What's My Dose?

Designing an interprofessional telehealth simulation activity to build clinical and teamwork skills

Heartland Interprofessional Education Conference 2023
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No actual or potential conflicts of interest to disclose in relation to this presentation.

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Background

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Telehealth- Interprofessional Communication

- Expansion
  - Medicare expansion 63-fold 2019 to 2020
  - Medicare claims 0.1% (2019) to 5% (2021)
- Rural Provider
  & Pharmacy Shortages
- Telehealth = Spectrum of activities
- Communication Skills & Scheduling

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Interprofessional

Provide an opportunity for professions to collaborate virtually using telehealth

Provide a realistic practice encounter for physician assistant and pharmacy students

Provide an opportunity to utilize knowledge in their respective professions to solve a patient problem

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Methods

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Participants

Physician Assistant Students – 62
- First year

Pharmacy Students – 57
- Third year

Facilitators –
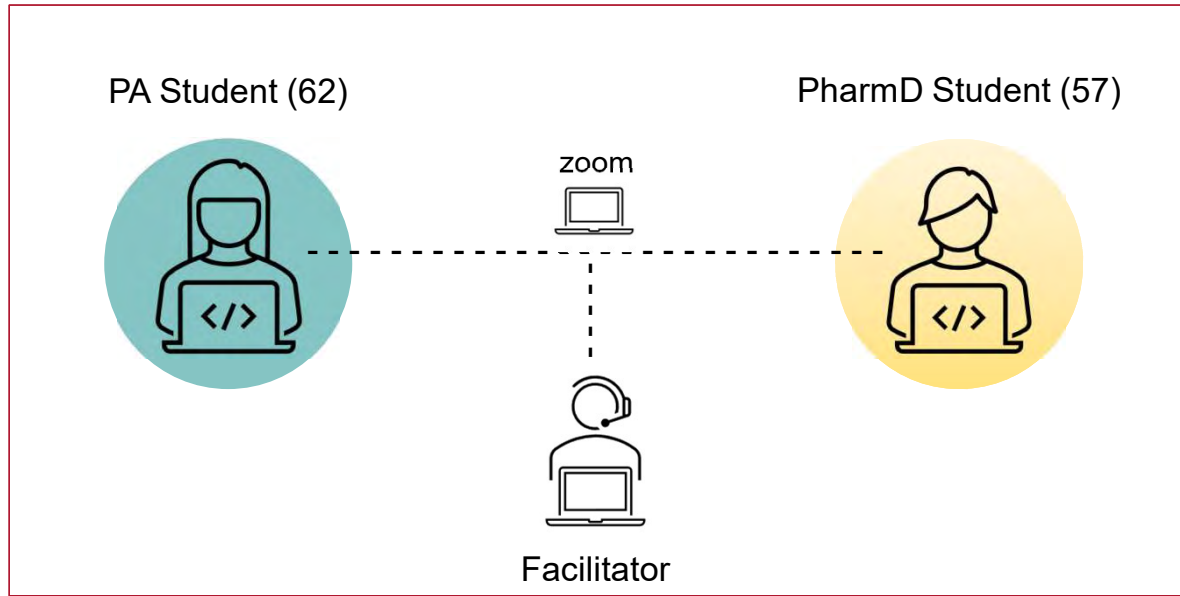- Medical Providers & Faculty (COP, PA, COM)

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Schedule

- 15-minute interactions
- 6 interaction rooms
- 10 sessions
- 3-hours to complete

