## American College of Radiology ACR Appropriateness Criteria®

## **Pulmonary Arteriovenous Malformation (PAVM)**

Variant 1: Adult. Presenting with a transient ischemic attack, or seizures, or brain abscess, or altered sensorium. Chest radiography reveals a lung nodule. Suspected pulmonary arteriovenous malformation (PAVM). Next imaging study.

|  | Appropriateness        | COF           | 4.1.1. D.              | D 1 DE-                    | <b>D</b> .: | 3.6.11 |   |   | F | inal ' | Tabu | latio | ns |   |   |
|--|------------------------|---------------|------------------------|----------------------------|-------------|--------|---|---|---|--------|------|-------|----|---|---|
| Procedure  | Category               | SOE           | Adults RRL             | Peds RRL                   | Rating      | Median | 1 | 2 | 3 | 4      | 5    | 6     | 7  | 8 | 9 |
| CT chest without IV contrast                       | Usually<br>appropriate | Limited       | <b>≎≎≎</b> 1-10<br>mSv | ���� 3-<br>10 mSv<br>[ped] | 8           | 8      | 0 | 0 | 0 | 0      | 1    | 1     | 5  | 7 | 3 |
|  |                        | References    |                        | Study                      | Quality     |        |   |   |   |        |      |       |    |   |   |
|  |                        | 10 (19553198) |                        |                            | 4           |        |   |   |   |        |      |       |    |   |   |
|  |                        | 28 (8184042)  |                        |                            | 4           |        |   |   |   |        |      |       |    |   |   |
|  |                        | 27 (25032812) |                        |                            | 4           |        |   | , | , |        |      |       |    |   |   |
| US echocardiography transthoracic with IV contrast | Usually<br>appropriate | Strong        | O 0 mSv                | O 0 mSv<br>[ped]           | 8           | 8      | 0 | 1 | 1 | 0      | 1    | 0     | 3  | 8 | 6 |
|  |                        | References    |                        | Study                      | Quality     |        |   |   |   |        |      |       |    |   |   |
|  |                        | 1 (24008954)  |                        |                            | 4           |        |   |   |   |        |      |       |    |   |   |
|  |                        | 45 (23429940) |                        |                            | 3           |        |   |   |   |        |      |       |    |   |   |
|  |                        | 43 (17317734) |                        |                            | 2           |        |   |   |   |        |      |       |    |   |   |
|  |                        | 41 (19091794) |                        |                            | 1           |        |   |   |   |        |      |       |    |   |   |
|  |                        | 42 (1746435)  |                        |                            | 3           |        |   |   |   |        |      |       |    |   |   |
|  |                        | 44 (34322523) |                        |                            | 2           |        |   |   |   |        |      |       |    |   |   |
|  |                        | 46 (19276509) |                        |                            | 4           |        |   |   |   |        |      |       |    | , |   |
| CTA pulmonary arteries with IV contrast            | Usually<br>appropriate | Limited       | ��� 1-10<br>mSv        |                            | 8           | 8      | 0 | 0 | 0 | 1      | 0    | 1     | 4  | 7 | 4 |
|  |                        | References    |                        | Study                      | Quality     |        |   |   |   |        |      |       |    |   |   |

|   |   | 10 (19553198)  |                        |                            | 4       |   |   |   |   |   |   |   |    |   |   |
|---|---|----------------|------------------------|----------------------------|---------|---|---|---|---|---|---|---|----|---|---|
|   |   | 31 (32255688)  |                        |                            | 4       |   |   |   |   |   |   |   |    |   |   |
|   |   | 27 (25032812)  |                        |                            | 4       |   |   | 1 |   |   |   | 1 |    |   |   |
| MRA pulmonary arteries without and with IV contrast | Usually<br>appropriate                  | Limited        | O 0 mSv                | O 0 mSv<br>[ped]           | 7       | 7 | 0 | 0 | 0 | 1 | 2 | 2 | 10 | 2 | 0 |
|   |   | References     |                        | Study                      | Quality |   |   |   |   |   |   |   |    |   |   |
|   |   | 32 (18356434)  |                        |                            | 3       |   |   |   |   |   |   |   |    |   |   |
|   |   | 33 (33202566)  |                        |                            | 1       |   |   |   |   |   |   |   |    |   |   |
| CT chest with IV contrast                           | May be appropriate                      | Limited        | ��� 1-10<br>mSv        | ���� 3-<br>10 mSv<br>[ped] | 6       | 6 | 0 | 1 | 0 | 2 | 3 | 7 | 3  | 1 | 0 |
|   |   | References     |                        | Study                      | Quality |   |   |   |   |   |   |   |    |   |   |
|   |   | 10 (19553198)  |                        | 4                          |         |   |   |   |   |   |   |   |    |   |   |
|   |   | 27 (25032812)  |                        |                            | 4       |   |   |   |   |   |   |   |    |   |   |
|   |   | 26 (31875234)  |                        |                            | 4       |   |   |   |   |   |   |   |    |   |   |
| CTA chest with IV contrast                          | May be<br>appropriate<br>(Disagreement) | Expert Opinion | <b>⊕⊕⊕</b> 1-10<br>mSv | ���� 3-<br>10 mSv<br>[ped] | 5       | 5 | 0 | 0 | 2 | 2 | 2 | 0 | 4  | 5 | 2 |
|   |   | References     |                        | Study                      | Quality |   |   |   |   |   |   |   |    |   |   |
|   |   | 10 (19553198)  |                        |                            | 4       |   |   |   |   |   |   |   |    |   |   |
|   |   | 30 (16484354)  |                        |                            | 3       |   |   |   |   |   |   |   |    |   |   |
|   |   | 27 (25032812)  |                        |                            | 4       |   |   |   |   |   |   |   |    |   |   |
|   |   | 29 (17116729)  |                        |                            | 3       |   |   |   |   | _ |   |   |    |   |   |
| CT chest without and with IV contrast               | May be<br>appropriate<br>(Disagreement) | Expert Opinion | ��� 1-10<br>mSv        | ���� 3-<br>10 mSv<br>[ped] | 5       | 5 | 1 | 0 | 3 | 2 | 1 | 8 | 2  | 0 | 0 |
|   |   | References     |                        | Study                      | Quality |   |   |   |   |   |   |   |    |   |   |
|   |   | 10 (19553198)  |                        |                            | 4       |   |   |   |   |   |   |   |    |   |   |
|   |   | 24 (18774307)  |                        |                            | 2       |   |   |   |   |   |   |   |    |   |   |
|   |   | 27 (25032812)  |                        |                            | 4       |   |   |   |   |   |   |   |    |   |   |
| MRA chest without and with IV contrast              | May be appropriate (Disagreement)       | Expert Opinion | O 0 mSv                | O 0 mSv<br>[ped]           | 5       | 5 | 0 | 1 | 1 | 2 | 2 | 3 | 8  | 0 | 0 |

