

“MS4 Report”: A Student-led and Remote Model for Case-Based Learning In Preparation for Residency

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INTRODUCTION

- The arrival of COVID-19 within the United States prompted unprecedented changes in medical education due to the pause in medical student clinical rotations
- Medical students required new outlets to practice advanced clinical reasoning skills outside of traditional clinical settings
- While students are frequent attendees at resident case conferences such as “Morning Report,” there are few known initiatives which teach students to design and present case conferences themselves

LEARNING OBJECTIVES

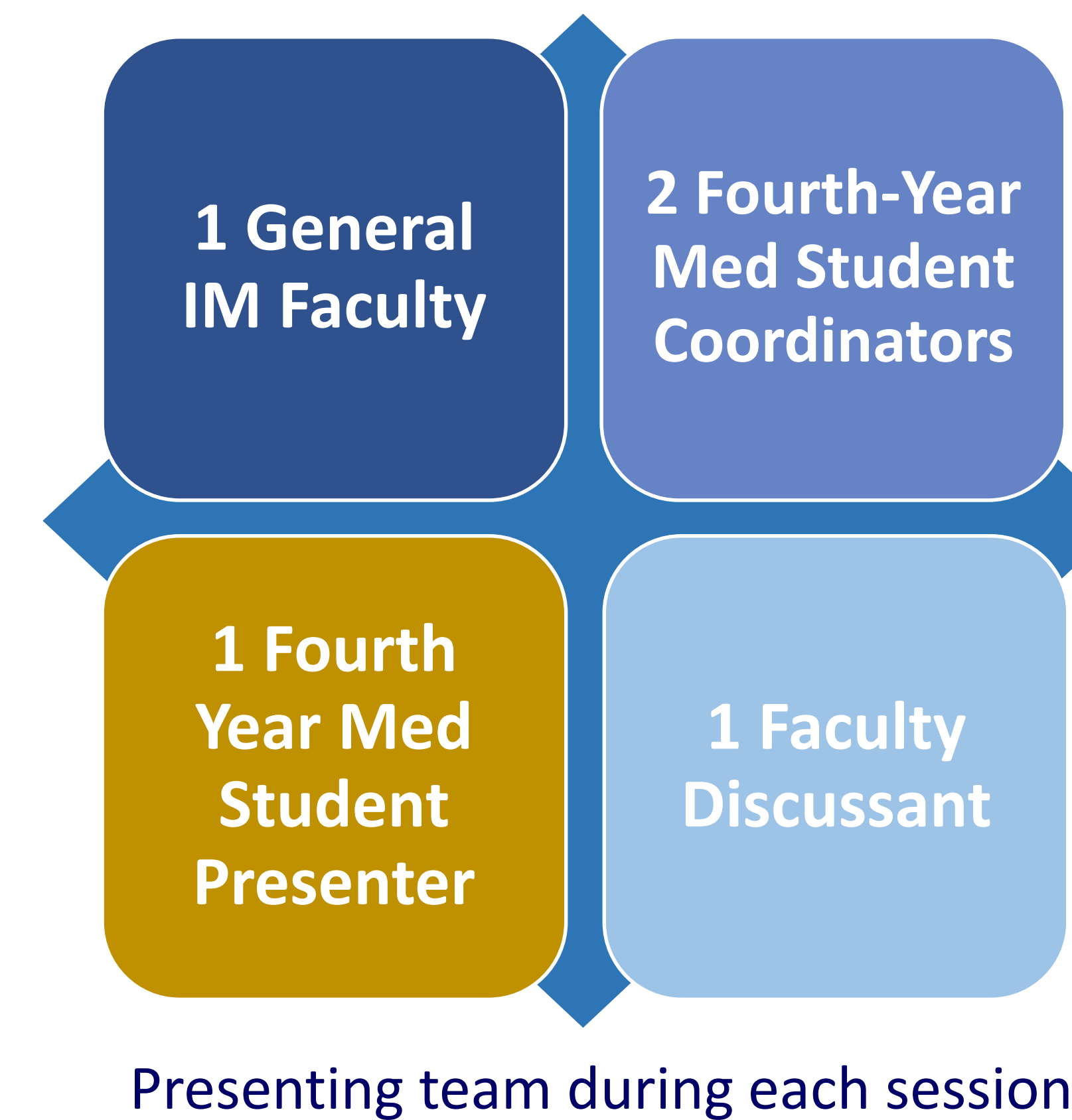
- Participants will gain comfort with forming a broad differential diagnosis for a given clinical presentation
- Participants will feel more engaged in their medical education
- Participants will gain comfort with contributing to a case discussion
- Presenters will gain comfort with preparing a case presentation
- Presenters will gain confidence leading a case-based discussion
- Presenters will gain confidence communicating learning objectives

