

# Royal College Research Forum:

## Using Competence By Design assessment data to improve CBME: Starting a national conversation

Meet the speakers



Brent Thoma, MD, MA,  
MSc, FRCPC, DRCPC  
(Presenter)



Susan D. Moffatt-Bruce, MD,  
FRCSC, PhD, MBA, FACS



Jason R. Frank, MD, MA  
(Ed.), FRCPC



Tanya Horsley PhD, MBA

# Conflict of Interest Declaration

## **Brent Thoma, MD, MA, MSc, FRCPC, DRCPSC**

Developed the dashboard software demonstrated within this presentation which has been published under an open-access license. He has received grant support from the University of Saskatchewan and Canadian Association of Medical Educators for this work. He is also paid by the Royal College of Physicians and Surgeons of Canada for work as a Clinician Educator.

## **Susan D. Moffatt-Bruce, MD, FRCSC, PhD, MBA, FACS**

Is a co-investigator on a grant funded by the Agency for Healthcare Research and Quality (AHRQ).

## **Tanya Horsley, PhD, MBA**

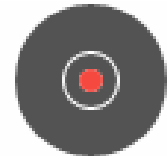
Does not have a relationship with a for-profit and/or a not-for-profit organization to disclose.

## **Jason R, Frank, MD, MA (Ed.), FRCPC**

Does not have a relationship with a for-profit and/or a not-for-profit organization to disclose.

# Housekeeping


- You have been automatically muted
- Your camera cannot be activated
- The session is being recorded
- Questions to the panel can be submitted in both English and French

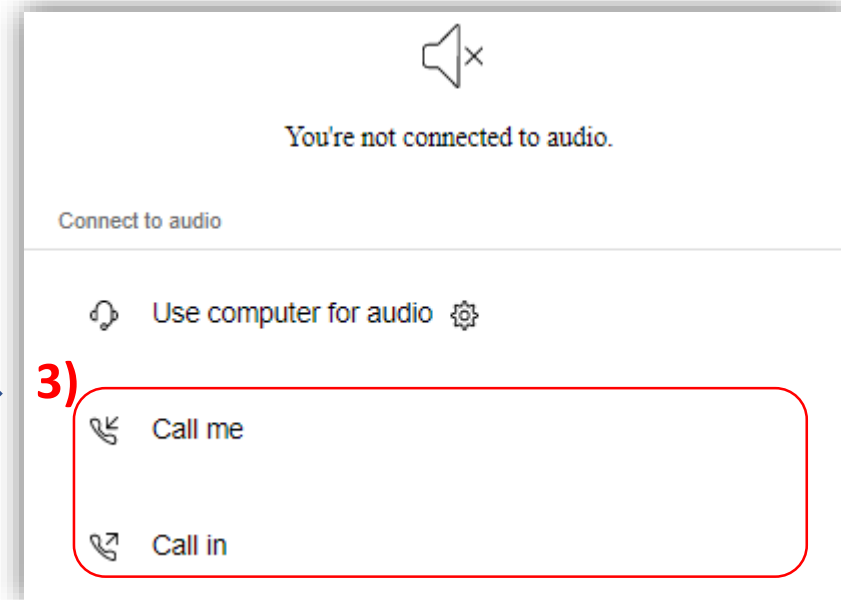
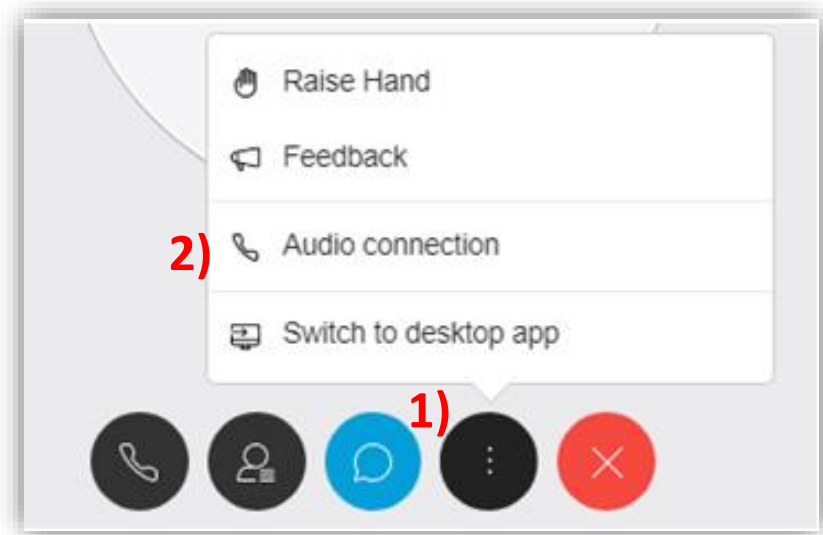