| Arteriography pulmonary                              | May<br>approp    | Limited             | ���� 10-<br>mSv  | 30     |                      | 4       | 4 | 0 | 1 | 1 | 11 | 2 | 2 | 0 | 0 | 0 |
|--|------------------|---------------------|------------------|--------|----------------------|---------|---|---|---|---|----|---|---|---|---|---|
|  |                  | References          |                  |        | Study                | Quality |   |   |   |   |    |   |   |   |   |   |
|  |                  | 24 (18774307)       |                  |        |                      | 2       |   |   |   |   |    |   |   |   |   |   |
|  |                  | 25 (7956388)        |                  |        |                      | 4       |   |   |   |   |    |   |   |   |   |   |
| US echocardiography transesophageal with IV contrast | May<br>approp    | Limited             | O 0 mSv          |        | 0 mSv<br>ped]        | 4       | 4 | 0 | 4 | 3 | 6  | 4 | 0 | 0 | 0 | 0 |
|  |                  | References          |                  |        | Study                | Quality |   |   |   |   |    |   |   |   |   |   |
|  |                  | 38 (8181373)        |                  |        |                      | 4       |   |   |   |   |    |   |   |   |   |   |
|  |                  | 40 (12848887)       |                  |        |                      | 4       |   |   |   |   |    |   |   |   |   |   |
| MRA pulmonary arteries without IV contrast           | Usuall<br>approp | Expert<br>Consensus | O 0 mSv          |        | 0 mSv<br>ped]        | 3       | 3 | 2 | 2 | 5 | 3  | 3 | 1 | 1 | 0 | 0 |
| MRA chest without IV contrast                        | Usuall<br>approp | Expert<br>Consensus | O 0 mSv          |        | 0 mSv<br>ped]        | 3       | 3 | 1 | 4 | 8 | 1  | 3 | 0 | 0 | 0 | 0 |
| US echocardiography transthoracic resting            | Usuall<br>approp | Limited             | O 0 mSv          |        | 0 mSv<br>ped]        | 3       | 3 | 5 | 5 | 8 | 0  | 0 | 0 | 1 | 1 | 0 |
|  |                  | References          |                  |        | Study                | Quality |   |   |   |   |    |   |   |   |   |   |
|  |                  | 38 (8181373)        |                  |        |                      | 4       |   |   |   |   |    |   |   |   |   |   |
| US echocardiography<br>transesophageal               | Usuall<br>approp | Limited             | O 0 mSv          |        | 0 mSv<br>ped]        | 3       | 3 | 6 | 3 | 5 | 2  | 3 | 0 | 1 | 0 | 0 |
|  |                  | References          |                  |        | Study                | Quality |   |   |   |   |    |   |   |   |   |   |
|  |                  | 38 (8181373)        |                  |        |                      | 4       |   |   |   |   |    |   |   |   |   |   |
|  |                  | 39 (2212350)        |                  |        |                      | 3       |   |   |   |   |    |   |   |   |   |   |
| Radiography chest                                    | Usuall<br>approp | Limited             | <b>≎</b> <0.1 mS | Sv ∣ n | <0.03<br>nSv<br>ped] | 2       | 2 | 9 | 3 | 3 | 3  | 1 | 0 | 1 | 0 | 0 |
|  |                  | References          |                  |        | Study                | Quality |   |   |   |   |    |   |   |   |   |   |
|  |                  | 36 (14742303)       |                  |        |                      | 3       |   |   |   |   |    |   |   |   |   |   |
|  |                  | 37 (29141890)       |                  |        |                      | 4       |   |   |   |   |    |   |   |   |   |   |
| Pertechnetate albumin pulmonary scan                 | Usuall<br>approp | Limited             | ��� 1-10<br>mSv  | 0      |                      | 2       | 2 | 8 | 4 | 2 | 3  | 2 | 0 | 0 | 1 | 0 |

| References   | Study Quality |
|--------------|---------------|
| 34 (3968579) | 4             |
| 35 (4070672) | 4             |

Variant 2: Adult. Presenting with shortness of breath, or hemothorax, or hemoptysis. Patient has history of epistaxis and family history of hereditary hemorrhagic telangiectasia (HHT). Suspected PAVM. Initial imaging.

|  | Appropriateness        | COF           | 4.1.1. DD7      | D 1 DD1                    | - ·     | 3.5.31 |   |   | F | inal | Tabu | latio | ns |   |   |
|--|------------------------|---------------|-----------------|----------------------------|---------|--------|---|---|---|------|------|-------|----|---|---|
| Procedure  | Category               | SOE           | Adults RRL      | Peds RRL                   | Rating  | Median | 1 | 2 | 3 | 4    | 5    | 6     | 7  | 8 | 9 |
| US echocardiography transthoracic with IV contrast | Usually<br>appropriate | Strong        | O 0 mSv         | O 0 mSv<br>[ped]           | 8       | 8      | 0 | 0 | 2 | 0    | 0    | 1     | 2  | 6 | 9 |
|  |                        | References    |                 | Study                      | Quality |        |   |   |   |      |      |       |    |   |   |
|  |                        | 1 (24008954)  |                 |                            | 4       |        |   |   |   |      |      |       |    |   |   |
|  |                        | 45 (23429940) |                 |                            | 3       |        |   |   |   |      |      |       |    |   |   |
|  |                        | 43 (17317734) |                 |                            | 2       |        |   |   |   |      |      |       |    |   |   |
|  |                        | 41 (19091794) |                 |                            | 1       |        |   |   |   |      |      |       |    |   |   |
|  |                        | 42 (1746435)  |                 |                            | 3       |        |   |   |   |      |      |       |    |   |   |
|  |                        | 44 (34322523) |                 |                            | 2       |        |   |   |   |      |      |       |    |   |   |
|  |                        | 46 (19276509) |                 |                            | 4       |        |   |   |   |      |      |       |    |   |   |
| CTA pulmonary arteries with IV contrast            | Usually appropriate    | Limited       | ��� 1-10<br>mSv |                            | 8       | 8      | 0 | 0 | 0 | 0    | 1    | 1     | 2  | 8 | 5 |
|  |                        | References    |                 | Study                      | Quality |        | - |   |   |      |      |       |    |   |   |
|  |                        | 10 (19553198) |                 |                            | 4       |        |   |   |   |      |      |       |    |   |   |
|  |                        | 31 (32255688) |                 |                            | 4       |        |   |   |   |      |      |       |    |   |   |
|  |                        | 27 (25032812) |                 |                            | 4       |        |   |   |   |      |      |       |    |   |   |
| CTA chest with IV contrast                         | Usually<br>appropriate | Limited       | ��� 1-10<br>mSv | ���� 3-<br>10 mSv<br>[ped] | 7       | 7      | 0 | 0 | 1 | 1    | 3    | 1     | 4  | 7 | 0 |
|  |                        | References    |                 | Study                      | Quality |        |   |   |   |      |      |       |    |   |   |
|  |                        | 10 (19553198) |                 |                            | 4       |        |   |   |   |      |      |       |    |   |   |
|  |                        | 30 (16484354) |                 |                            | 3       |        |   |   |   |      |      |       |    |   |   |