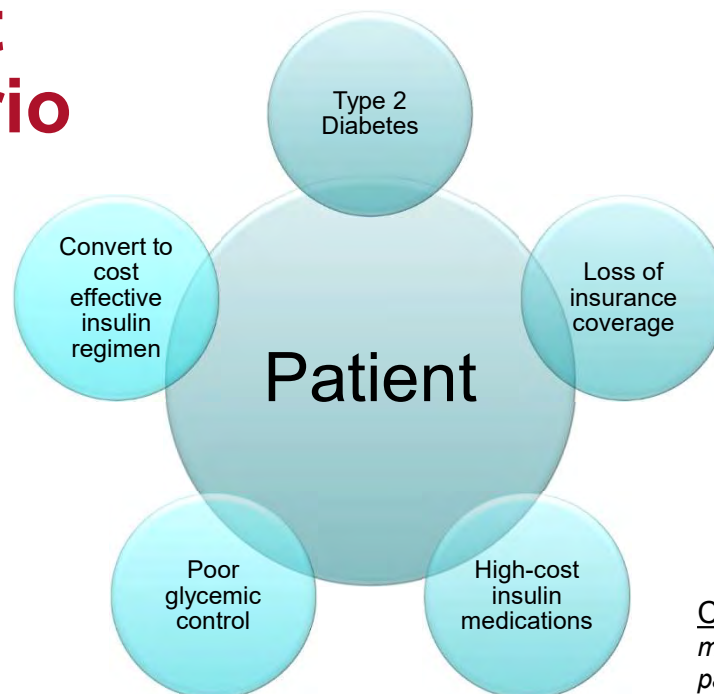| Session	Start Time	Zoom Room	PA-1 Student	PharmD Student	Facilitator	Zoom
1	1:00 PM	A	PA Student 1	Pharmacy Student 1	Facilitator A	Zoom A
		B	PA Student 2	Pharmacy Student 2	Facilitator B	Zoom B
		C	PA Student 3	Pharmacy Student 3	Facilitator C	Zoom C
		D	PA Student 4	Pharmacy Student 4	Facilitator D	Zoom D
		E	PA Student 5	Pharmacy Student 5	Facilitator E	Zoom E
		F	PA Student 6	Pharmacy Student 6	Facilitator F	Zoom F
2	1:15 PM	A	PA Student 7	Pharmacy Student 7	Facilitator A	Zoom A
		B	PA Student 8	Pharmacy Student 8	Facilitator B	Zoom B
		C	PA Student 9	Pharmacy Student 9	Facilitator C	Zoom C
		D	PA Student 10	Pharmacy Student 10	Facilitator D	Zoom D
		E	PA Student 11	Pharmacy Student 11	Facilitator E	Zoom E
		F	PA Student 12	Pharmacy Student 12	Facilitator F	Zoom F
3	1:30 PM	A	PA Student 13	Pharmacy Student 13	Facilitator A	Zoom A
		B	PA Student 14	Pharmacy Student 14	Facilitator B	Zoom B
		C	PA Student 15	Pharmacy Student 15	Facilitator C	Zoom C
		D	PA Student 16	Pharmacy Student 16	Facilitator D	Zoom D
		E	PA Student 17	Pharmacy Student 17	Facilitator E	Zoom E
		F	PA Student 18	Pharmacy Student 18	Facilitator F	Zoom F

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Telehealth Connection

PA Student (62)

PharmD Student (57)

zoom

Facilitator

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Patient Scenario

Type 2 Diabetes

Convert to cost effective insulin regimen

Loss of insurance coverage

Patient

Poor glycemic control

High-cost insulin medications

Challenge: *could not use manufacturer coupons or patient assistant programs*

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Collaboration

Communication skills

- SBAR, Teach-Back
- Synchronous audio/visual discussion and problem solving
  - Utilizing the knowledge of each profession to care for a patient
- Recognizing technological limitations of telehealth
  - Can not talk over someone
  - Make sure the mic is on
  - What is in your background?