- For technical support:
  - Email [researchunit@royalcollege.ca](mailto:researchunit@royalcollege.ca)

# Switching to Phone Audio


- Experiencing issues with your computer audio? Here is how to connect via your phone:

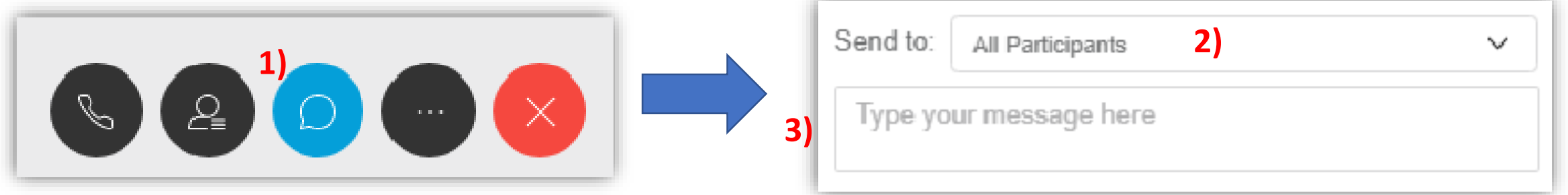
- 1) Click 
- 2) Select **“Audio connection”**
- 3) Choose **“Call me”** or **“Call in”** option



# Send a question for the panelists

To submit:

- 1) Open the **Chat** panel by clicking 
- 2) Within the **Chat** panel, in the **Send to** or **To** drop-down list, please select “*All Participants*” only
- 3) Enter your question, then press **Enter**



# Meet the Speakers



Brent Thoma, MD, MA, MSc, FRCPC,  
DRCPSC  
Associate Professor of Emergency  
Medicine, University of Saskatche-  
wan College of Medicine, Clinician  
Educator, Royal College of Physi-  
cians and Surgeons of Canada  
(Presenter)



Susan D. Moffatt-Bruce, MD, FRCSC,  
PhD, MBA, FACS  
Chief Executive Officer Royal College  
of Physicians and Surgeons of  
Canada (Speaker)



Jason R. Frank, MD, MA (Ed.),  
FRCPC  
Director, Specialty Education,  
Strategy and Standards Royal  
College of Physicians and Surgeons  
of Canada (Speaker)

# Using Competence By Design assessment data to improve CBME: Starting a national conversation

Dr. Brent Thoma

MD MA MSc FRCPC DRCPC

Associate Professor of Emergency Medicine, University of Saskatchewan  
Clinician Educator, Royal College of Physicians & Surgeons of Canada

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# CBD Assessment Data



50,000

# Objectives

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Demonstrate the potential for CBD assessment data to improve our residents, faculty, and programs

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Discuss barriers preventing the effective utilization of CBD assessment data

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Describe how advanced analytical techniques will inform the future of assessment in medical education





Learning  
analytics

*The analysis and  
representation of data  
about learners in order  
to improve learning.*

## **TD 1: Recognizing the unstable/critically ill patient, mobilizing the health care team and supervisor, and initiating basic life support**

### Key Features:

The focus of this EPA is the recognition and first steps of management for patients with cardiorespiratory arrest, unstable dysrhythmias, shock, respiratory distress, and altered neurologic status. Assessment of pediatric presentations is not a requirement for this EPA.

### Observation plan:

Direct observation by supervising physician or resident in Core or TTP

Use Form 1. Form collects information on:

- Setting: emergency department; simulation; other
- If "other" identify setting: [input text]
- Patient demographic: infant; child; youth; adult; senior
- Complexity: simple; complex patient characteristic; complex clinical characteristic; complex environmental characteristic
- Clinical presentation: cardiorespiratory arrest; unstable dysrhythmia; shock; respiratory distress; altered neurological status; other
- If "other" identify clinical presentation: [input text]

Collect 10 observations of achievement

- At least 1 of each clinical presentation
- May be simulated
- At least 3 different observers

