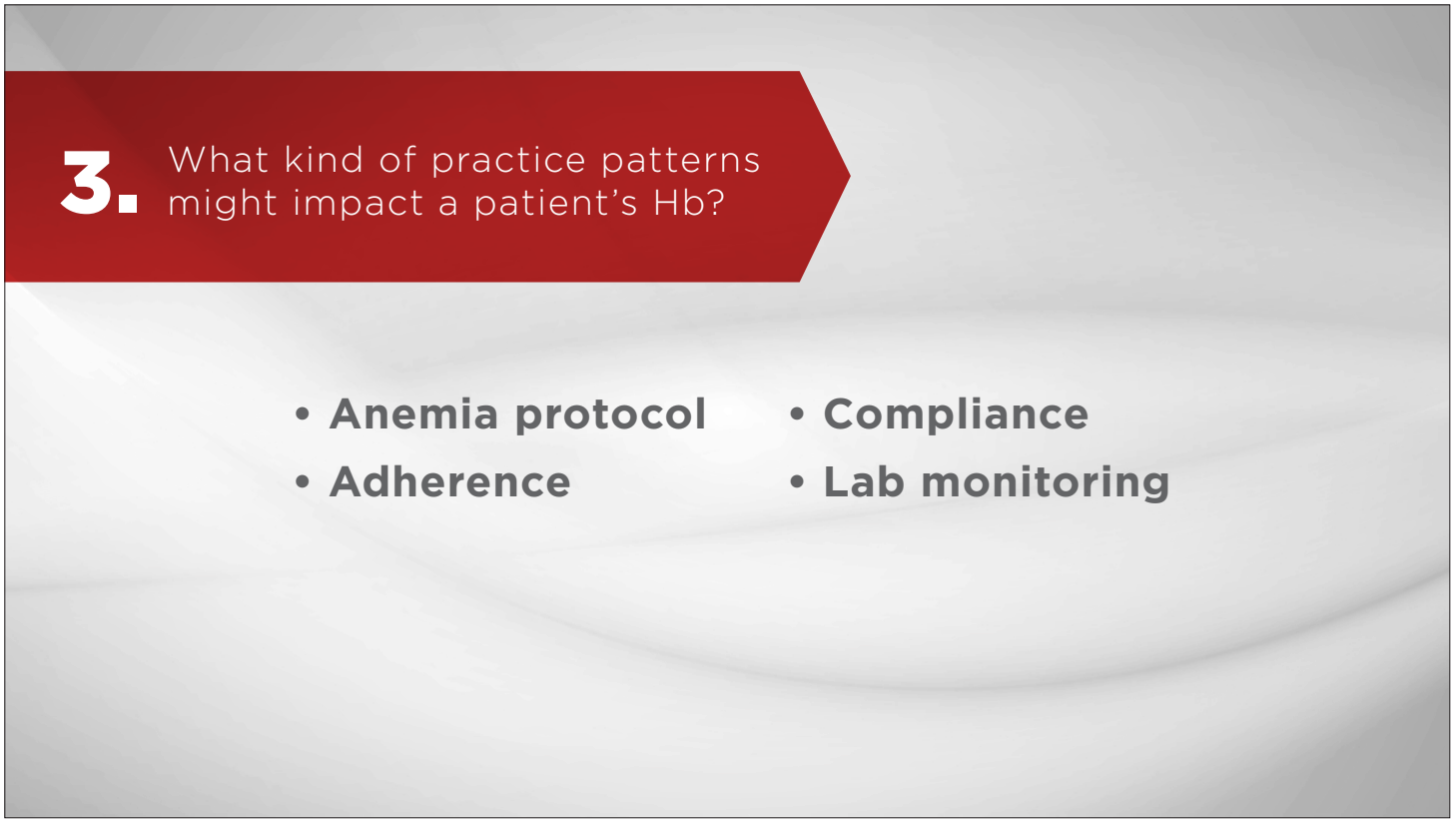
VOICE OVER TEXT

What kind of practice patterns might impact a patient's Hb?



