



Next Steps in the Evaluation of the MCAT Exam

December 18, 2020



How to use the chat box today

During the presentation, we will pause frequently for comments or questions.

Type COMMENT in the chat box to signal you have something to say.

MCAT staff will monitor the chat to make sure questions are answered.

Agenda

- Hear reflections from the new MVC members (10 minutes)
- Reach consensus on principles for prioritizing remaining studies (15 minutes)
- Working groups provide updates about their discussions and ask for MVC input (60 minutes – 20 minutes each)
 - Outcomes
 - Academic prep
 - Admissions
- Next steps (5 minutes)

Reflections from new MVC members

Prioritizing the final MVC studies

Timeline of the MVC's remaining tenure

1. December 2020: Webinar series
2. January 2021 through June 2022:
 - Monthly WG calls
 - Quarterly MVC calls
3. September 2022: Final MVC meeting (in-person)
4. October 2022-2023: Publish final manuscripts

We need to decide which of these possible studies are the highest priorities

Analyses of existing data	New data collections (e.g., admissions, PMQ surveys)	Needs for resources	Future research ideas beyond MVC
<p>Relative contributions of educational disadvantages vs. test prep. Does test prep help disadvantaged students more?</p> <p>Positive (or negative) deviant analysis: students that perform better (or worse) than their MCAT scores predict</p> <p>School cluster analysis: - How missions/foci on social/educational outcomes relate to whether schools accept applicants with lower scores - Schools with similar missions and similarly accept applicants with lower scores but have different outcomes - Compare schools with different curricular approaches/learning environments - HBCUs vs. other</p> <p>Characteristics of high MCAT performing URM/low SES students, particularly those from low-resourced schools (anti-deficit model)</p> <p>High- vs. low- impact test prep strategies</p> <p>Examine PMQ open-ended responses from students from disadvantaged backgrounds to gain insight into their strategies and challenges</p> <p>Fit between school mission and applicant intention/motivation (characteristics of applicants applying to schools with similar vs. different missions)</p> <p>Predictive validity for MCAT section scores: - PSIB and CARS predicting Step 2 CS failure rate - Combining the two natural science sections</p> <p>Predictive validity of academic metrics: - Separating BCPM, AO, post-bac/graduate GPA's - Research hours - Hours of science coursework</p> <ol style="list-style-type: none"> Is there data on how students from different SES classes perform on the MCAT? a. By SES and gender and b. by SES and race/ethnicity? c. By location (urban/rural) Do medical students with similar MCATs perform same or different based on SES? a. Based on race/ethnicity and b. based on gender? Do students with similar MCATs perform similar across the validity schools? a. Across the nation Can we identify predictors why students with similar MCATs perform differently? <p>Are we able to look at BCPM load over years of undergraduate and that relationship to MCAT and medical school performance?</p> <p>Within our Validity Group Data, I think it would be extremely helpful to publish data that shows the performance of students who are accepted to medical school from the mid to lower ranges of MCAT scores. There are differences among our validity schools regarding the range of MCAT scores we accept; however, my hypothesis is that we are all graduating well trained physicians who are meeting UME and GME milestones. I think this information would help Admissions Committees feel more comfortable about accepting students from the lower ranges of MCAT scores.</p> <p>At validity schools, do MCAT scores show direct effects on preclerkship performance but indirect effects on Step 1 and later outcomes (school measures of performance become stronger predictors)</p>	<p>Types of support available for students with MCAT scores in the middle 3rd</p> <p>Attitudes of admissions committees regarding acceptability of "+1" strategy.</p> <p>Drivers of high MCAT average/barriers of accepting students with lower MCAT scores</p> <p>Measure of fixed vs. growth mindset in test prep (PMQ)</p> <p>Challenges faced by disadvantaged students in test prep: anxiety, defensiveness, feeling slapped back, etc. (PMQ)</p> <p>Measure of motivation of examinees (PMQ)</p> <p>Alignment/coordination among admissions, student affairs, faculty, etc. to construct a class</p> <p>Impact of MCAT threshold (P/F) on admissions committee decision making: - National cutoff - Local school cutoff - Peer group cutoff - Cutoff based on z-score/SD</p> <p>Impacts of COVID disruptions on admissions: - Changes in use of MCAT scores - Changes in admissions outcomes - Schools that are test optional</p> <p>Admissions decision-making process: - Weight of MCAT - Reasoning/justification for accepting students with lower scores</p> <p>National survey of admissions committee members, not just the directors/deans</p> <p>*** I want to know from deans, admissions committee members, office for UME faculty. Ask what the drivers are.