# Sample EPA

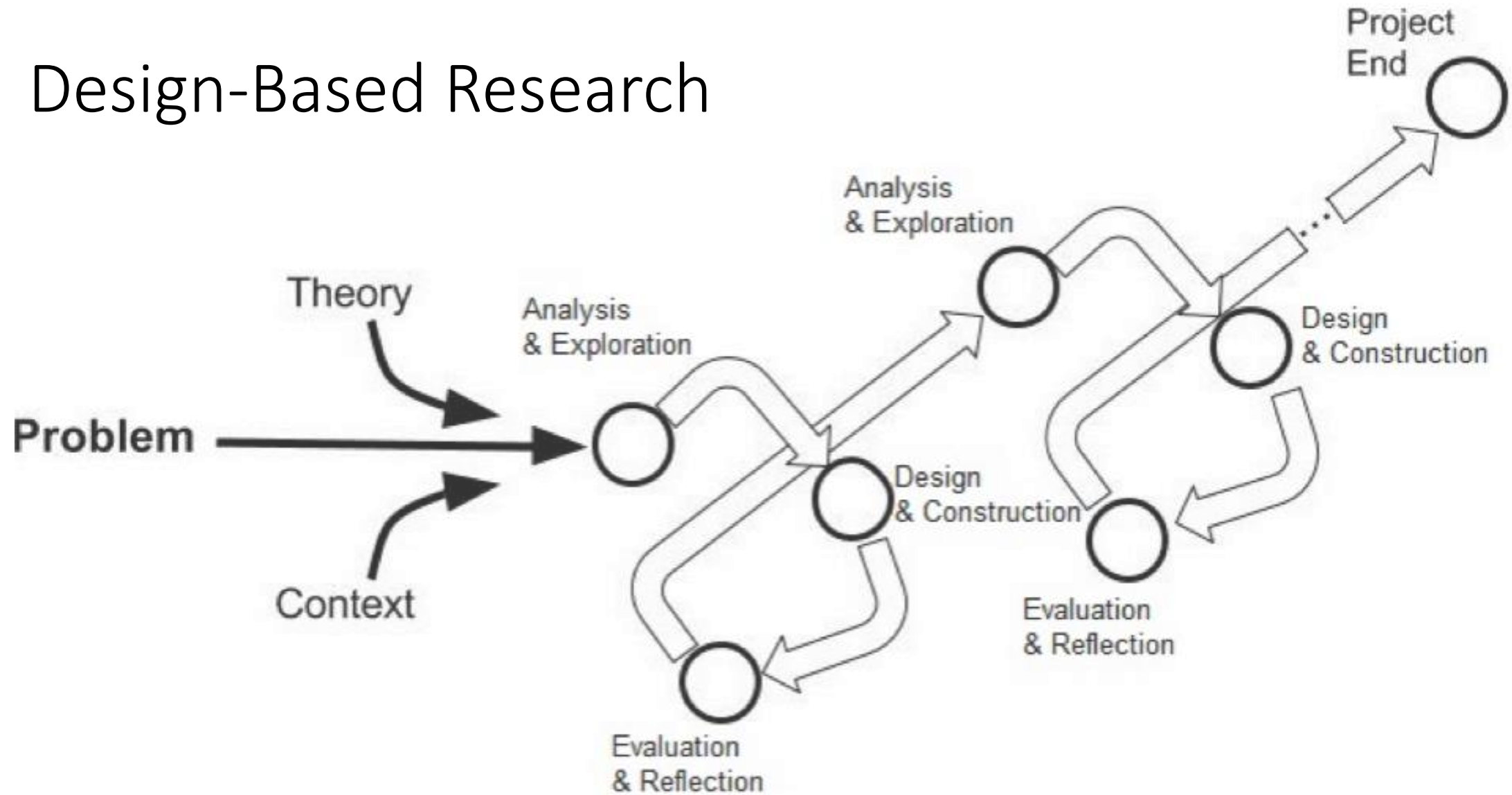
# Entrustment Scale

**LOW**

1. I had to do
2. I had to talk them through
3. I had to prompt
4. I had to be there
5. I didn't need to be there

**HIGH**

# Design-Based Research



**Thoma B**, Bandi V, Carey R, Mondal D, Woods R, Martin L, Chan T. Developing a dashboard to meet Competence Committee needs: a design-based research project. Canadian Medical Education Journal. 2020 Mar;11(1):e16.

Carey R, Wilson G, Bandi V, Mondal D, Martin LJ, Woods R, Chan T, **Thoma B**. Developing a dashboard to meet the needs of residents in a competency-based training program: A design-based research project. Canadian Medical Education Journal. 2020 Dec;11(6):e31.

@Brent\_Thoma - brent.thoma@usask.ca



A stack of several books is shown on a wooden surface. The books are slightly out of focus, with the top book having a dark cover. The text 'A case' is overlaid in the center in a white, sans-serif font.