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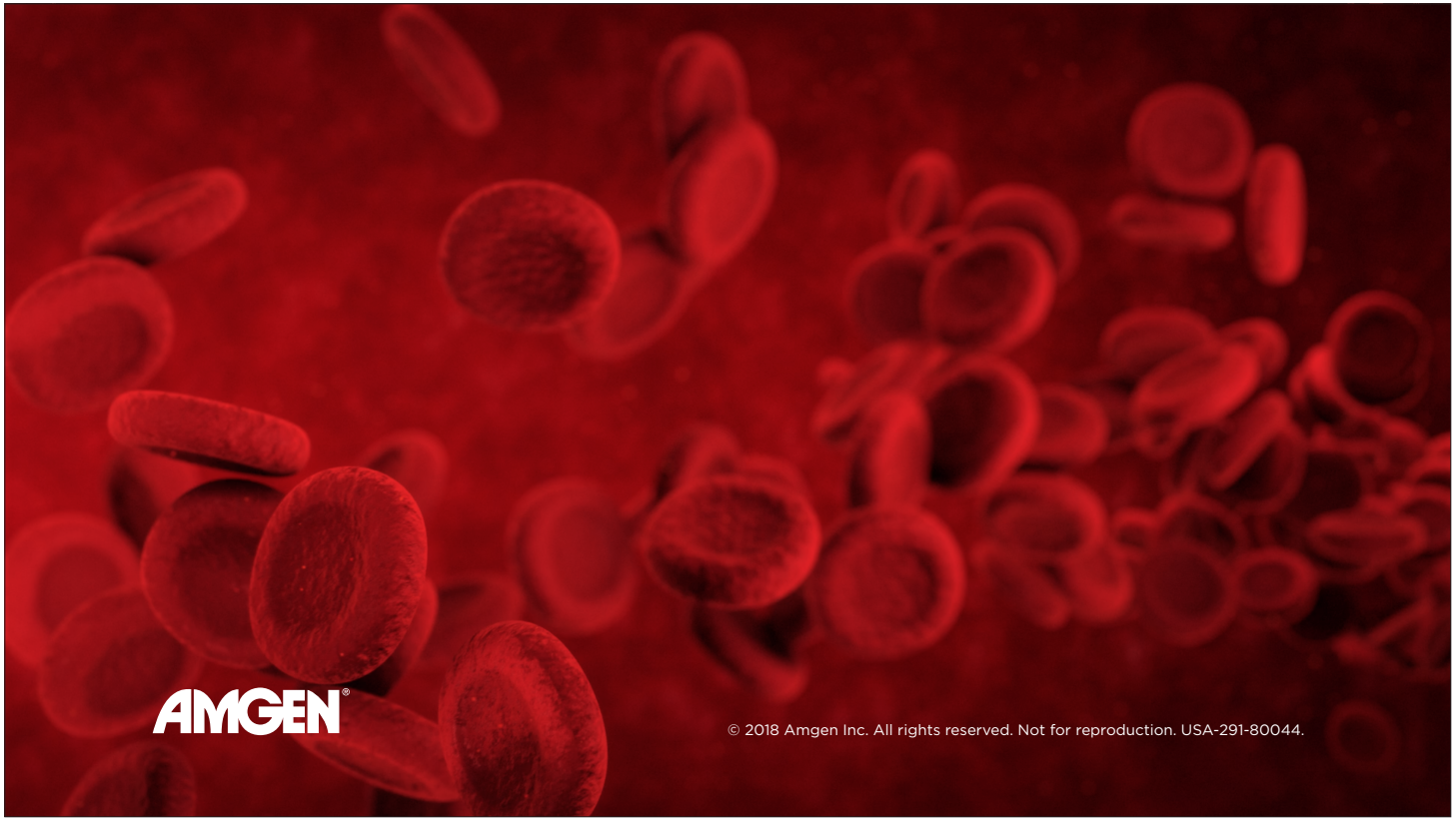

VOICE OVER TEXT

Thank you for watching. This completes our video on assessing Hb trends to optimize patient outcomes.

ANIMATION NOTES:

Text and logo animate on. Red blood cell background is a video file.