</p> <p>Instead of guessing, we just need to ask residency directors, are they planning using MCAT scores now that STEP will be P/F? I am sure this answer will drive some schools as to who they admit.</p> <p><- YES! We need to survey actually committee members as to the reasons why a certain MCAT score is unacceptable and what that score is. What is this based on?</p> <p>Is there a way yo see average MCAT scores as it relates to each school's mission?</p>	<p>Guidance (one-page outline) on how to use section scores</p> <p>Training on holistic review/decision-making: case scenarios/best practices from similar schools that have successful outcomes</p> <p>Information on students who do not succeed to set realistic expectations about how hard medical school is</p> <p>Targeted test prep resources to help disadvantaged students: - Test-taking strategies - Different way of thinking (outside of the box, higher levels of Bloom's Taxonomy) - Confidence - Growth mindset - Partner with aspiring docs, HSPEP, and others</p> <p>There are other industry and non-profit groups that are interested in some of the diversity issues that we discussed today--is there a way to reach out and bring new partners to this work (whether getting research ideas or generating new resources?)</p> <p>Work on developing resources for holistic prep for MCAT and application - i.e. helping pre-health advisors with starting MCAT prep early in a student's career and associating to different aspects of preparation - experiences, volunteering, etc.</p> <p>Narratives/success stories for students: - Admitted with modest scores - Admitted with different section scores</p> <p>Targeted outreach: - Publicize "find an advisor" - Reaching individuals interacting with students - Digital strategies (e.g., podcasts) to increase impact of test prep resources</p> <p>Local school report/validity data analysis</p> <p>Validity findings for schools that are similar (in mission, class make-up, etc.)</p>	<p>Impacts of Step 1 P/F change on validity: - Change in curriculum - Change in preparation - Change in test-taking approach/motivation</p> <p>Predictive validity of MCAT against shelf exams - Role of clinical science shelf exams in preparing for Step 2 CS given Step 1 going P/F</p> <p>Linked to green sticky note under "new data collection": Pilot program with a handful of schools willing to accept MCAT score reports as "P/F" only and follow their students longitudinally to compare their performance vice schools that receive traditional score reports</p> <p>Outcomes from those schools who waived MCATs for accepted students (2021 entering class): - Progression to M2 - Performance on step 1 - 4 year graduation rates - Match rates and specialties</p> <p>What other factors did these schools use in lieu of MCAT in making their admissions decisions?</p> <p>I continue to be interested in the idea of furthering research on how in preparing for the MCAT, students are preparing for medical school. Can we be student PMQ responses about how they studied to how they performed on the MCAT, to further support the idea that those studying behaviors listed do align with MCAT performance and therefore medical school performance. I think it would be compelling for students to see that students who for example complete practice questions as they go along, focus on studying weaker areas, take practice exams, etc. do get higher scores and go on to do well in medical school. It could also demonstrate the value of the MCAT beyond an admissions tool and as preparation for medical school.</p> <p>High school data as it relates to medical school admissions and success</p> <p>How will Step 1 P/F impact how MCAT scores are used. Will programs ask for MCAT score to use it as a surrogate. This would disadvantage students who have lower percentile MCAT.</p> <p>Longitudinal study of MCAT validity - Specialty choice/selection - Knowledge/care</p> <p>Tailor time use study in test prep--using wearable gear/time tracking device to study time spent studying, working, sleeping, commuting, in class, with family obligations, etc.</p> <p>I continue to like the idea of extending our committee's charter to look at distal outcomes--what can the MCAT tell us, if anything, about patient outcomes?</p>

These questions ask about the use of MCAT scores to promote excellence and diversity

- What information/resources might help admissions officers achieve more equitable outcomes (e.g., similar acceptance rates by group) when the inputs like MCAT scores and uGPAs show group differences?
- There are average group differences in MCAT scores, and yet predictive validity research shows that MCAT scores predict medical student performance comparably for those same groups. **How can we use MCAT scores and other application data to help you think about the availability of any needed supports?**
- How can we better address holistically the preparation of premedical students, especially those from minority and disadvantaged backgrounds, to give them the effective foundational knowledge, reasoning, study skills, and confidence to do well on the MCAT exam and be ready for medical school?