|   |                        |                     | <u> </u>          |                            |           |   |   |   |   |   |   |   |    |   |   |
|---|------------------------|---------------------|-------------------|----------------------------|-----------|---|---|---|---|---|---|---|----|---|---|
|   |                        | 27 (25032812)       |                   |                            | 4         |   |   |   |   |   |   |   |    |   |   |
|   |                        | 29 (17116729)       |                   | 1                          | 3         |   |   |   |   |   |   |   |    |   |   |
| CT chest with IV contrast                           | Usually<br>appropriate | Limited             | ଫଫଫ 1-10<br>mSv   | ���� 3-<br>10 mSv<br>[ped] | 7         | 7 | 0 | 0 | 0 | 0 | 1 | 0 | 13 | 3 | 0 |
|   |                        | References          |                   | Study                      | y Quality |   |   |   |   |   |   |   |    |   |   |
|   |                        | 10 (19553198)       |                   |                            | 4         |   |   |   |   |   |   |   |    |   |   |
|   |                        | 27 (25032812)       |                   |                            | 4         |   |   |   |   |   |   |   |    |   |   |
|   |                        | 26 (31875234)       |                   |                            | 4         |   |   |   |   |   |   |   |    |   |   |
| CT chest without IV contrast                        | Usually<br>appropriate | Limited             | ��� 1-10<br>mSv   | ���� 3-<br>10 mSv<br>[ped] | 7         | 7 | 0 | 0 | 0 | 1 | 2 | 5 | 3  | 4 | 2 |
|   |                        | References          |                   | Study                      | y Quality |   |   |   |   |   |   |   |    |   |   |
|   |                        | 10 (19553198)       |                   |                            | 4         |   |   |   |   |   |   |   |    |   |   |
|   |                        | 28 (8184042)        |                   |                            | 4         |   |   |   |   |   |   |   |    |   |   |
|   |                        | 27 (25032812)       |                   |                            | 4         |   |   |   |   |   |   |   |    |   |   |
| MRA pulmonary arteries without and with IV contrast | Usually<br>appropriate | Limited             | O 0 mSv           | O 0 mSv<br>[ped]           | 7         | 7 | 0 | 0 | 1 | 0 | 3 | 3 | 7  | 3 | 0 |
|   |                        | References          |                   | Study                      | y Quality |   |   |   |   |   |   |   |    |   |   |
|   |                        | 32 (18356434)       |                   |                            | 3         |   |   |   |   |   |   |   |    |   |   |
|   |                        | 33 (33202566)       |                   |                            | 1         |   |   |   |   |   |   |   |    |   |   |
| MRA chest without and with IV contrast              | May be appropriate     | Expert<br>Consensus | O 0 mSv           | O 0 mSv<br>[ped]           | 6         | 6 | 0 | 0 | 1 | 1 | 4 | 3 | 7  | 1 | 0 |
| CT chest without and with IV contrast               | May be appropriate     | Limited             | ��� 1-10<br>mSv   | ���� 3-<br>10 mSv<br>[ped] | 5         | 5 | 0 | 0 | 3 | 2 | 9 | 3 | 0  | 0 | 0 |
|   |                        | References          |                   | Study                      | y Quality |   |   |   |   |   |   |   |    |   |   |
|   |                        | 10 (19553198)       |                   |                            | 4         |   |   |   |   |   |   |   |    |   |   |
|   |                        | 24 (18774307)       |                   |                            | 2         |   |   |   |   |   |   |   |    |   |   |
|   |                        | 27 (25032812)       |                   |                            | 4         |   |   |   |   |   |   |   |    |   |   |
| Arteriography pulmonary                             | May be appropriate     | Limited             | ���� 10-30<br>mSv |                            | 4         | 4 | 0 | 1 | 0 | 9 | 5 | 1 | 0  | 1 | 0 |
|   |                        | References          |                   | Study                      | y Quality |   |   |   |   |   |   |   |    |   |   |

|  | 24 (19774207)   |   |  |                         | 2                       |                         |                         |                         |                         |  |  |                         |                         |                         |  |
|--|---|---|--|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|--|--|-------------------------|-------------------------|-------------------------|--|
|  | ` '   |   |  |                         |                         |                         |                         |                         |                         |  |  |                         |                         |                         |  |
|  | Expert<br>Consensus   | O 0 mSv   | ,  | O 0 mSv<br>[ped]        | 3                       | 3                       | 1                       | 5                       | 9                       | 3  | 1  | 0                       | 0                       | 0                       | 0  |
|  | Expert<br>Consensus   | O 0 mSv   | ,  | O 0 mSv<br>[ped]        | 3                       | 3                       | 0                       | 1                       | 12                      | 1  | 2  | 1                       | 0                       | 0                       | 0  |
|  | Limited   | O 0 mSv   | ,  | O 0 mSv<br>[ped]        | 3                       | 3                       | 3                       | 5                       | 6                       | 3  | 1  | 0                       | 0                       | 1                       | 1  |
|  | References  |   |  | Study                   | Quality                 |                         |                         |                         |                         |  |  |                         |                         |                         |  |
|  | 38 (8181373)  |   |  |                         | 4                       |                         |                         |                         |                         |  |  |                         |                         |                         |  |
|  | Limited   | O 0 mSv   | ,  | O 0 mSv<br>[ped]        | 3                       | 3                       | 5                       | 2                       | 6                       | 5  | 0  | 0                       | 1                       | 1                       | 0  |
|  | References  |   |  | Study                   | Quality                 |                         |                         |                         |                         |  |  |                         |                         |                         |  |
|  | 38 (8181373)  |   |  |                         | 4                       |                         |                         |                         |                         |  |  |                         |                         |                         |  |
|  | 39 (2212350)  |   |  |                         | 3                       |                         |                         |                         |                         |  |  |                         |                         |                         |  |
|  | Limited   | <b>≎</b> <0.1 mS  |  |                         | 3                       | 3                       | 2                       | 5                       | 4                       | 6  | 0  | 0                       | 0                       | 0                       | 0  |
|  | References  |   |  | Study                   | Quality                 |                         |                         |                         |                         |  |  |                         |                         |                         |  |
|  | 36 (14742303)   |   |  |                         | 3                       |                         |                         |                         |                         |  |  |                         |                         |                         |  |
|  | 37 (29141890)   |   |  |                         | 4                       |                         |                         |                         |                         |  |  |                         |                         |                         |  |
|  | Limited   | O 0 mSv   | ,  | O 0 mSv<br>[ped]        | 3                       | 3                       | 2                       | 5                       | 3                       | 3  | 3  | 1                       | 0                       | 0                       | 0  |
|  | References  |   |  | Study                   | Quality                 |                         |                         |                         |                         |  |  |                         |                         |                         |  |
|  | 38 (8181373)  |   |  |                         | 4                       |                         |                         |                         |                         |  |  |                         |                         |                         |  |
|  | 40 (12848887)   |   |  |                         | 4                       |                         |                         |                         |                         |  |  |                         |                         |                         |  |
|  | Limited   | ��� 1-10<br>mSv   | 0  |                         | 2                       | 2                       | 9                       | 3                       | 1                       | 5  | 1  | 0                       | 0                       | 1                       | 0  |
|  | References  |   |  | Study                   | Quality                 |                         |                         |                         |                         |  |  |                         |                         |                         |  |
|  | 34 (3968579)  |   |  |                         | 4                       |                         |                         |                         |                         |  |  |                         |                         |                         |  |
|  | 35 (4070672)  |   |  |                         | 4                       |                         |                         |                         |                         |  |  |                         |                         |                         |  |
| approp  Usuall approp  Usuall approp  Usuall approp  Usuall approp  Usuall Usuall Usuall Usuall Usuall | Usually not appropriate  Usually not appropriate | Usually not appropriate  Expert Consensus  Limited  References  38 (8181373)  Usually not appropriate  References  38 (8181373)  39 (2212350)  Usually not appropriate  References  36 (14742303)  37 (29141890)  Usually not appropriate  References  38 (8181373)  40 (12848887)  Usually not appropriate  Limited  References  38 (8181373)  40 (12848887)  Usually not appropriate  Limited  References  34 (3968579) | Usually not appropriate  Usually not appropriate  Usually not appropriate  Usually not appropriate  Expert Consensus  O 0 mSv  Expert Consensus  O 0 mSv  References  38 (8181373)  Usually not appropriate  References  38 (8181373)  39 (2212350)  Usually not appropriate  References  36 (14742303)  37 (29141890)  Usually not appropriate  References  38 (8181373)  40 (12848887)  Usually not appropriate  References  38 (8181373)  40 (12848887)  Usually not appropriate  Limited  References  38 (8181373)  40 (12848887)  Usually not appropriate  References  38 (8181373)  40 (12848887)  Usually not appropriate  References  34 (3968579) | Usually not appropriate   Expert Consensus   O 0 mSv | Usually not appropriate   Expert Consensus   O 0 mSv   [ped]   3   3   1   5   9   3 | Usually not appropriate | Usually not appropriate | Usually not appropriate | Usually not appropriate   Expert Consensus   O 0 mSv   D 0 mSv |