A case

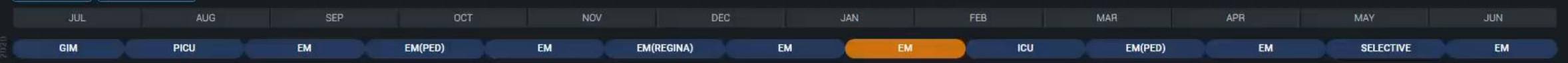
[RESIDENT METRICS](#)
[NORMATIVE ASSESSMENT](#)
[FACULTY DEVELOPMENT](#)
[PROGRAM EVALUATION](#)
[EXPORT DATA](#)

Fake Learner

CURRENT STAGE - CORE OF DISCIPLINE   
 PROGRAM START DATE - SUN JUL 01 2018   
 LAST UPDATED ON - FRI JAN 08 2021   
 [Checklist](#)

ROTATION SCHEDULE

[View History](#)
[View EPAs/Block](#)



Filter EPAs by Rotation Schedule ⓘ (Drag slider or click points to set range)



EPA ACQUISITION METRICS

EPAS OBSERVED PER WEEK

**3.15**

TOTAL EPAS OBSERVED

**419**

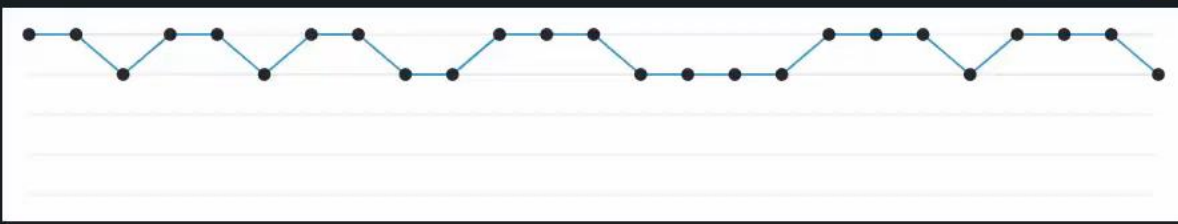
EPA EXPIRY RATE

**10%**



RECENT EPAS ⓘ

Last 25 Records



COMPETENCE COMMITTEE FEEDBACK AND RESIDENT PROGRESS ⓘ



A stack of several books is shown on a wooden surface. The books are slightly out of focus, with the top book having a dark cover and the others having lighter covers. The text "A case" is overlaid in the center of the image in a white, sans-serif font.

A case

A stack of several books is positioned on the right side of the image, resting on a light-colored wooden surface. The books are slightly out of focus, with their spines and pages visible. The background is a soft, blurred gradient of light colors. The text 'A case' is centered in the middle of the image in a white, sans-serif font.