Working group report out: Outcomes

Working group on predicting medical student performance

Member	Affiliation
Kevin Busche	University of Calgary, Cumming School of Medicine
Martha Elks	Morehouse School of Medicine
Josh Hanson	University of Texas Health San Antonio, Long School of Medicine
Loretta Jackson-Williams	University of Mississippi Medical Center
Robert A. Liotta	F. Edward Hébert School of Medicine, Uniformed Services University
Chad Miller	Saint Louis University School of Medicine
Cindy Morris	Tulane University School of Medicine
Barton Thiessen	Faculty of Medicine, Memorial University of Newfoundland

Report out to the MVC

- ❑ Objectives
- ❑ Discussion summary
- ❑ Feedback desired from the MVC about future research ideas
- ❑ Next steps

Objectives

- ❑ Evaluate the validity of MCAT scores in predicting medical student performance
- ❑ Develop resources to support appropriate use of MCAT scores in admissions decision making

Discussion summary

- ❑ Reviewed the draft outline of the next validity manuscript
- ❑ Discussed future research topics and questions
- ❑ Identified next steps

Summary of future research topics



<p>Validity of premedical preparation in predicting medical student outcomes</p> <ul style="list-style-type: none"> • Resources of undergraduate institutions • BCPM course load/GPA • AO GPA • Post-Bac/Graduate GPA • Research hours • High school data 	<p>Validity in predicting remaining outcomes in medical school</p> <ul style="list-style-type: none"> • Graduation on time and Step 2 CS <p>Variation of validity by school and student characteristics</p> <ul style="list-style-type: none"> • Missions, type (HBCU vs other), curriculum, and student support • Student background characteristics <p>The direct and indirect effect of MCAT in the prediction of medical student outcomes</p> <p>Validity of section scores</p> <ul style="list-style-type: none"> • Performance of matriculants with different section scores <p>Positive (or negative) deviance analysis</p> <ul style="list-style-type: none"> • Students that perform better (or worse) than their MCAT scores predict <p>Narrative and successful stories about the performance of matriculants with mid- to lower ranges of MCAT scores and/or from disadvantaged backgrounds</p> <p>Factors contributing to differences in performance for students with similar MCAT</p>	<p>Additional medical school outcomes</p> <ul style="list-style-type: none"> • E.g., Shelf exams, early vs. late attrition <p>Distal performance outcomes</p> <ul style="list-style-type: none"> • E.g., residency, specialty choice, patient outcomes
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Examples of research questions for future research

- ❑ How well do MCAT scores predict the likelihood to graduate on time?
- ❑ How well do section scores predict medical student outcomes?
- ❑ How does the validity of MCAT scores vary by school characteristics such as missions, curriculum, and student support?
- ❑ How does the validity of MCAT scores vary by student background characteristics?
- ❑ How well do students with discrepant undergraduate GPAs and MCAT scores do in school?
- ❑ Does the change in Step 1 score report have any impact on the validity of MCAT scores?

Feedback desired from the MVC about future research ideas

What resources/services related to validity data (local, peer schools, or national) will be useful for medical schools?