Variant 3: Adult. Asymptomatic with a family history of HHT and suspected PAVM. Initial imaging.

|   | Appropriateness        | 907           | 4.1.1. DD7      | D 1 DD1                    | - ·     | 3.5.31 |   |   | F | inal | Tabu | latio | ns |   |   |
|---|------------------------|---------------|-----------------|----------------------------|---------|--------|---|---|---|------|------|-------|----|---|---|
| Procedure   | Category               | SOE           | Adults RRL      | Peds RRL                   | Rating  | Median | 1 | 2 | 3 | 4    | 5    | 6     | 7  | 8 | 9 |
| CTA chest with IV contrast                          | Usually appropriate    | Limited       | ��� 1-10<br>mSv | ���� 3-<br>10 mSv<br>[ped] | 7       | 7      | 0 | 0 | 0 | 1    | 3    | 2     | 10 | 1 | 0 |
|   |                        | References    |                 | Study                      | Quality |        |   |   |   |      |      |       |    |   |   |
|   |                        | 10 (19553198) |                 |                            | 4       |        |   |   |   |      |      |       |    |   |   |
|   |                        | 30 (16484354) |                 |                            | 3       |        |   |   |   |      |      |       |    |   |   |
|   |                        | 27 (25032812) |                 |                            | 4       |        |   |   |   |      |      |       |    |   |   |
|   |                        | 29 (17116729) |                 |                            | 3       |        | _ |   |   |      |      |       |    |   |   |
| CT chest without IV contrast                        | Usually appropriate    | Limited       | ��� 1-10<br>mSv | ���� 3-<br>10 mSv<br>[ped] | 7       | 7      | 0 | 0 | 0 | 1    | 3    | 2     | 9  | 1 | 1 |
|   |                        | References    |                 | Study                      | Quality |        |   |   |   |      |      |       |    |   |   |
|   |                        | 10 (19553198) |                 |                            | 4       |        |   |   |   |      |      |       |    |   |   |
|   |                        | 28 (8184042)  |                 |                            | 4       |        |   |   |   |      |      |       |    |   |   |
|   |                        | 27 (25032812) |                 |                            | 4       |        | _ |   |   |      |      |       |    |   |   |
| MRA pulmonary arteries without and with IV contrast | Usually<br>appropriate | Limited       | O 0 mSv         | O 0 mSv<br>[ped]           | 7       | 7      | 0 | 0 | 1 | 1    | 2    | 2     | 7  | 4 | 0 |
|   |                        | References    |                 | Study                      | Quality |        |   |   |   |      |      |       |    |   |   |
|   |                        | 32 (18356434) |                 |                            | 3       |        |   |   |   |      |      |       |    |   |   |
|   |                        | 33 (33202566) |                 |                            | 1       |        | _ |   |   |      |      |       |    |   |   |
| US echocardiography transthoracic with IV contrast  | Usually appropriate    | Strong        | O 0 mSv         | O 0 mSv<br>[ped]           | 7       | 7      | 0 | 1 | 1 | 0    | 1    | 1     | 5  | 8 | 0 |
|   |                        | References    |                 | Study                      | Quality |        | _ | - |   |      |      |       |    |   |   |
|   |                        | 1 (24008954)  |                 |                            | 4       |        |   |   |   |      |      |       |    |   |   |
|   |                        | 45 (23429940) |                 |                            | 3       |        |   |   |   |      |      |       |    |   |   |
|   |                        | 43 (17317734) |                 |                            | 2       |        |   |   |   |      |      |       |    |   |   |
|   |                        | 41 (19091794) |                 |                            | 1       |        |   |   |   |      |      |       |    |   |   |