EXAMPLE PRESENTATION



METHODOLOGY

- Fourth-year medical students volunteered to virtually present real clinical cases over 1 hour to a group of their peers and to guide clinical discussion and learning
- 1 general internal medicine faculty member mentored each student in presentation design to ensure effectiveness of delivery and teaching points
- 2 medical student leaders coordinated student presenter sign-ups and provided technical and logistical support
- 1 Invited faculty discussant per case provided expert input and clinical pearls throughout the presentation
- Educational quality measured by feedback survey upon series completion using a standard 1-5 Likert scale



RESULTS

- 7 presentations scheduled on a weekly basis from April to May 2020, delivered with Microsoft PowerPoint on the virtual platform Zoom
- Session topics included differential for dyspnea, anemia workup, liver disease, emergency medicine decision-making, neonatal resuscitation, and a morbidity and mortality discussion
- Attendance ranged from 2 to 11 attendees (mean 6.57), excluding student coordinators and presenters

Quality Measure (n=9 ^a)	Average agreement on a standard 1-5 Likert Scale, 5 indicating strongly agree (SD)
Increased comfort with forming a broad differential	4.2 (0.44)
Feel more engagement in medical education	4.4 (0.53)
Increased comfort contributing to a case discussion	4.3 (0.71)
Preference for the student-led format of MS4 Report over the resident-led format of other conferences	3.8 (0.83)
Interest in participating in a similar activity in student's intended specialty of practice	4.7 (0.5)
Enough variety among MS4 Report cases	4.3 (0.71)
ZOOM as an effective delivery platform	4.6 (0.53)
Presenters Only (n=4 ^b)	
Increased confidence in ability to prepare a case presentation	4.5 (0.58)
Increased confidence in ability to lead a case-based discussion	4.5 (0.58)
Increased comfort with clinical content presented	4.0 (0.82)

^aAverage number of MS4 reports attended 4.1 (2.3), ^{a,b} Student administrators excluded

DIFFERENTIAL?

ID	Pulm	CV	Rheum/AI	Renal
Viral PNA	ILD -Pneumoconioses -HS pneumonitis	Heart Failure (e.g. 2/2 ischemic cardiomyopathy or valvular dz)	SLE	Nephrotic Syndrome
Fungal PNA	Pulm malignancy	Pulm Embolism	Sarcoid	
TB	ARDS 2/2 inhalation injury or vaping	Myocarditis	Sm Vessel Vasculitis (GPA)	
Worsening PNA from resistant organisms	Pulm Trauma	MI	Anti-GBM Disease	
Abscess or Empyema				

Sample teaching slide from a student presentation

DISCUSSION

- The MS4 Report model may improve students' abilities to prepare and deliver a case conference presentation with faculty mentorship in preparation for residency
- Attendees collectively indicated increased comfort with forming a broad differential diagnosis, developing assessments and plans, increased engagement in their medical education, and increased comfort with contributing to a case discussion
- Limitations include small sample size, short duration of study, and selection bias, considering participation was voluntary
- Additional research may enlighten the role similar programs may play in a post-COVID medical education curriculum

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