Next steps

- ❑ Identify the priorities of future research topics
- ❑ Draft the validity manuscript

Working group report out: Academic prep

Working group on diversity and academic preparation

Member	Affiliation
Michelle Albert	UCSF School of Medicine
Rhona Beaton	Union College
Julie Chanatry	Colgate University
Daniel Clinchot	The Ohio State University College of Medicine
Liesel Copeland	Rutgers Robert Wood Johnson Medical School
Francie Cuffney	Meredith College
Stephanie McClure	Meharry Medical College
Kadian McIntosh	University of Arizona College of Medicine - Tucson
Aubrie Swan Sein	Columbia University Vagelos College of Physicians and Surgeons
Doug Taylor	East Tennessee State University Quillen College of Medicine

Report to the MVC

- Objectives
- Discussion summary
- Feedback desired from the MVC
- Next steps

Objectives

- ❑ Understand how premedical students prepare for the MCAT exam and challenges they face
- ❑ Develop information and resources to help premedical students, especially those from educationally and socioeconomically disadvantaged backgrounds, prepare for the exam

Discussion summary

- ❑ Re-examined test preparation based on 2020 PMQ data
- ❑ Found the same pattern of group differences in test preparation and challenges between examinees who attended undergraduate institutions with fewer vs more resources
- ❑ Identified areas for future research
- ❑ Discussed next steps

Summary of future research topics

Gather New Data

- Growth vs. fixed mindset
- Motivation
- Confidence

Analyze Existing Data

- Explore aspects of preparation at a more macro level
- Identify high- vs low-impact preparation strategies
- Assess the importance and responsiveness to intervention of preparation strategies
- Understand relationships between the use of test preparation strategies and performance on the MCAT exam and whether there is any group differences in these relationships
- Understand group differences in preparation time and confidence and the association of MCAT performance with preparation time and confidence
- Examine open-ended questions to understand strategies used and challenges, especially challenges for examinees from disadvantaged backgrounds in socio-psychological and motivational areas
- Examine characteristics of high MCAT performing URiM/low SES examinees, particularly those from undergraduate institutions with fewer resource
- Examine differences in test preparation between those who applied vs did not apply to MD schools

Identify the Need for New Resources

- Resources for pre-health advisors to help their advisees prepare early and holistically
- Partnership with other organizations to identify resources for examinees and advisors
- Resources to help students develop growth mindset
- Resources to help examinees find mentors to help them understand how to develop/follow a study plan and use prep materials
- Resources to help engage premedical students' interests in medicine and start preparation as early as possible

Feedback desired from the MVC about future research ideas

1. We are interested in studying students' mindset and other socio-psychological aspects such as confidence as a way to looking for points of leverage to help examinees from educationally and socioeconomically disadvantaged backgrounds. What insights do you have to inform this research?
2. How can we leverage the research to convey that preparing for the MCAT exam is really part of the process of preparing for medical school?



Next steps

- ❑ Identify priorities of future research
- ❑ Finish additional analysis on preparation strategies and challenges
- ❑ Develop key insights based on the quantitative and qualitative results
- ❑ Develop a storyline of the next publication
- ❑ Determine roles and responsibilities for the next publication

Working group report out: Admissions

Working group on admissions decision making

Member	Affiliation
Leila Amiri	University of Illinois College of Medicine
Ngozi Anachebe	Morehouse School of Medicine
Hallen Chung	UCSF School of Medicine
Demondes Haynes	University of Mississippi Medical Center
Kristen Goodell	Boston University School of Medicine
Remo Panaccione	University of Calgary Cumming School of Medicine
Aaron Saguil	F. Edward Hébert School of Medicine, Uniformed Services University
Carol Terregino	Rutgers Robert Wood Johnson Medical School
Mike Woodson	Tulane University School of Medicine

Agenda

Objectives

Discussion summary

Feedback desired from the MVC

Next steps

Our next priority is studying the use of MCAT scores in admissions

Why survey? Why now?

Medical schools are looking for new ways to serve their mission/goals through admissions

The current MCAT exam has been in use for 6 years, and schools know more about the score ranges they can accept for applicants who do and do not need academic support

Some schools have extended holistic practices into student affairs, and may have promising practices for supporting the students they admit with more modest academic credentials

Several forces in the environment are prompting schools to think about the value of MCAT in future admissions cycle

- Step 1 going P/F
- COVID-19
- Ongoing conversation on racial injustice

At admissions community meetings and COA meetings, admissions officers are asking for new types of resources, but more information is needed from the community to design them

At the March 2020 MVC meeting, you also identified topics of interest for a new survey

At the validity schools, the “minimum” MCAT score varies widely so a survey would help us understand the variability.

What's the lowest MCAT score your school can admit WITHOUT academic support?