|  | Г                  |                     |                  |                            |            |   |   |   |    |   |    |   |   |   |   |
|--|--------------------|---------------------|------------------|----------------------------|------------|---|---|---|----|---|----|---|---|---|---|
|  |                    | 42 (1746435)        |                  |                            | 3          |   |   |   |    |   |    |   |   |   |   |
|  | _                  | 44 (34322523)       |                  |                            | 2          |   |   |   |    |   |    |   |   |   |   |
|  |                    | 46 (19276509)       |                  |                            | 4          |   |   |   |    |   |    |   |   |   |   |
| CTA pulmonary arteries with IV contrast    | Usual<br>appropr   | Limited             | ��� 1-10<br>mSv  |                            | 7          | 7 | 0 | 0 | 0  | 0 | 1  | 3 | 5 | 7 | 0 |
|  |                    | References          |                  | Stud                       | ly Quality |   |   |   |    |   |    |   |   |   |   |
|  |                    | 10 (19553198)       |                  |                            | 4          |   |   |   |    |   |    |   |   |   |   |
|  |                    | 31 (32255688)       |                  |                            | 4          |   |   |   |    |   |    |   |   |   |   |
|  |                    | 27 (25032812)       |                  |                            | 4          |   |   |   |    |   |    |   |   |   |   |
| MRA chest without and with IV contrast     | May l<br>appropr   | Expert<br>Consensus | O 0 mSv          | O 0 mSv<br>[ped]           | 6          | 6 | 0 | 0 | 1  | 2 | 4  | 3 | 7 | 0 | 0 |
| CT chest with IV contrast                  | May l<br>appropr   | Limited             | ��� 1-10<br>mSv  | ���� 3-<br>10 mSv<br>[ped] | 5          | 5 | 0 | 0 | 0  | 3 | 11 | 2 | 1 | 0 | 0 |
|  |                    | References          |                  | Stud                       | ly Quality |   |   |   |    |   |    |   |   |   |   |
|  |                    | 10 (19553198)       |                  |                            | 4          |   |   |   |    |   |    |   |   |   |   |
|  |                    | 27 (25032812)       |                  |                            | 4          |   |   |   |    |   |    |   |   |   |   |
|  |                    | 26 (31875234)       |                  |                            | 4          |   |   |   |    |   |    |   |   |   |   |
| CT chest without and with IV contrast      | May l<br>appropr   | Limited             | ��� 1-10<br>mSv  | ���� 3-<br>10 mSv<br>[ped] | 5          | 5 | 1 | 0 | 0  | 4 | 9  | 3 | 0 | 0 | 0 |
|  |                    | References          |                  | Stud                       | ly Quality |   |   |   |    |   |    |   |   |   |   |
|  |                    | 10 (19553198)       |                  |                            | 4          |   |   |   |    |   |    |   |   |   |   |
|  |                    | 24 (18774307)       |                  |                            | 2          |   |   |   |    |   |    |   |   |   |   |
|  |                    | 27 (25032812)       |                  |                            | 4          |   |   |   |    |   |    |   |   |   |   |
| Arteriography pulmonary                    | Usually<br>appropr | Limited             | ���� 10-3<br>mSv | 0                          | 3          | 3 | 2 | 4 | 8  | 1 | 0  | 1 | 0 | 1 | 0 |
|  |                    | References          |                  | Stud                       | ly Quality |   | - |   |    |   |    |   |   |   |   |
|  |                    | <br>24 (18774307)   |                  |                            | 2          |   |   |   |    |   |    |   |   |   |   |
| MRA pulmonary arteries without IV contrast | Usually<br>appropr | Expert<br>Consensus | O 0 mSv          | O 0 mSv<br>[ped]           | 3          | 3 | 1 | 7 | 10 | 1 | 0  | 0 | 0 | 0 | 0 |

| MRA chest without IV contrast                        | Usuall<br>approp | Expert<br>Consensus | O 0 mSv         | O 0 mSv<br>[ped] | 3         | 3 | 0 | 3 | 8  | 2 | 3 | 0 | 1 | 0 | 0 |
|--|------------------|---------------------|-----------------|------------------|-----------|---|---|---|----|---|---|---|---|---|---|
| US echocardiography transthoracic resting            | Usuall<br>approp | Limited             | O 0 mSv         | O 0 mSv<br>[ped] | 3         | 3 | 2 | 3 | 12 | 0 | 0 | 0 | 0 | 0 | 0 |
|  |                  | References          |                 | Study            | y Quality |   |   |   |    |   |   |   |   |   |   |
|  |                  | 38 (8181373)        |                 |                  | 4         |   |   |   |    |   |   |   |   |   |   |
| Radiography chest                                    | Usuall<br>approp | Limited             | � <0.1 mSv      |                  | 3         | 3 | 3 | 3 | 5  | 2 | 3 | 1 | 0 | 0 | 0 |
|  |                  | References          | Study           | y Quality        |           | • |   |   |    |   |   |   |   |   |   |
|  |                  | 36 (14742303)       |                 |                  | 3         |   |   |   |    |   |   |   |   |   |   |
|  |                  | 37 (29141890)       |                 |                  | 4         |   |   |   |    |   |   |   |   |   |   |
| US echocardiography transesophageal with IV contrast | Usuall<br>approp | Limited             | O 0 mSv         | O 0 mSv<br>[ped] | 3         | 3 | 2 | 4 | 4  | 5 | 1 | 1 | 0 | 0 | 0 |
|  |                  | References          |                 | Study            | y Quality |   | • |   |    |   |   |   |   |   |   |
|  |                  | 38 (8181373)        |                 |                  | 4         |   |   |   |    |   |   |   |   |   |   |
|  |                  | 40 (12848887)       |                 |                  | 4         |   |   |   |    |   |   |   |   |   |   |
| US echocardiography<br>transesophageal               | Usuall<br>approp | Limited             | O 0 mSv         | O 0 mSv<br>[ped] | 2         | 2 | 7 | 4 | 5  | 3 | 0 | 1 | 0 | 0 | 0 |
|  |                  | References          |                 | Study            | y Quality |   |   |   |    |   |   |   |   |   |   |
|  |                  | 38 (8181373)        |                 |                  | 4         |   |   |   |    |   |   |   |   |   |   |
|  |                  | 39 (2212350)        |                 |                  | 3         |   |   |   |    |   |   |   |   |   |   |
| Pertechnetate albumin pulmonary scan                 | Usuall<br>approp | Limited             | ��� 1-10<br>mSv |                  | 2         | 2 | 9 | 5 | 1  | 4 | 1 | 0 | 0 | 0 | 0 |
|  |                  | References          |                 | Study            | y Quality |   |   |   |    |   |   |   |   |   |   |
|  |                  | 34 (3968579)        |                 |                  | 4         |   |   |   |    |   |   |   |   |   |   |
|  |                  | 35 (4070672)        |                 |                  | 4         |   |   |   |    |   |   |   |   |   |   |

Variant 4: Adult. Presenting to establish care with a past history of a treated PAVM. Follow-up (surveillance) imaging following embolization of PAVM.