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Data Gathering

Pre and Post Survey

- 10 questions
- Likert scale (1 - 5)
  - strongly disagree to strongly agree
- Understanding and applicability of 3 IPEC core competencies
  - 5 sub-competencies
- Confidence in applying skills
- Perceived benefit for IP interactions

Narrative Responses

- 4 questions
- Valuable aspects of sim
- Areas for improvement
- Document treatment plan

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Results

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Quantitative Results

	Time	N	Mean	SD	t	df	Two-Sided p	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
										Lower	Upper
INTERPROFESSIONAL COMMUNICATION											
I am able to choose communication tools and techniques that facilitate effective team interactions.	Pre	119	4.18	0.531	-5.863	224.075	<.001	-0.407	0.069	-0.544	-0.27
	Post	108	4.58	0.514							
TEAMS & TEAMWORK											
I am able to engage other health professionals in shared problem-solving appropriate to the specific care situation.	Pre	119	4.27	0.516	-4.454	222.929	<.001	-0.305	0.069	-0.44	-0.17
	Post	108	4.57	0.515							
I am able to engage other health professionals to constructively manage disagreements about patient care.	Pre	119	4.02	0.651	-5.464	224.076	<.001	-0.437	0.08	-0.594	-0.279
	Post	108	4.45	0.553							
ROLES & RESPONSIBILITIES											
I am able to understand the responsibilities and expertise of other health professions.	Pre	119	4.26	0.603	-4.352	224.125	<.001	-0.323	0.074	-0.469	-0.177
	Post	108	4.58	0.514							
My role within an interprofessional team is clearly defined	Pre	119	4.07	0.621	-4.155	224.824	<.001	-0.331	0.08	-0.488	-0.174
	Post	108	4.40	0.579							

*Equal variances not assumed
The non-parametric Mann-Whitney U test on the ordered categories also demonstrated significant improvement from pre to post on all of the questions.

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Quantitative Results

	Time	N	Mean	SD	t	df	Two-Sided p	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
										Lower	Upper
APPRECIATION OF OTHER DISCIPLINES											
Working with students from different disciplines enhances my education	Pre	119	4.44	0.577	-3.578	222.136	<.001	-0.248	0.069	-0.385	-0.111
	Post	108	4.69	0.467							
INTERPROFESSIONAL PATIENT-CENTERED CARE											
Patient-centered care is improved when delivered by an interprofessional team	Pre	119	4.58	0.512	-2.336	224.999	0.02	-0.152	0.065	-0.28	-0.024
	Post	108	4.73	0.466							
CONFIDENCE IN ABILITIES											
I am confident in my ability to dose insulin medications to a patient	Pre	119	3.39	1.009	-5.675	217.679	<.001	-0.669	0.118	-0.901	-0.437
	Post	108	4.06	0.759							
I am confident in in my ability to make dosing conversions in insulin therapy	Pre	119	3.17	1.076	-5.573	223.379	<.001	-0.73	0.131	-0.988	-0.472
	Post	108	3.90	0.896							
I am confident in treating an uncontrolled diabetic patient with insulin	Pre	119	3.45	0.918	-6.492	219.432	<.001	-0.703	0.108	-0.916	-0.489
	Post	108	4.15	0.708							

*Equal variances not assumed
The non-parametric Mann-Whitney U test on the ordered categories also demonstrated significant improvement from pre to post on all of the questions.

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Significant Improvement in Interprofessional Competencies

Questions relating to three interprofessional competencies demonstrated significant improvement: teams and teamwork (p<0.001), roles and responsibilities (p<0.001), interprofessional communication (p<0.001).
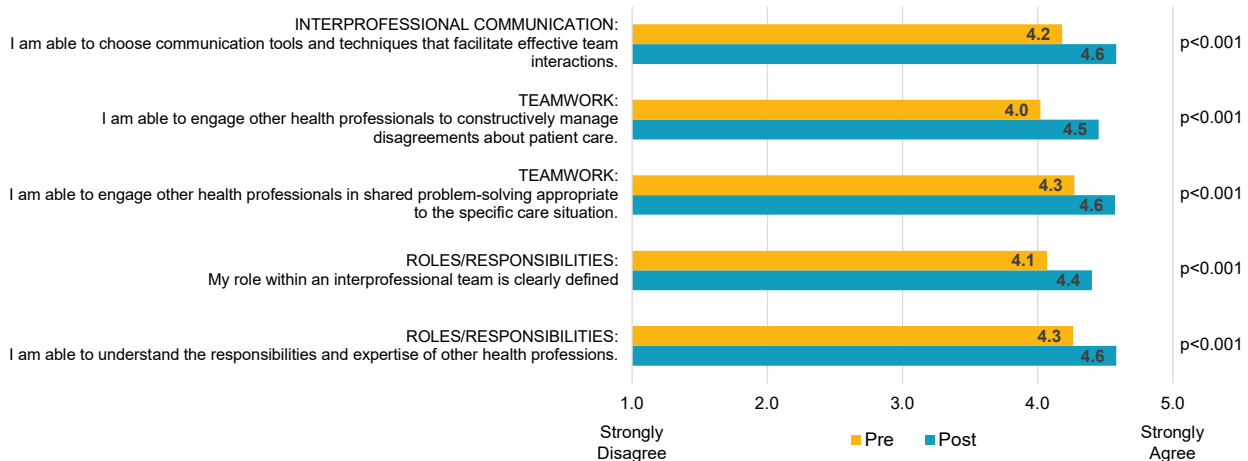

