Expert consensus to explore the use of telehealth and associated strategies to improve access to care for remote and underserved patients with pulmonary arterial hypertension

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Background

- The coronavirus infectious disease of 2019 (COVID-19) pandemic was pivotal in the expansion of telehealth, replacing face-to-face visits between patients and clinicians with virtual consultations to reduce the risk of transmission.[1,2]
- Since the pandemic, PAH referrals and outpatient activity have continued to shift toward a hybrid model, with increased use of telehealth.[2-5]
- Regular use of telehealth may benefit patients with PAH by facilitating access to expert care.[6] However, there are barriers to engagement with telehealth for patients with PAH in remote and underserved populations.[7-10]

Objective

To clarify and develop a consensus of expert clinical opinion on the benefits and barriers to telemedicine, and to propose solutions to barriers, to improve access to expert care in PAH.

Methods

- A modified Delphi panel involving two survey rounds followed by a final consensus meeting was conducted with clinical experts.

FIGURE 1: Modified Delphi panel process

Inclusion criteria
- ✓ United States (US)-based physicians (phys.) and advanced practice providers (APPs) who specialize in cardiology or pulmonology
- ✓ Experience with telehealth for the treatment and active management of patients with PAH

Invitation of clinical experts (n=17) to join modified **Delphi panel**

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Delphi panel round 1: Online Questionnaire (n = 17: phys.: 11; APPs: 6)

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Analysis of **Delphi panel** Round 1 results

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Delphi panel round 2: Online Questionnaire (n = 16: phys.: 11; APPs: 5)*

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Analysis of **Delphi panel** Round 2 results

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Delphi panel round 3: Consensus Meeting (n= 12: phys.: 10; APPs: 2)†

*One APP that was initially recruited did not complete the second-round questionnaire
†The consensus meeting was scheduled based on panelist availabilities.

- A nine-point Likert scale (from 1 [strongly disagree] to 9 [strongly agree]) was used to rate consensus.

Results

Definition of telehealth

- Telehealth was defined as **the use of virtual or remote methodologies to interact with, monitor and assess patients and to deliver healthcare.**
- Telemedicine was defined as the delivery of clinical care (e.g., assessments, diagnosis, treatment, and prescription of medication) remotely.
- The definition of telehealth would not change when considering different diseases.

Methodologies/interventions considered as telehealth
- ✓ Data recorded via remote clinical device worn by patient
- ✓ Data recorded via smart device
- ✓ Live video consultation
- ✓ Electronic patient visit (billable e-visit)
- ✓ Patient portal message
- ✓ Self-reported patient data inputted into app on smartphone or tablet and shared with HCP electronically
- ✓ Online patient portal
- ✓ Telephone consultation with HCP
- ✓ Patient questionnaire completion
- ✓ Education for both patients and providers performed remotely
- ✓ Monitoring patient weight and edema
- ✓ Adjustment of medications; interfacing with specialty pharmacies
- ✓ Lab work performed at a remote location

Examples of synchronous/asynchronous interventions used for patients with PAH

Synchronous telehealth interventions	Asynchronous telehealth interventions
Live video consultation Telephone consultation	Patient portal message

Telehealth use in PAH

- Panelists discussed that payers understand telehealth but the criteria for what is reimbursed change frequently and lack clarity, indicating a lack of appreciation and understanding for what is involved in the provision of telehealth for PAH.
- Panelists agreed that access to at-home monitoring devices, used in other disease areas, could address unmet needs for PAH.
- Panelists agreed that patients may utilize telehealth at returning visits, at diagnostic test (where feasible), follow-up and for PAH medication management. The use of telehealth for post-hospital follow-up is context-dependent.
- The panel agreed that PAH-related healthcare was felt to have suffered for patients with PAH who did not transition successfully to telehealth during the height of the COVID-19 restrictions.

Benefits of telehealth for patients with PAH

- Time efficiency
- Convenience
- Health equity
- Enables additional visits
- Access to care
- Caregiver involvement

Barriers to telehealth

- Consensus was reached that telehealth is less effective in patients unable to access/use technology. Lack of patient resources was agreed to impact the transition of patients with PAH to telehealth during the COVID-19 pandemic.
- Consensus was reached that regulations (e.g. confidentiality) and financial restraints (e.g. ability to get reimbursed or provide infrastructure) are key barriers to telehealth in PAH.
- Additionally, temporary across-state-licenses facilitated telehealth use during COVID-19, but these have now been rescinded.