|  | Appropriateness     | go <del>.</del> |                 | D 1 DD1                    |         | 3.5.11 |   |   | F | inal | Tabu | latio | ns |   |   |
|--|---------------------|-----------------|-----------------|----------------------------|---------|--------|---|---|---|------|------|-------|----|---|---|
| Procedure  | Category            | SOE             | Adults RRL      | Peds RRL                   | Rating  | Median | 1 | 2 | 3 | 4    | 5    | 6     | 7  | 8 | 9 |
| US echocardiography transthoracic with IV contrast | Usually appropriate | Strong          | O 0 mSv         | O 0 mSv<br>[ped]           | 8       | 8      | 0 | 0 | 0 | 0    | 1    | 2     | 3  | 9 | 2 |
|  | ,                   | References      |                 | Study                      | Quality |        |   |   |   |      |      |       |    |   |   |
|  |                     | 1 (24008954)    |                 |                            | 4       |        |   |   |   |      |      |       |    |   |   |
|  |                     | 45 (23429940)   |                 |                            | 3       |        |   |   |   |      |      |       |    |   |   |
|  |                     | 43 (17317734)   |                 |                            | 2       |        |   |   |   |      |      |       |    |   |   |
|  |                     | 41 (19091794)   |                 |                            | 1       |        |   |   |   |      |      |       |    |   |   |
|  |                     | 42 (1746435)    |                 |                            | 3       |        |   |   |   |      |      |       |    |   |   |
|  |                     | 44 (34322523)   |                 |                            | 2       |        |   |   |   |      |      |       |    |   |   |
|  |                     | 46 (19276509)   |                 |                            | 4       |        |   |   |   |      |      |       |    |   |   |
| CTA pulmonary arteries with IV contrast            | Usually appropriate | Limited         | ��� 1-10<br>mSv |                            | 8       | 8      | 0 | 0 | 0 | 0    | 1    | 2     | 4  | 9 | 1 |
|  |                     | References      |                 | Study                      | Quality |        |   |   |   |      |      | •     |    |   |   |
|  |                     | 31 (32255688)   |                 |                            | 4       |        |   |   |   |      |      |       |    |   |   |
|  |                     | 27 (25032812)   |                 |                            | 4       |        |   |   |   |      |      |       |    |   |   |
|  |                     | 54 (35064274)   |                 |                            | 3       |        |   |   |   |      |      |       |    |   |   |
| CTA chest with IV contrast                         | Usually appropriate | Limited         | ��� 1-10<br>mSv | ���� 3-<br>10 mSv<br>[ped] | 7       | 7      | 0 | 0 | 0 | 1    | 1    | 1     | 6  | 8 | 0 |
|  |                     | References      |                 | Study                      | Quality |        |   |   |   |      |      |       |    |   |   |
|  |                     | 10 (19553198)   |                 |                            | 4       |        |   |   |   |      |      |       |    |   |   |
|  |                     | 30 (16484354)   |                 |                            | 3       |        |   |   |   |      |      |       |    |   |   |
|  |                     | 47 (26724660)   |                 |                            | 2       |        |   |   |   |      |      |       |    |   |   |
|  |                     | 27 (25032812)   |                 |                            | 4       |        |   |   |   |      |      |       |    |   |   |
|  |                     | 29 (17116729)   |                 |                            | 3       |        |   |   |   |      |      |       |    |   |   |
| CT chest with IV contrast                          | Usually appropriate | Limited         | ��� 1-10<br>mSv | ���� 3-<br>10 mSv<br>[ped] | 7       | 7      | 0 | 0 | 0 | 0    | 1    | 3     | 12 | 1 | 0 |
|  |                     | References      |                 | Study                      | Quality |        |   |   |   |      |      |       |    |   |   |
|  |                     | 10 (19553198)   |                 |                            | 4       |        |   |   |   |      |      |       |    |   |   |

|   |                        |               |                        |                            |         |   | 1 |   |   |   |   |   |   |   |   |
|---|------------------------|---------------|------------------------|----------------------------|---------|---|---|---|---|---|---|---|---|---|---|
|   |                        | 47 (26724660) |                        |                            | 2       |   |   |   |   |   |   |   |   |   |   |
|   |                        | 27 (25032812) |                        |                            | 4       |   |   |   |   |   |   |   |   |   |   |
| ,   |                        | 29 (17116729) |                        |                            | 3       |   |   |   | _ |   |   |   |   |   |   |
| CT chest without IV contrast                        | Usually appropriate    | Strong        | <b>≎≎≎</b> 1-10<br>mSv | ���� 3-<br>10 mSv<br>[ped] | 7       | 7 | 1 | 0 | 0 | 1 | 4 | 4 | 2 | 5 | 3 |
|   |                        | References    |                        | Study                      | Quality |   |   |   |   |   |   |   |   |   |   |
|   |                        | 12 (23912618) |                        |                            | 3       |   |   |   |   |   |   |   |   |   |   |
|   |                        | 53 (26560716) |                        |                            | 2       |   |   |   |   |   |   |   |   |   |   |
|   |                        | 50 (14963181) |                        |                            | 2       |   |   |   |   |   |   |   |   |   |   |
|   |                        | 51 (1535899)  |                        |                            | 2       |   |   |   |   |   |   |   |   |   |   |
|   |                        | 49 (16415131) |                        |                            | 4       |   |   |   |   |   |   |   |   |   |   |
|   |                        | 30 (16484354) |                        |                            | 3       |   |   |   |   |   |   |   |   |   |   |
|   |                        | 47 (26724660) |                        |                            | 2       |   |   |   |   |   |   |   |   |   |   |
|   |                        | 27 (25032812) |                        |                            | 4       |   |   |   |   |   |   |   |   |   |   |
|   |                        | 48 (16371535) |                        |                            | 4       |   |   |   |   |   |   |   |   |   |   |
|   |                        | 52 (33459902) |                        |                            | 3       |   |   |   |   |   |   |   |   |   |   |
| CT chest without and with IV contrast               | Usually appropriate    | Limited       | <b>≎≎≎</b> 1-10<br>mSv | ���� 3-<br>10 mSv<br>[ped] | 7       | 7 | 1 | 0 | 1 | 0 | 3 | 3 | 9 | 0 | 0 |
|   |                        | References    |                        | Study                      | Quality |   |   |   |   |   |   |   |   |   |   |
|   |                        | 10 (19553198) |                        |                            | 4       |   |   |   |   |   |   |   |   |   |   |
|   |                        | 47 (26724660) |                        |                            | 2       |   |   |   |   |   |   |   |   |   |   |
|   |                        | 27 (25032812) |                        |                            | 4       |   |   |   |   |   |   |   |   |   |   |
|   |                        | 29 (17116729) |                        |                            | 3       |   |   |   |   |   |   |   |   |   |   |
| MRA pulmonary arteries without and with IV contrast | Usually<br>appropriate | Strong        | O 0 mSv                | O 0 mSv<br>[ped]           | 7       | 7 | 0 | 0 | 1 | 1 | 2 | 4 | 5 | 4 | 0 |
|   |                        | References    |                        | Study                      | Quality |   |   |   |   |   |   |   |   |   |   |
|   |                        | 58 (25851199) |                        |                            | 3       |   |   |   |   |   |   |   |   |   |   |
|   |                        | 56 (25012936) |                        |                            | 2       |   |   |   |   |   |   |   |   |   |   |
|   |                        | 55 (33449178) |                        |                            | 2       |   |   |   |   |   |   |   |   |   |   |
|   |                        | 57 (35914744) |                        |                            | 2       |   |   |   |   |   |   |   |   |   |   |