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Significant Improvement in Student Confidence / Abilities

Questions relating to student confidence demonstrated significant improvement in students' reported confidence from pre- to post-responses: the ability to dose insulin medications to a patient ($p<0.001$), ability to make dosing conversions in insulin therapy ($p<0.001$) and treating an uncontrolled diabetic patient with insulin ($p<0.001$).
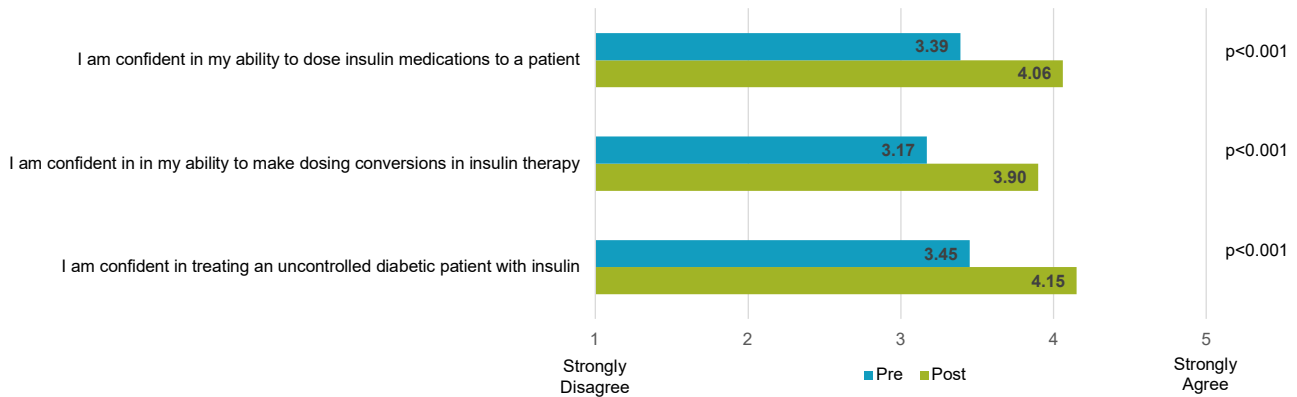
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Qualitative Responses
What Students Found Most Valuable

1. **Interprofessional Collaboration**
   - Enjoyed working with students from other health professions
   - Valued collaboration with other professionals to develop treatment plans
   - Appreciated different perspectives and insights from other disciplines
   - Recognized the importance of teamwork and communication in patient care

2. **Communication and Information Exchange**
   - Found it valuable to communicate and exchange information with students from other programs
   - Highlighted the benefits of discussing patient cases and bouncing ideas off each other
   - Practiced effective communication skills and patient-centered conversations
   - Appreciated the opportunity to present and discuss patients with other providers

3. **Telehealth Experience**
   - Valued the exposure to telehealth and its relevance in healthcare practice
   - Recognized the importance of adapting to telehealth settings and gaining experience in remote patient care