Patient-related barriers for access to telehealth in PAH
- Patient digital literacy
- Developmental disability
- Visual and/or hearing impairment

- A combination of factors (e.g. education, income, employment status) could contribute to increasing socioeconomic barriers to telehealth in PAH.

Suitability of clinical evaluations for remote use

Suitable for remote use	**Not suitable** for remote use:
✓Vital signs ✓Lab tests (at a remote location) ✓History ✓Medication history ✓Functional class	×Physical exam ×Right heart catheterization

- Consensus was not reached for or against remote use of 6-minute walk distance or echocardiogram.

Opportunities and solutions for telehealth in PAH

Solutions to improve patient access to telehealth
- Being able to see patients and be reimbursed for patient care across state lines
- Integrating the use of digital translators into telehealth offerings
- Health insurance reimbursement/financial support/supplied devices
- Improved connectivity/connection infrastructure

- Consensus was reached that improved broadband internet access is a solution to decrease digital access disparities.
- Companies can partner and collaborate with HCPs to support successful telehealth interventions:
  - during the diagnostic phase, by providing support to improve access for patients to interact with telehealth
  - during treatment, by providing an online platform to support prescription (e.g., portal for online signature, online forms for data collection)
  - during follow-up, by supporting with evidence generation for benefits (e.g., sponsoring of telehealth studies)

Solutions for education

- Consensus was reached that patient-directed learning materials could increase patient education.
- HCPs would like to receive training on reimbursement/billing for telehealth provision.

Solutions to overcoming patient preference for a telehealth visit when an in-person visit is needed

- Patient education regarding benefits of an in-person visit
- Setting/alignment of telehealth use expectations
- Patient education regarding appropriate use of telehealth vs in-person visits

Solutions for provider willingness

- Consensus was reached for the following solutions to increase provider willingness to more widely adopt telehealth in PAH:
  - Reimbursement*
  - Logistical/scheduling considerations (i.e.. making telehealth more accessible and convenient)

*Issues with reimbursement can be solved through change in insurance/payer approach and equal payment for telehealth vs in-person healthcare

Conclusions and Key Takeaways

Key takeaway

Use of telehealth services can benefit patients through improved access to care, greater convenience, enabling additional visits that allow closer patient monitoring, improving time efficiency and improving health equity.

Conclusions

- Improvements in telehealth practice may ensure closer patient monitoring so that PAH progression is not exacerbated by insufficient access to care.
- Currently, the criteria for telehealth reimbursement can change frequently and licensing restrictions prevent HCPs from providing care to out-of-state patients. This may demonstrate a lack of appreciation of what is involved in the provision of telehealth for PAH by payers.
- Key barriers to the optimal utilization of telehealth in PAH include the lack of patient resources, e.g. internet connection and electronic devices, and reimbursement restraints imposed by insurers and payers.
- Solutions to overcoming barriers to telehealth for PAH include improved health insurance reimbursements/ financial support for HCPs and better connectivity infrastructure for patients.
- These results may inform future PAH management and provide solutions to improve telehealth service provision for HCPs and patients.

Disclosures

SMD is a consultant or advisor for: Acceleron Pharma, Inc.; J&J innovative medicines, Ltd; Aerami Therapeutics; Janssen Biotech, Inc.; Liquidia Technologies, Inc.; Merck & Co., Inc.; United Therapeutics Corporation.
MSK has served as an advisor or consultant for: J&J innovative medicines, Ltd; United Therapeutics Corporation; Gilead Sciences, Inc. and has served as a speaker or a member of a speaker's bureau for: Actelion Pharmaceuticals, Ltd; United Therapeutics Corporation; Gilead Sciences, Inc.

LMG has bas acted as a Consultant for United Therapeutics, Merck, Janssen, Bayer; Speaker for United Therapeutics, Janssen, Bayer and Advisory Board Member for United Therapeutics, Janssen, Bayer.

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Pulmonary Arterial Hypertension

Johnson&Johnson

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