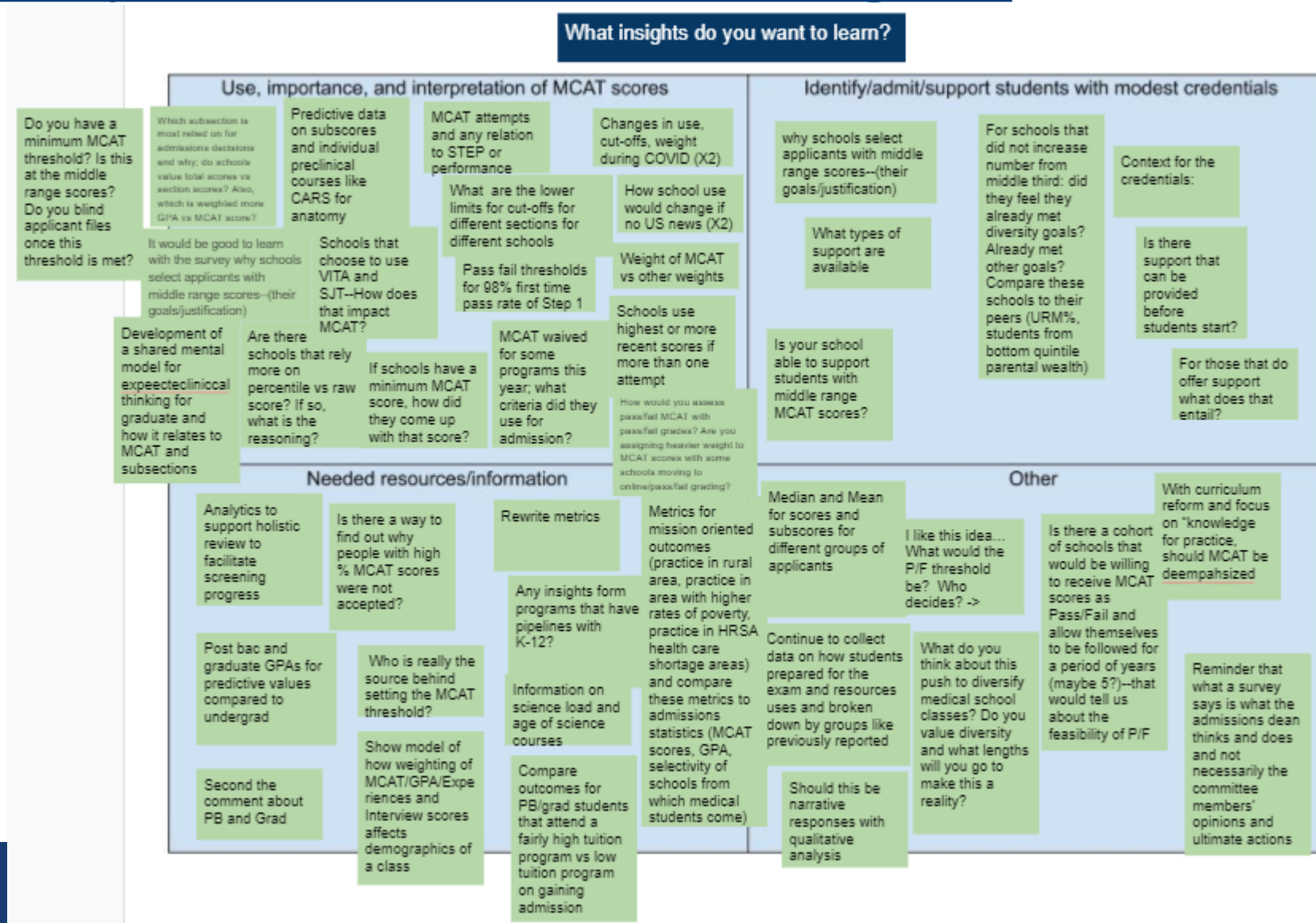
Summary of the Work Group Discussion

We started with the three broad survey topics from the March MVC discussion

1. Use and interpretation of MCAT scores and their importance at different stages of admissions
2. Considering, admitting, and supporting those with modest premedical academic credentials
3. Data, resources, and information schools need from the AAMC