A case



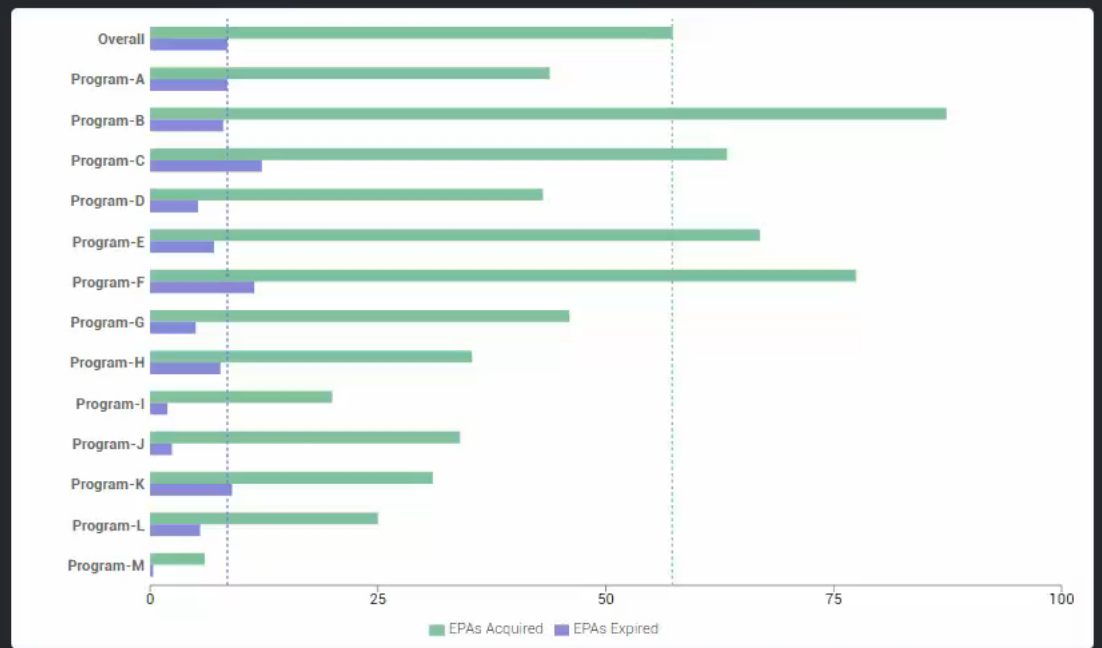
# Institutional Data

Please Select Academic Year 2020-2021
 Anonymize Programs

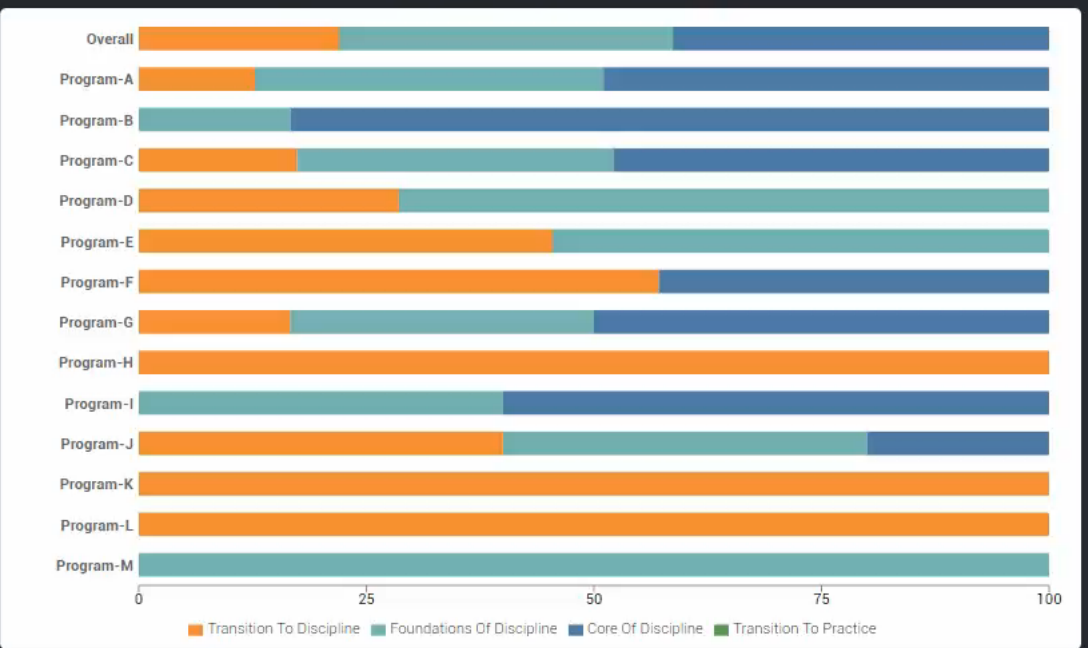
OVERALL ACQUISITION METRICS FOR ALL PROGRAMS



