



Innovation and Evaluation of Impact

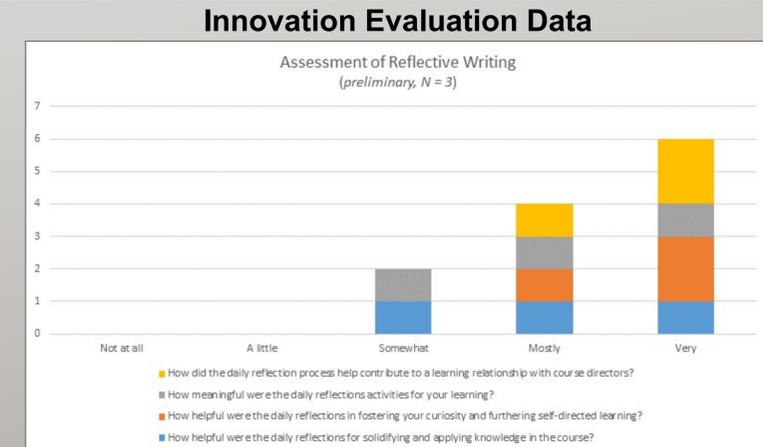
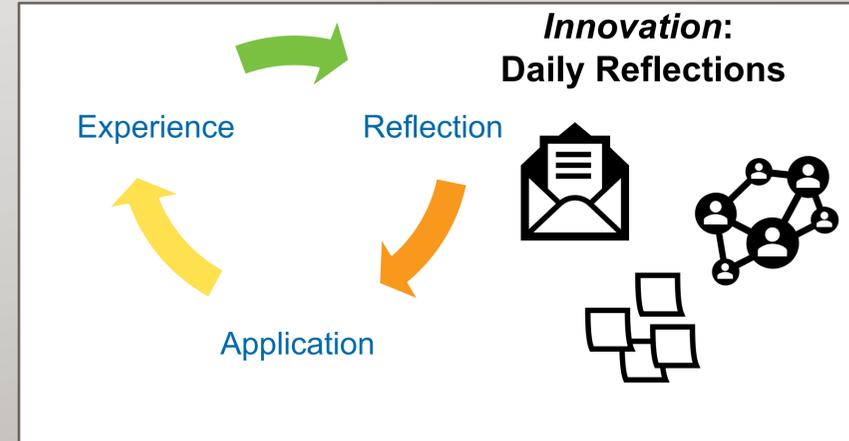
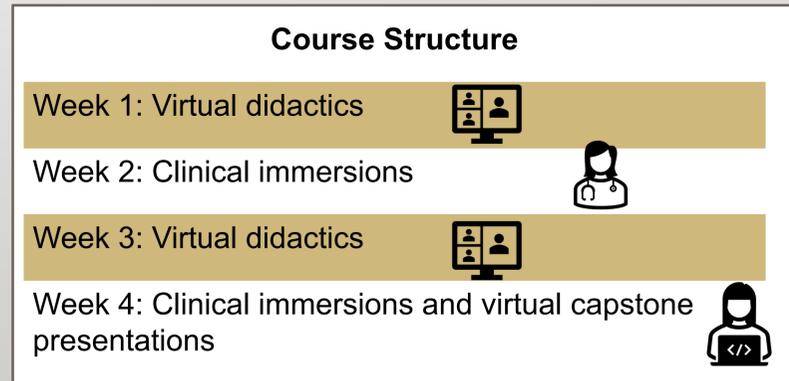
Background

- The **Advanced Sciences Curriculum (ASC)** has been created as part of the University of the new University of Colorado medical student “Trek” curriculum, with the intention of integrating basic science and clinical medicine, as well as inspiring advanced learners as they approach challenges in medicine.
- The cardiology ASC course, **Connections in Cardiology (CiC)**, has been conducted during the two primary surges of the COVID-19 pandemic. As a result, a virtual platform was utilized.
- Virtual learning platforms** have enabled continued classroom and small group education but **detract from the subtle exchanges** which prompt and facilitate further self-directed learning.

Innovation

A **daily reflective writing program** was implemented to enhance **learning relationships**, encourage **self-directed learning** exploration, and **improve course value** for both educators and students.

- At the conclusion of each day, learners submit daily reflective writing (at least 100 words) to course directors.
- Course directors respond within 12 hours with further discussion, and inclusion of both formative feedback and encouragement.



