

Supplementary Appendix

Current clinical utilization of risk assessment tools in pulmonary arterial hypertension: a descriptive survey of facilitation strategies, patterns and barriers to use in the United States

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Figure S1. Text of PAH risk assessment survey

1) In what state is your practice?

2) What facility is your practice associated with?

3) Are you a physician provider or an advanced practice provider (i.e., nurse practitioner or physician assistant)?

a) Physician

b) Nurse Practitioner

c) Physician Assistant

d) Other (please specify): _____

4) Do you make treatment decisions with regard to PAH patients?

a) Yes

b) No

5) How long have you been treating PAH patients?

a) 1–5 years

b) 6–10 years

c) 11–15 years

d) >15 years

6) How many PAH patients are followed in your practice?

a) 1–50

b) 51–100

c) 101–300

d) 301–500

e) >500

7) Do you practice within a Pulmonary Hypertension Association (PHA)-Accredited Center?

a) Yes: Center of Comprehensive Care (CCC)

b) Yes: Regional Clinical Program (RCP)

c) No

8) If No to #7, are you currently applying for CCC or RCP accreditation?

a) No

b) CCC

c) RCP

9) Do you perform risk assessment in your PAH patients in order to evaluate treatment response, symptoms, or disease progression?

- a) No
- b) Yes, using clinical gestalt only (no formal tools)
- c) Yes, using formal tools

10) Which of the following risk assessment tools, if any, do you use? (select all that apply)

- a) Registry to Evaluate Early and Long-term PAH Disease Management (REVEAL) risk calculator
- b) French Pulmonary Hypertension Registry (FPHR) risk scoring system
- c) European Society of Cardiology/European Respiratory Society (ESC/ERS) PH 2015 guidelines for risk assessment
- d) Comparative, Prospective Registry of Newly Initiated Therapies for Pulmonary Hypertension (COMPERA) risk stratification
- e) Swedish Pulmonary Arterial Hypertension Registry (SPAHR) risk assessment
- f) Other (please specify): _____

11) If yes, could you please tell us why you use this specific risk assessment tool? (select all that apply)

- a) Has been established at practice site
- b) Recommended by other practitioners
- c) Based on my own experience
- d) Included in guidelines
- e) Other (please specify): _____

12) When do you use risk assessment in your practice? I use risk assessment: (check all that apply)

- a) At time of diagnosis
- b) Time of repeat RHC
- c) Time of repeat echocardiogram
- d) At follow-up, when changing medications
- e) At follow-up, when there are symptoms of disease progression
- f) Either intermittently, or on a regular schedule (please specify): _____

13) I do the following to facilitate use of a risk assessment tool in my practice: (check all that apply)

- a) Incorporate risk assessment tool into electronic medical records (EMR)
- b) Incorporate risk assessment tool into our PAH practice protocols
- c) Nothing
- d) Other (please specify): _____

14) What are the major barriers that limit your use of risk assessment tools to guide your treatment decisions/recommendations for your patients with PAH? (check all that apply)

- a) Time constraints
- b) Patient adherence
- c) Financial / insurance constraints
- d) Lack of technology/electronic medical record (EMR) integration
- e) My center does not treat advanced patients
- f) Lack of administrative and/or collegial support
- g) I question the prognostic value of risk assessment
- h) Lack of accountability from organization / institution
- i) Complexity of risk assessment tools and scoring systems

- j) Some risk assessment data rely on outside and unreliable data
- k) I do not think risk assessment should be used to inform treatment decisions
- l) Available risk assessment tools allow for too much clinician variation
- m) Lack of education / training / awareness of available risk assessment tools
- n) Lack of clarity around best tool to use
- o) Other (please specify): _____

15) What resources or other assistance could facilitate regular use of risk assessment in your PAH practice? (write in)

Table S1. Most commonly cited barriers to increased use of risk tools by years of experience treating PAH and characteristics of the treating center

Subgroup	Time constraints	Lack of technology / EMR integration	Lack of administrative / colleague support	Complexity of tools and scoring systems	Lack of education / awareness / training	Clarity on which tool to use
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
1–100 PAH patients (n=34)	14 (41)	11 (32)	6 (18)	4 (12)	6 (18)	8 (24)
>100 PAH patients (n=86)	37 (43)	30 (35)	18 (21)	13 (15)	6 (7)	19 (22)
1–5 years treating PAH (n=33)	13 (39)	12 (36)	6 (18)	6 (18)	5 (15)	10 (30)
>5 years treating PAH (n=87)	38 (44)	29 (33)	18 (21)	11 (13)	7 (8)	17 (20)
Accredited center (n=58)	25 (43)	20 (34)	9 (16)	9 (16)	3 (5)	13 (22)

Non-Accredited center (n=61)	26 (43)	21 (34)	15 (25)	8 (13)	9 (15)	13 (21)
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CI: confidence interval; EMR, electronic medical record; PAH, pulmonary arterial hypertension.