| Arteriography pulmonary                              | May be appropriate      | Limited             | Limited           |                  | 5         | 5 | 0 | 0 | 0  | 3 | 8 | 5 | 0 | 1 | 0 |
|--|-------------------------|---------------------|-------------------|------------------|-----------|---|---|---|----|---|---|---|---|---|---|
|  |                         | References          |                   | Study            | y Quality |   |   |   |    |   |   |   |   |   |   |
|  |                         | 10 (19553198)       |                   |                  | 4         |   |   |   |    |   |   |   |   |   |   |
| MRA chest without and with IV contrast               | May be appropriate      | Expert<br>Consensus | O 0 mSv           | O 0 mSv<br>[ped] | 5         | 5 | 0 | 0 | 1  | 3 | 5 | 2 | 5 | 1 | 0 |
| MRA pulmonary arteries without IV contrast           | Usually not appropriate | Expert<br>Consensus | O 0 mSv           | O 0 mSv<br>[ped] | 3         | 3 | 1 | 5 | 10 | 3 | 0 | 0 | 0 | 0 | 0 |
| MRA chest without IV contrast                        | Usually not appropriate | Expert<br>Consensus | O 0 mSv           | O 0 mSv<br>[ped] | 3         | 3 | 0 | 2 | 7  | 3 | 5 | 0 | 0 | 0 | 0 |
| US echocardiography transthoracic resting            | Usually not appropriate | Limited             | Limited O 0 mSv   |                  | 3         | 3 | 5 | 3 | 9  | 1 | 0 | 0 | 1 | 0 | 1 |
|  |                         | References          |                   | Study Quality    |           |   | • |   | •  |   |   |   |   |   |   |
|  |                         | 38 (8181373)        |                   | 4                |           |   |   |   |    |   |   |   |   |   |   |
| US echocardiography<br>transesophageal               | Usually not appropriate | Limited             | O 0 mSv           | O 0 mSv<br>[ped] | 3         | 3 | 6 | 3 | 9  | 0 | 0 | 1 | 0 | 1 | 0 |
|  |                         | References          |                   | Study            | y Quality |   |   |   |    |   |   |   |   |   |   |
|  |                         | 38 (8181373)        |                   |                  | 4         |   |   |   |    |   |   |   |   |   |   |
|  |                         | 39 (2212350)        |                   |                  | 3         |   |   |   |    |   |   |   |   |   |   |
| Radiography chest                                    | Usually not appropriate | Limited             | <b>⊕</b> <0.1 mSv |                  | 3         | 3 | 6 | 3 | 2  | 6 | 1 | 0 | 2 | 0 | 0 |
|  |                         | References          |                   | Study            |           |   |   |   |    |   |   |   |   |   |   |
|  |                         | 36 (14742303)       | )                 | 3                |           |   |   |   |    |   |   |   |   |   |   |
|  |                         | 37 (29141890)       |                   | 4                |           |   |   |   |    |   |   |   |   |   |   |
| US echocardiography transesophageal with IV contrast | Usually not appropriate | Limited             | O 0 mSv           | O 0 mSv<br>[ped] | 3         | 3 | 3 | 3 | 3  | 6 | 2 | 0 | 0 | 0 | 0 |
|  |                         | References          |                   | Study            | y Quality |   |   |   |    |   |   |   |   |   |   |
|  |                         | 38 (8181373)        |                   | 4                |           |   |   |   |    |   |   |   |   |   |   |
|  |                         | 40 (12848887)       | )                 | 4                |           |   |   |   |    |   |   |   |   |   |   |

Variant 5: Adult. Asymptomatic with abnormal imaging on CT or chest radiography suggestive of PAVM. Next imaging study.

|   | Appropriateness        | 207           |                   |                  |           |        |   |   | I | Final | Tabı | ılatio | ns |   |   |
|---|------------------------|---------------|-------------------|------------------|-----------|--------|---|---|---|-------|------|--------|----|---|---|
| Procedure   | Category               | SOE           | Adults RRL        | Peds RRL         | Rating    | Median | 1 | 2 | 3 | 4     | 5    | 6      | 7  | 8 | 9 |
| US echocardiography transthoracic with IV contrast  | Usually<br>appropriate | Strong        | O 0 mSv           | O 0 mSv<br>[ped] | 8         | 8      | 0 | 0 | 1 | 0     | 0    | 2      | 4  | 7 | 3 |
|   |                        | References    |                   |                  | y Quality |        |   |   |   |       |      |        |    |   |   |
|   |                        | 1 (24008954)  |                   |                  | 4         |        |   |   |   |       |      |        |    |   |   |
|   |                        | 45 (23429940) |                   |                  | 3         |        |   |   |   |       |      |        |    |   |   |
|   |                        | 43 (17317734) | 1                 |                  | 2         |        |   |   |   |       |      |        |    |   |   |
|   |                        | 41 (19091794) | 1                 |                  | 1         |        |   |   |   |       |      |        |    |   |   |
|   |                        | 42 (1746435)  |                   |                  | 3         |        |   |   |   |       |      |        |    |   |   |
|   |                        | 44 (34322523) | 1                 |                  | 2         |        |   |   |   |       |      |        |    |   |   |
| ,   |                        | 46 (19276509) |                   |                  | 4         |        |   |   |   |       |      |        |    |   |   |
| CTA pulmonary arteries with IV contrast             | Usually appropriate    | Limited       | ��� 1-10<br>mSv   |                  | 8         | 8      | 0 | 0 | 0 | 1     | 2    | 0      | 4  | 9 | 1 |
|   |                        | References    |                   | Stud             | y Quality |        |   |   |   |       |      |        |    |   |   |
|   |                        | 10 (19553198) |                   |                  | 4         |        |   |   |   |       |      |        |    |   |   |
|   |                        | 31 (32255688) |                   |                  | 4         |        |   |   |   |       |      |        |    |   |   |
|   |                        | 27 (25032812) |                   |                  | 4         |        |   |   |   |       |      |        |    |   |   |
| MRA pulmonary arteries without and with IV contrast | Usually appropriate    | Limited       | O 0 mSv           | O 0 mSv<br>[ped] | 7         | 7      | 0 | 0 | 0 | 2     | 4    | 1      | 6  | 4 | 0 |
|   |                        | References    |                   | Study Quality    |           |        |   |   |   |       |      |        |    |   |   |
|   | 32 (18356434)          |               |                   | 3                |           |        |   |   |   |       |      |        |    |   |   |
|   |                        | 33 (33202566) |                   |                  | 1         |        |   |   |   |       |      |        |    |   |   |
| Arteriography pulmonary                             | May be appropriate     | Limited       | ���� 10-30<br>mSv | 0                | 6         | 6      | 0 | 0 | 0 | 2     | 4    | 9      | 2  | 0 | 0 |
|   |                        | References    |                   | Stud             | y Quality |        |   |   |   |       |      |        |    |   |   |
|   |                        | 24 (18774307) |                   |                  | 2         |        |   |   |   |       |      |        |    |   |   |