EPAS ACQUIRED AND EXPIRED (PER RESIDENT)  NORMALIZE PER RESIDENT



RESIDENT TRAINING STAGE DISTRIBUTION



EPA RATING DISTRIBUTION



EPA FEEDBACK WORD COUNT

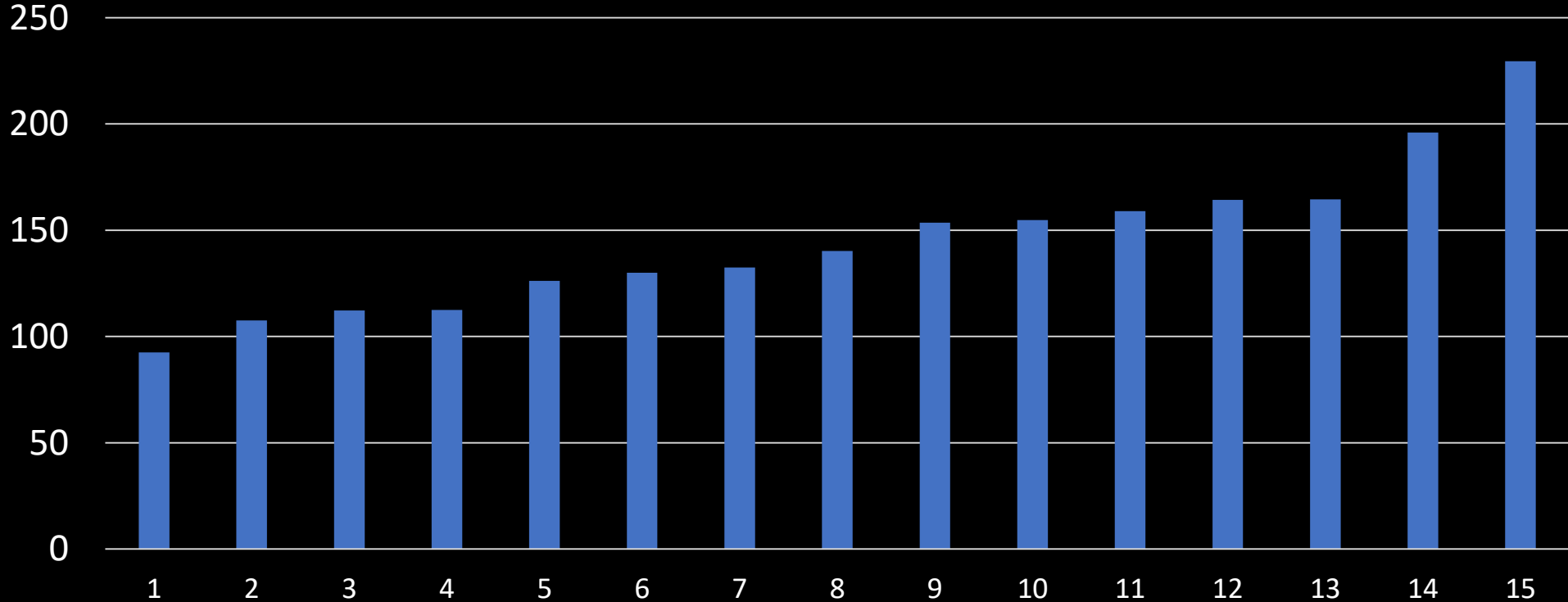


[Report](#)

# Specialty Data



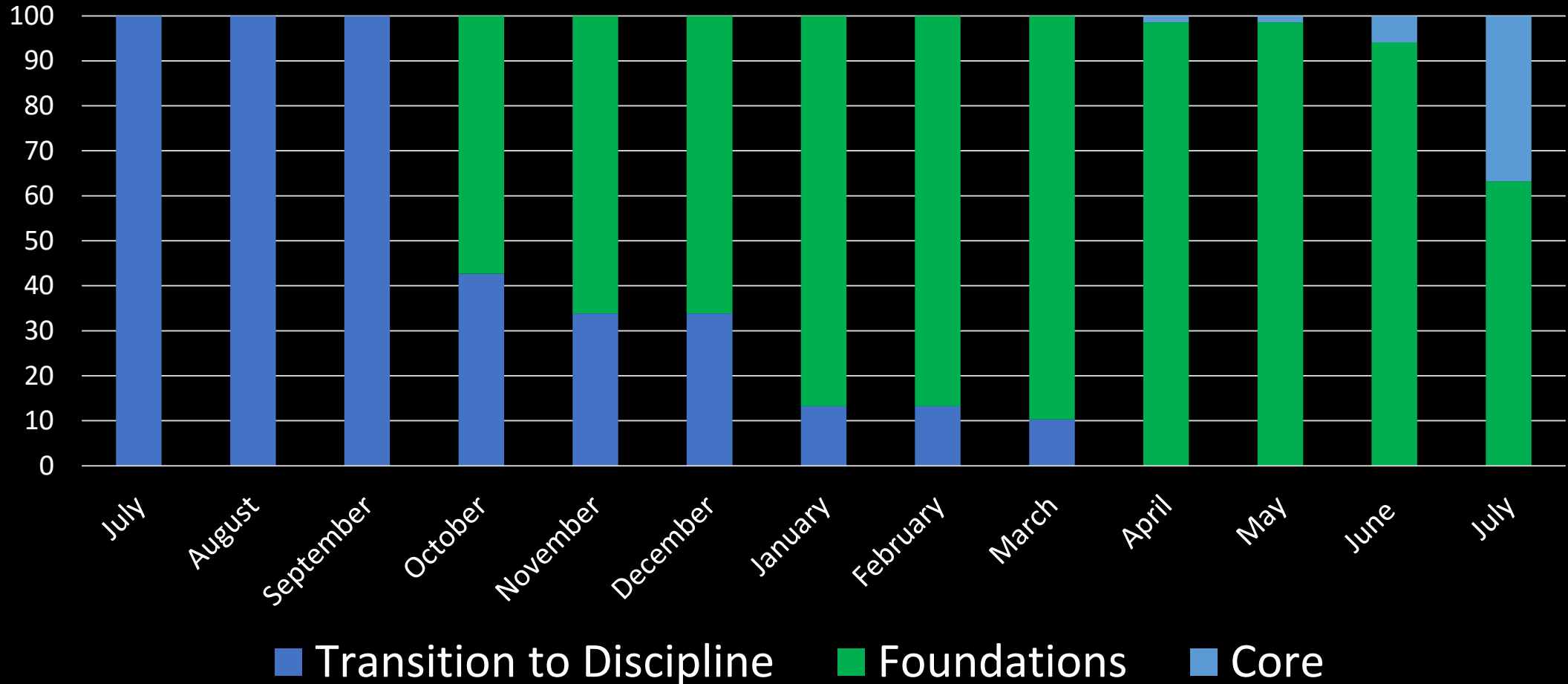
# Average number of EPAs per resident across programs



