# Patients, Populations, and Pandemics:
# An Innovative Virtual Undergraduate Medical Education Course

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## Abstract

**Background:** The COVID-19 pandemic has posed a unique challenge to undergraduate medical education. Medical schools postponed student participation in direct patient care in mid-March 2020, creating the need for rapidly-designed, virtual, and innovative learning experiences.

**Approach:** Utilizing Kern's six-step approach to curriculum development, faculty and medical student liaisons rapidly designed a six-week online and interactive course for clerkship-year students and above, launched on March 30th, 2020. "Patients, Populations, and Pandemics: Responding to COVID-19" emphasized honing higher level skills of Bloom's taxonomy, namely evaluating, synthesizing, and creating. Following weekly faculty-led lectures, student groups identified research questions, analyzed literature, presented data, critiqued peer presentations, and created infographics for the public.

**Evaluation:** We aimed to maintain quality and interactivity despite challenges posed by our timeframe, the evolving COVID-19 literature, and the virtual setting. We recruited frontline faculty and designed the course to facilitate discussion, thereby promoting real-time exploration of public health and clinical challenges. Encouraging student participation, we incorporated group synthesis sessions and instructed use of video, hand-raising, and chat features. In a survey administered at the end of the first week, 85.7% (18/21) of students strongly agreed or agreed that small group presentations successfully enabled synthesis of new and emerging data. Among the 29 enrolled students, 82.8% (24/29) of students completed final course evaluations, with 87.5% (21/24) agreeing that the learning activities "usually" or "always" helped meet the learning objectives identified at the beginning of the course. The course was rated as "excellent" or "very good" by 83.3% (20/24) of students.

**Reflection:** Lessons learned include providing students with increased direction on critically reviewing peer presentations and imparting guidance on best practices for data synthesis. This course model will be disseminated throughout our institution and beyond to address challenges in remote learning and to serve as a paradigm during future health crises.

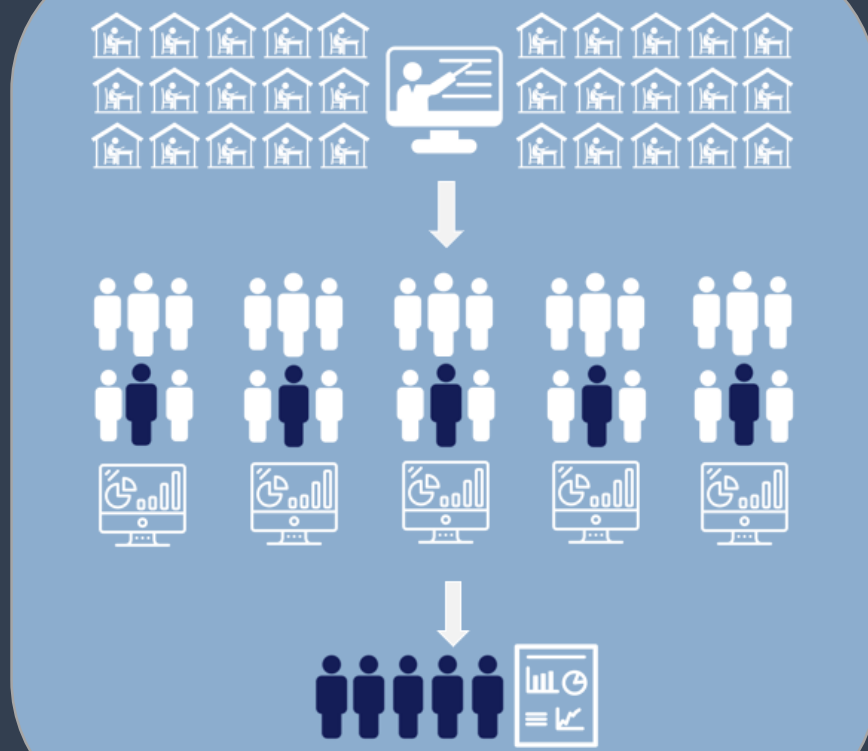
## Introduction

Postponement in medical student clerkships due to COVID-19

Limited pre-existing options for virtual learning at home

Need for quickly-developed course maximizing student input

Rigorous **course quality** and **student engagement** is possible in real-time, rapidly-designed **virtual learning**



## Virtual Learning Recommendations

### Technological Features
*Real-time video*
*Hand-raising feature*
*Chat function*

### Frontline Faculty
*Multidisciplinary*
*Diverse perspectives*
*Up-to-date clinical information*

### Student Participation
*Lecture Q&A*
*Small group sessions*
*Team leaders*

## Conclusions

This rapid, real-time remote course sustained learning opportunities for students and facilitated pandemic learning

Students endorsed the course's collaborative nature and interaction with frontline faculty