Working Group Activity: Brainstorm insights you want to learn from your admissions colleagues



CONTEXT

COVID Impacts/changes

Step 1 changing to P/F

Racial inequities



School mission/diversity goals

- Reasoning/justifications for accepting students with mid-ranged scores
- Metrics for mission-oriented outcomes
- Stakeholders/decision-makers

Drivers (for high scores)/barriers to diversity goals

- E.g., U.S. News ranking
- Influence from various stake holders (e.g., alumni)

Use of MCAT scores in admissions

- Weight and threshold/cutoff of scores (and implementation/process)
- Test-optional considerations (what other metrics)
- Score reporting (pass/fail, high pass/pass/fail, categorical above a threshold and continuous below, etc.)
 - Decision process (who decides and how)
- Different processes or score targets for different groups (e.g., by demographic) or programs
- Section scores and score profiles
- BCPM, post-bac, and Master's GPAs

School support for students with mid-ranged scores

- Ability to support (level of resources available for support)
- What types of support and what does it entail
- Pre-matriculation support

Collaboration/coordination with other departments

- Student affairs, faculty, etc.
- Structure/process



NEEDS for DATA, INFORMATION, & RESOURCES

Data for peer comparisons (for "like" schools)

Research on P/F and test-optional practices

Local admissions/validity data analysis (for own use)

Data on student preparation by demographics

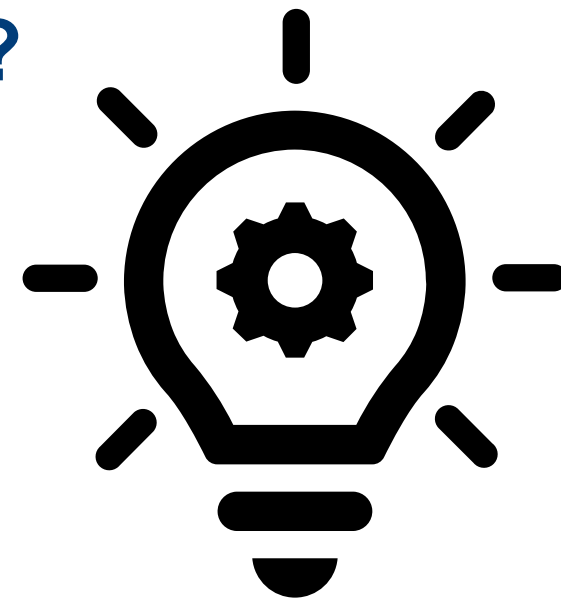
Feedback from the MVC

What questions do you want to ask the MVC?

How can we learn about the differences in the views of the value/use of the MCAT by the many stakeholders/decision-makers involved in the admissions process?

- Who should the survey respondents be (in addition to admissions deans and directors)?
- What information would admissions officers need to navigate these differences?

How can we ensure the survey will be of value to the community?



Next Steps

The tentative goal is to publish select findings in the 2022 MCAT admissions guide and also in other subsequent resources and a publication

This timeline is ambitious but feasible

Task	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Draft survey	■	■							
Try out survey		■	■						
Administer survey				■					
Analyze results					■				
2022 MCAT Guide for admissions						■			
Web-based resources						■	■	■	
Draft manuscript							■	■	■



The MVC also proposed other questions in March, which MCAT researchers have begun to explore

How do other measures of premedical preparation (e.g., BCPM grades, completion of post-bac programs) and educational opportunity (e.g., resources of undergraduate institution) relate to likelihood of acceptance and success in medical school?

How do different section score profiles relate to students' performance in medical school

How has the use MCAT scores changed (analysis of existing data)

- Old vs. new MCATs; pre-COVID and during COVID

Disseminate “admissions in COVID” information to the wider community

Study schools that went test-optional this year

- Applicants admitted without MCAT scores
- Outcomes for these schools/students

Next Steps

Next steps

1. Working groups convene in January
 - Develop work plans and timelines
2. Plan for March MVC webinar
 - Topic: Outcomes (TBD)
 - Expect a poll from MCAT staff
3. Future MVC webinars
 - June: Academic prep (TBD)
 - September: Admissions (TBD)

Questions





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