4. **Learning from Other Professions**
   - Found it helpful to learn about other professions' expertise and knowledge
   - Appreciated gaining insights into medications, treatments, and disease management from different perspectives
   - Recognized the value of interdisciplinary interactions in improving patient care
   - Appreciated the chance to practice telehealth skills and interactions

5. **Real-World Experience and Professional Growth**
   - Felt that the experience mirrored real-life scenarios and provided practical learning opportunities
   - Appreciated the chance to collaborate with other professions in a low-stakes environment
   - Identified areas for improvement and recognized the value of feedback from facilitators and other students
   - Increased confidence in working with other healthcare professionals in future practice

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Qualitative Responses

What Students Suggested for Improvement

1. **Time Constraints**
   - Desire for more time to complete the activity, discuss the patient case, or debrief with the facilitator.
   - Some students felt rushed and wished for additional time to calculate dosages, discuss medication changes, or delve deeper into the patient's health.

2. **Information and Preparation**
   - The importance of having more information about the case or patient beforehand.
   - Clearer expectations regarding the information shared between professions.
   - More context or guidance on specific topics or areas to focus on.

3. **Clearer Structured Communication**
   - Need for clearer communication structures or a more logical progression in discussions.
   - More guidance on how to engage in these types of interprofessional interactions effectively.
   - clearer communication, concise statements, or increasing confidence in presenting recommendations.

4. **Role Reversal and Variety**
   - Students expressed interest in experiencing scenarios where pharmacists seek advice from other professions or working with a larger team.
   - More diverse or complex patient cases to further challenge their problem-solving skills.

5. **Feedback and Reflection**
   - More immediate feedback or the ability to review video recordings of their performance.
   - Incorporating patient follow-up discussions or incorporating more opportunities for reflection and self-assessment.

6. **Realistic Simulations**
   - Students mentioned the benefits of simulating realistic patient interactions and including more information about patients' disease states or other medications.
   - A few students highlighted the value of incorporating coupon and discount discussions into the simulation, reflecting real-world scenarios.

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Qualitative Responses

Additional Student Comments Provided

1. **Enjoyment and Positive Experience**
   - Expressed enjoyment and positive experiences with the activity.
   - Appreciated the low-stress environment and the opportunity to practice patient presentations and telehealth consultations.
   - Desire to do more of these interactions in the future.

2. **Collaboration and Interprofessional Communication**
   - Appreciated collaborating with pharmacy students and working together to solve problems.
   - Enjoyed the opportunity to communicate and learn from students in other healthcare professions.
   - Some students mentioned the benefits of working in a collaborative setting and hearing different thoughts and ideas.

3. **Confidence and Professional Growth**
   - The activity boosted their confidence in patient care.
   - Appreciated the opportunity to work on their communication skills and learn more about the role of pharmacists.
   - Desire to continue practicing and improving their abilities in similar scenarios.

4. **Realistic Simulation Relevance**
   - Students found the activity to be realistic and relevant to their future practice.
   - Appreciated the exposure to telehealth and the opportunity to conduct professional telehealth consultations efficiently
   - Highlighted the importance of incorporating real-world scenarios, complex patient cases, and discussions on managing medication costs.

5. **Continued Improvement and Variation**
   - Students expressed a desire for more activities like this in the future.
   - Some students mentioned areas where they could improve, such as communication, confidence, or specific skills like dosing or medication selection.
   - Few students provided suggestions for improvement, such as incorporating role reversal or providing additional context and guidance on specific topics.