|  |   | 25 (7956388)        |                 | 4                          |           |   |   |   |   |   |   |   |   |   |   |
|--|---|---------------------|-----------------|----------------------------|-----------|---|---|---|---|---|---|---|---|---|---|
| CTA chest with IV contrast             | May be appropriate (Disagreement)               | Expert Opinion      | ��� 1-10<br>mSv | ���� 3-<br>10 mSv<br>[ped] | 5         | 5 | 0 | 1 | 0 | 2 | 3 | 0 | 2 | 9 | 0 |
|  |   | References          |                 | Study                      | y Quality |   |   |   |   |   |   |   |   |   |   |
|  |   | 10 (19553198)       |                 |                            | 4         |   |   |   |   |   |   |   |   |   |   |
|  |   | 27 (25032812)       |                 |                            | 4         |   |   |   |   |   |   |   |   |   |   |
|  |   | 29 (17116729)       |                 |                            | 3         |   |   |   |   |   |   |   |   |   |   |
| CT chest with IV contrast              | May be<br>appropriate<br>(Disagreement)         | Expert Opinion      | ��� 1-10<br>mSv | ���� 3-<br>10 mSv<br>[ped] | 5         | 5 | 2 | 4 | 1 | 2 | 0 | 6 | 2 | 0 | 0 |
|  |   | References          |                 | Study                      | y Quality |   |   |   |   |   |   |   |   |   |   |
|  |   | 10 (19553198)       |                 |                            |           |   |   |   |   |   |   |   |   |   |   |
|  |   | 27 (25032812)       |                 |                            |           |   |   |   |   |   |   |   |   |   |   |
|  |   | 26 (31875234)       |                 |                            |           |   |   |   |   |   |   |   |   |   |   |
| CT chest without and with IV contrast  | May be<br>appropriate<br>(Disagreement)         | Expert Opinion      | ��� 1-10<br>mSv | ���� 3-<br>10 mSv<br>[ped] | 5         | 5 | 2 | 4 | 2 | 2 | 2 | 5 | 0 | 0 | 0 |
|  |   | References          |                 | Study                      |           |   |   |   |   |   |   |   |   |   |   |
|  |   | 10 (19553198)       |                 |                            |           |   |   |   |   |   |   |   |   |   |   |
|  |   | 24 (18774307)       |                 |                            |           |   |   |   |   |   |   |   |   |   |   |
|  |   | 27 (25032812)       |                 |                            |           |   | 1 |   | _ |   |   |   |   |   |   |
| MRA chest without and with IV contrast | May be appropriate                              | Expert<br>Consensus | O 0 mSv         | O 0 mSv<br>[ped]           | 5         | 5 | 0 | 1 | 0 | 2 | 6 | 0 | 7 | 1 | 0 |
| CT chest without IV contrast           | Γ chest without IV contrast  May be appropriate |                     | ��� 1-10<br>mSv | ���� 3-<br>10 mSv<br>[ped] | 4         | 4 | 2 | 4 | 2 | 5 | 2 | 2 | 0 | 0 | 0 |
|  |   | References          |                 | Study                      |           |   |   |   |   |   |   |   |   |   |   |
|  |   | 10 (19553198)       |                 |                            |           |   |   |   |   |   |   |   |   |   |   |
|  |   | 28 (8184042)        |                 |                            |           |   |   |   |   |   |   |   |   |   |   |
|  |   | 27 (25032812)       |                 |                            |           | 1 | 1 | 1 |   | 1 |   |   |   |   |   |
| MRA chest without IV contrast          | May be appropriate                              | Expert<br>Consensus | O 0 mSv         | O 0 mSv<br>[ped]           | 4         | 4 | 0 | 3 | 0 | 7 | 7 | 0 | 0 | 0 | 0 |

| MRA pulmonary arteries without IV contrast           | Usually<br>approp |              | Expert<br>Consensus O 0 mSv |               | , | O 0 mSv<br>[ped] | 3 | 3 | 1 | 6 | 10 | 2 | 0 | 0 | 0 | 0 | 0 |
|--|-------------------|--------------|-----------------------------|---------------|---|------------------|---|---|---|---|----|---|---|---|---|---|---|
| US echocardiography transthoracic resting            | Usually<br>approp |              | Limited O 0 mSv             |               | , | O 0 mSv<br>[ped] | 3 | 3 | 6 | 3 | 6  | 2 | 1 | 0 | 2 | 0 | 0 |
|  |                   | References   |                             | Study Quality |   |                  |   |   |   |   |    |   |   |   |   |   |   |
|  |                   |              | 38 (8181373)                |               |   |                  |   |   |   |   |    |   |   |   |   |   |   |
| US echocardiography transesophageal with IV contrast | Usually<br>approp |              | Limited                     | O 0 mSv       | , | O 0 mSv<br>[ped] | 3 | 3 | 3 | 3 | 3  | 4 | 4 | 0 | 0 | 0 | 0 |
|  |                   | References   |                             | Study Quality |   |                  |   |   |   |   |    |   |   |   |   |   |   |
|  |                   |              | 38 (8181373)                |               | 4 |                  |   |   |   |   |    |   |   |   |   |   |   |
|  |                   |              | 40 (12848887)               |               |   |                  |   |   |   |   |    |   |   |   |   |   |   |
| US echocardiography<br>transesophageal               | Usually<br>approp |              | Limited                     | O 0 mSv       | , | O 0 mSv<br>[ped] | 2 | 2 | 8 | 4 | 4  | 2 | 1 | 1 | 0 | 0 | 0 |
|  |                   | References   |                             | Study Quality |   |                  |   |   |   |   |    |   |   |   |   |   |   |
|  |                   | 38 (8181373) |                             |               |   |                  | 4 |   |   |   |    |   |   |   |   |   |   |
|  |                   | 39 (2212350) |                             |               |   |                  | 3 |   |   |   |    |   |   |   |   |   |   |

## **Appendix Key**

A more complete discussion of the items presented below can be found by accessing the supporting documents at the designated hyperlinks.

**Appropriateness Category**: The panel's recommendation for a procedure based on the assessment of the risks and benefits of performing the procedure for the specified clinical scenario.

**SOE**: Strength of Evidence. The assessment of the amount and quality of evidence found in the peer reviewed medical literature for an appropriateness recommendation.

- **References:** The citation number and PMID for the reference(s) associated with the recommendation.
- Study Quality: The assessment of the quality of an individual reference based on the number of study quality elements described in the reference.

RRL: Relative Radiation Level. A population based assessment of the amount of radiation a typical patient may be exposed to during the specified procedure.

Rating: The final rating (1-9 scale) for the procedure as determined by the panel during rating rounds.

Median: The median rating (1-9 scale) for the procedure as determined by the panel during rating rounds.

Final tabulations: A histogram showing the number of panel members who rated the procedure as noted in the column heading (ie, 1, 2, 3, etc.).

Additional supporting documents about the AC methodology and processes can be found at www.acr.org/ac.