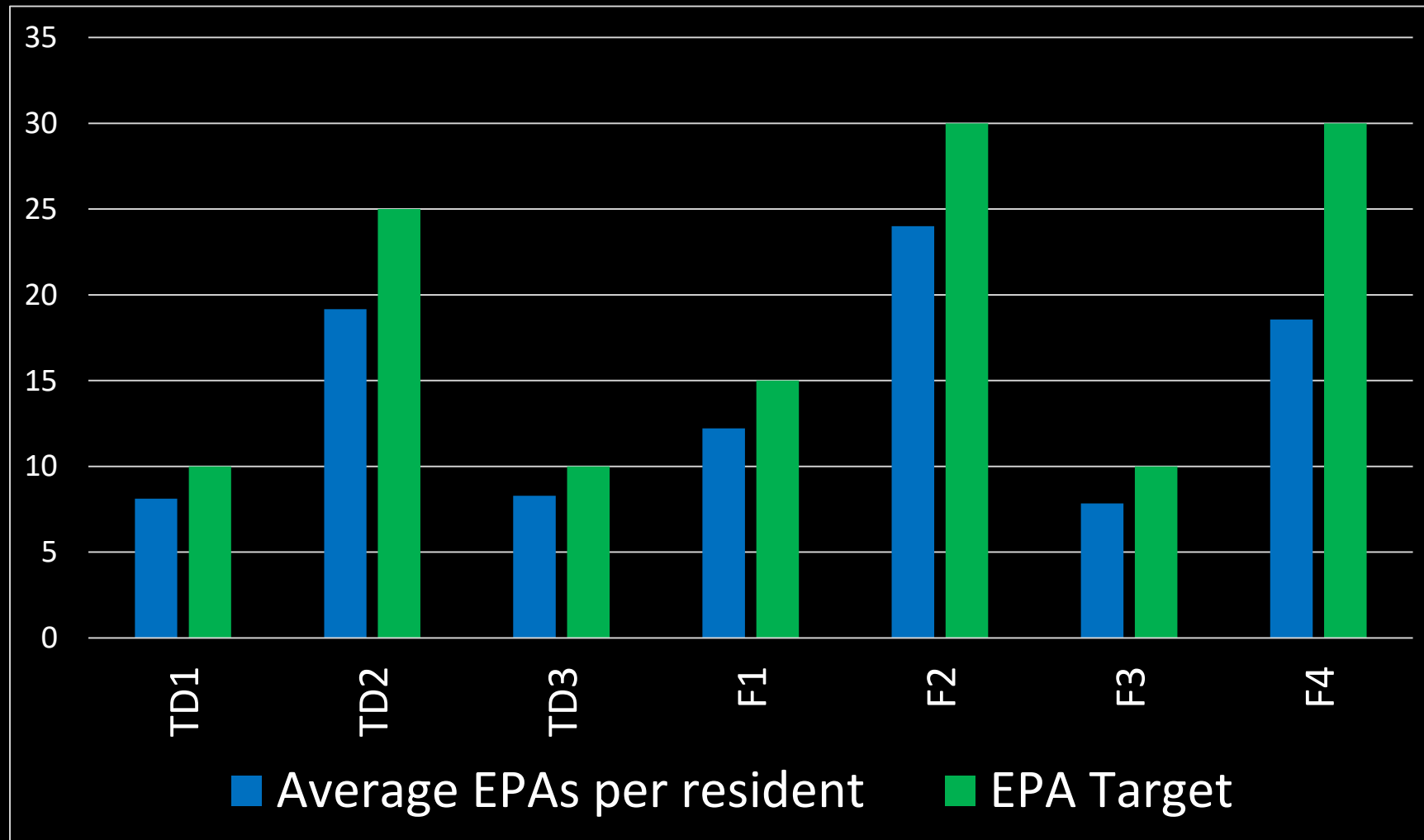
Thoma B, Hall AK, Clark K, Meshkat N, Cheung WJ, Desaulniers P, Ffrench C, Meiwald A, Meyers C, Patocka C, Beatty L. Evaluation of a national competency-based assessment system in emergency medicine: a CanDREAM study. Journal of Graduate Medical Education. 2020 Aug;12(4):425-34.