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Conclusion

Conclusions

The interprofessional telehealth simulation project demonstrated that dyad conversations among two different health profession student groups was a success, allowing them time
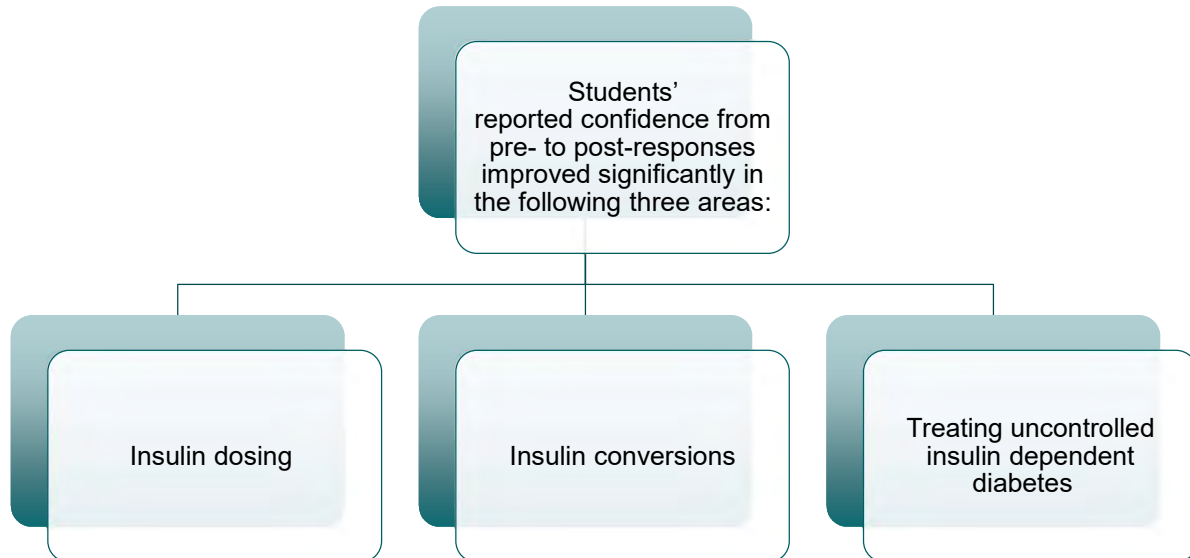
To practice interprofessional skills

Learn each other's roles

Work together as a team to use the expertise from each profession to solve a complex patient case and develop a joint treatment plan.

Conclusions

Students' reported confidence from pre- to post-responses improved significantly in the following three areas:

- Insulin dosing
- Insulin conversions
- Treating uncontrolled insulin dependent diabetes

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Wrap Up

Students found this realistic and relevant to future practice

A desire for more activities like this in the future

Identified areas they could improve such as communication, confidence, or specific skills like dosing or medication selection.

Suggested areas for improvement were providing additional context and guidance, having more time for debrief and self-reflection such as watching their videos

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References

1. Association of American Medical Colleges (AAMC). (2021). Telehealth Competencies Across the Learning Continuum. AAMC New and Emerging Areas in Medicine Series. Washington, DC: AAMC.

2. Begley, K., O'Brien, K., Packard, K., Castillo, S., Haddad, A. R., Johnson, K., Coover, K., Pick, A. (2019). Impact of interprofessional telehealth case activities on students' perceptions of their collaborative care abilities. *American Journal of Pharmaceutical Education, 83*(4), 474-482.

3. Margalit, R., Thompson, S., Visovsky, C., Geske, J., Collier, D., Birk, T., & Paulman, P. (2009). From professional silos to interprofessional education: campuswide focus on quality of care. *Quality Management in Healthcare*, *18*(3), 165-173.

4. Interprofessional Education Collaborative (IPEC). (2016). Core competencies for interprofessional collaborative practice: 2016 update. Washington, DC: Interprofessional Education Collaborative.

5. Slater, N., Todd, A., & Grimm, A. (2020). Pharmacy students as educators: An interprofessional approach to insulin management education. *Currents in pharmacy teaching and learning*, *12*(6), 689-693.

6. Wosik, J., Fudim, M., Cameron, B., Gellad, Z. F., Cho, A., Phinney, D., Curtis, S., Roman, M., Poon, E. G., Ferranti, J., Katz, J. N., & Tcheng, J. (2020). Telehealth transformation: COVID-19 and the rise of virtual care. J*ournal of the American Medical Informatics Association, 27*(6), 957-962.

7. Shaver, J. (2022). The state of telehealth before and after the COVID-19 pandemic. *Primary Care: Clinics in Office Practice, 49*(4), 517-530.

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