Excerpts from Student Reflections

The case today brought up some questions for me regarding people who inject drugs and **endocarditis**. . .I'm interested in learning more about **how addiction medicine gets involved** in these cases, and what happens when there is **less availability of addiction medicine involvement/support/resources**. Something else I think I'll explore is the intersection of **harm reduction** (particular with injection drug use) for these patients (is there data? Programs that implement harm reduction in the treatment of IE?). (S1)

I saw my first code today. It was unexpected, for everyone. It was a simple outpatient procedure – cardioversion for A fib. . . **I felt very helpless, unsure of myself in this scary and unexpected situation.** (S4)

I previously wrote about the difficulty that patients encounter with **complex HF medication regimens**. Another **barrier to optimal care** that I've noticed in some patients: the ability to spend time inpatient when it is needed. . .My initial reaction is to scoff and think, "*Just stay here for 2-3 days and then you won't have to come back to the hospital for this issue!*" But then I realized just how much of a hassle that being inpatient would be if I were in his shoes. . . **how can I just hit "pause" on my life for a couple of days?** (S5)

One of **my goals** while completing this course will be to **apply the topics that I learn about to my future career** field of obstetrics and gynecology. . .Although not common, the subspecialty of **Maternal Fetal Medicine** will often care for pregnant patients with various **congenital and acquired heart diseases**, including hypertrophic cardiomyopathy. . . (S2)

Dr. ***'s lecture on action potentials, ion channels and antiarrhythmics. . .was a **densely packed lecture but wildly educational** for me. . .The **concept of the excitation gap was a great way to show how some of the drugs worked.** . . (S6)

Today we have a **patient who arrested x2** with and LAD MI. . . [who] had **ECMO and impella placed** for severe biventricular cardiogenic shock. . . **This is complicating the discussion of him getting an LVAD/BiVAD or placement on the transplant list.** (S7)

My reflection is also a question. The pathophysiology of severe aortic stenosis and the medications that are contraindicated is really interesting. . .My question is: are these medications *always* contraindicated in AS?. . .(S5)

I was surprised to learn that the **average quality of life for patients with peripheral artery disease** is lower than patients with heart failure. . . If I try to **put myself in the patient's shoes**, I will feel more guilty if my leg pain limits my ability to play with my grandkids compared to dyspnea. . . **As a result, being limited by pain signals defeat.** . . (S3)

I find **transplant medicine so fascinating and at the intersections of a lot of my interests** (health equity, social determinants, ethics, ID/immunology, critical care). . . I think I'm always struck by how much goes into the process of getting listed as a transplant recipient. . . I think underlying some of the **tension and discomfort in all of this is the fact that we don't have a culture of collectivism in our society.** . . I'm definitely planning on **exploring this further in my capstone!** (S1)

I appreciated watching the **communication strategies** between doctors and patients. . .I thought it was awesome how comfortable the fellow was with **talking to the patient about gender identity**. . .It reminded me to **continue thinking of the "whole patient"** even while on a subspecialty service. (S4)

Today in MFM clinic we saw a **patient with a history of fetal heart block in her first pregnancy** that eventually led to development of fetal hydrops and fetal demise after delivery. In the post-partum period, the patient was found to have anti-Ro and anti-La antibodies, which were concerning for **Sjogren's Syndrome**. . .known to be at increased risk of developing fetal heart block. . . (S4)

Today I saw a **hemiarch repair for a patient with an aortic aneurysm**. . . It got me thinking about how often in cardiac specialties patients are probably not seeing you because they want to have their problem fixed but **because they need to have their problem fixed or they will more than likely become critically ill.** . . I imagine that denial from patients is powerful and that **patience, compassion, and great communications skills are paramount** in these situations. (S7)

Discussion & Future Directions

- The primary use of **virtual learning platforms** during the COVID-19 pandemic has contributed to awkward and stifled small group discussions, and a **disconnect between learners and teachers**. **Daily reflective writing offers a knowledge exchange and promotes discussion while simultaneously improving relationships between learners and faculty.** Overall, this intervention has created a **profound relationship between teachers and learners, led to joy and educational fulfilment, and reduced burnout.**
- We anticipate that this intervention will further **promote knowledge retention and foster continued intellectual curiosity**; this method exemplifies pillars of adult learning theory in tasking learners to **engage in deciding what they learn and practicing the application of new knowledge**. It has been a meaningful complement to learning in our course, and we hope to utilize this tool in the future, as our elective is expanded to a required course for third year medical students, as an integral part of the Alpine phase of the Trek curriculum.