# Percentage of residents in each stage over time



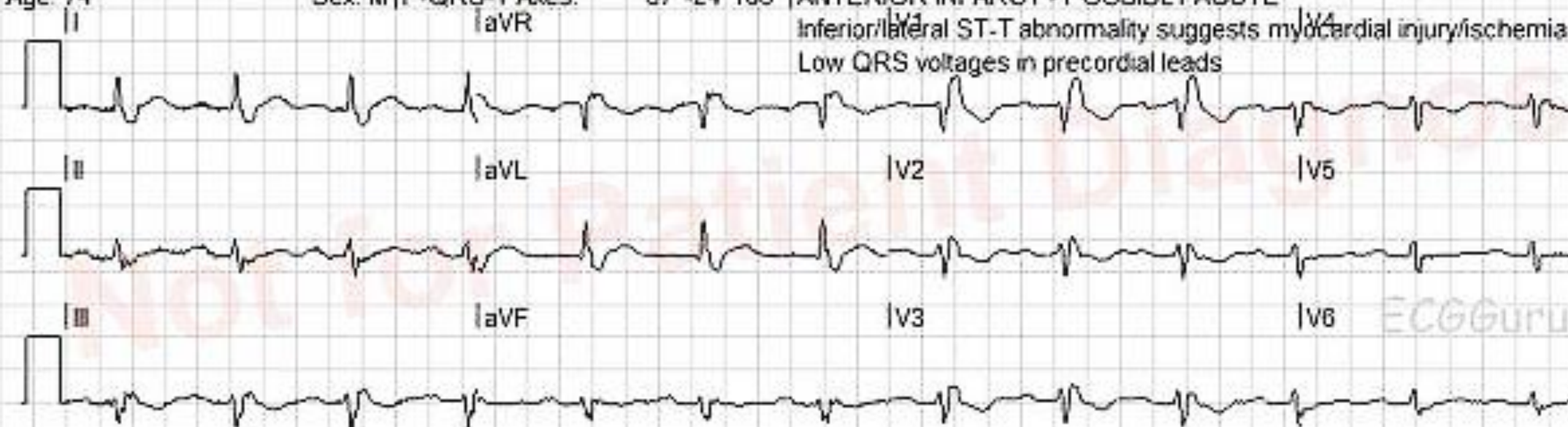
# Average EPAs per resident relative to promotion target





Opportunities

Name:	12-Lead 5	HR 83bpm	Abnormal ECG <b>**Unconfirmed**</b>
ID:		5.03.23 PM	<b>*** MEETS ST ELEVATION MI CRITERIA ***</b>
Patient ID:	PR 0.240s	QRS 0.096s	Sinus rhythm with 1st degree A-V block
Incident ID:	QT/QTc:	0.390s/0.430s	Leftward axis
Age: 74	Sex: M   P-QRS-T Axes:	57°-24°103°	<b>ANTERIOR INFARCT - POSSIBLY ACUTE</b>
	aVR		Inferior/lateral ST-T abnormality suggests myocardial injury/ischemia
			Low QRS voltages in precordial leads



x1.0 .05-150Hz 25mm/sec

Physio-Control, Inc. Comments:

# Change Password

To keep your valuable information in WorkZone safe, we require that you use a strong password that meets the minimum requirements listed below.

Enter your old password. If you do not know your old password (and it is not filled in for you automatically), click "forgot password", and a temporary link will be emailed to you.

As you enter your new password, you'll see which requirements you've met and which remain. To have a very strong password automatically generated for you, click "create a very strong password for me".

<b>OLD PASSWORD:</b>	<input type="password"/>	<a href="#">forgot password</a>
<b>NEW PASSWORD:</b>	<input type="password"/>	<a href="#">show password</a>
<b>VERIFY PASSWORD:</b>	<input type="password"/>	✘

### Password Requirements

- ✘ MUST contain at least 8 characters (12+ recommended)
- ✘ MUST contain at least one uppercase letter
- ✘ MUST contain at least one lowercase letter
- ✘ MUST contain at least one number
- ✘ MUST contain at least one special character (!"#\$%&'()\*+,-./:;<=>?@[\\]^\_`{|}~ )
- ✔ MAY NOT contain more than two identical characters in a row
- ✔ MAY NOT contain first name, last name, email address mailbox or domain, company name or commonly used passwords
- ✔ MAY NOT match commonly used password character patterns

5 remaining rules need to be met

[create a very strong password for me](#)

### Password Strength Indicator

Cancel





A dark, moody photograph of a barbed wire fence. The fence is made of several strands of twisted metal with sharp points, and it is set against a dark, overcast sky. The word "Challenges" is overlaid in the center in a clean, white, sans-serif font.

# Challenges

**Thoma B, Warm E, Hamstra SJ, Cavalcanti R, Pusic M, Shaw T, Verma A, Frank JR, Hauer KE.** Next Steps in the Implementation of Learning Analytics in Medical Education: Consensus From an International Cohort of Medical Educators. *Journal of Graduate Medical Education.* 2020 May 13.



A large, white, stylized arrow pointing upwards is centered on a dark, textured background that resembles asphalt shingles. The arrow is composed of a wide base that tapers to a point at the top. The background has a repeating pattern of small, dark, rectangular tiles with a slightly irregular, wavy edge.

Moving Forward

## Conclusions

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Assessment data can support the development of our people, programs, and systems

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There are numerous challenges we will need to address for CBD assessment data to be fully utilized

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The secure, ethical, and appropriate use of this data should be a priority