American College of Radiology
ACR Appropriateness Criteria®

Intensive Care Unit Patients

Variant 1: Admission or transfer to intensive care unit. Initial imaging.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations 1	2	3	4	5	6	7	8	9
Radiography chest portable	Usually appropriate	Strong	☢ <0.1 mSv		8	8	0	0	0	0	3	2	0	2	4

References	Study Quality
9 (26350068)	4
6 (24708581)	4
11 (23956264)	4
8 (22541022)	Good
7 (17599499)	4
10 (26005059)	2

US chest	May be appropriate (Disagreement)	Expert Opinion	O 0 mSv	O 0 mSv [ped]	5	5	2	3	1	1	4	1	1	0	0

References	Study Quality
5 (29601314)	4
12 (25852759)	Good
3 (24158410)	4

Variant 2: Stable intensive care unit patient. No change in clinical status. Initial imaging.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations 1	2	3	4	5	6	7	8	9

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Radiography chest portable	May be appropriate (Disagreement)	Expert Opinion	☢ <0.1 mSv		5	5	2	5	3	0	1	1	0	0	1

References	Study Quality
13 (16420655)	3
6 (24708581)	4
11 (23956264)	4
8 (22541022)	Good
7 (17599499)	4
14 (29614962)	4
15 (21704293)	3

US chest	Usually not appropriate	Moderate	O 0 mSv	O 0 mSv [ped]	2	2	6	7	0	0	0	0	0	0	0

References	Study Quality
5 (29601314)	4
12 (25852759)	Good
3 (24158410)	4

Variant 3: Intensive care unit patient with clinically worsening condition. Initial imaging.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Radiography chest portable	Usually appropriate	Limited	☢ <0.1 mSv		9	9	0	0	0	0	0	0	0	3	8

References	Study Quality
5 (29601314)	4
16 (27375379)	2
6 (24708581)	4

US chest	May be appropriate (Disagreement)	Expert Opinion	O 0 mSv	O 0 mSv [ped]	5	5	2	0	0	2	6	2	0	1	0

References	Study Quality
5 (29601314)	4
18 (29076936)	2
22 (28984662)	1
21 (29282107)	4
16 (27375379)	2
20 (27784331)	4
19 (26836896)	2
23 (26325623)	2
12 (25852759)	Good
17 (23585400)	4

Variant 4: Intensive care unit patient following support device placement. Initial imaging.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Radiography chest portable	Usually appropriate	Strong	☢ <0.1 mSv		9	9	0	0	0	0	1	0	2	2	6

References	Study Quality
32 (4053711)	3
33 (8986482)	2
24 (1424692)	2
26 (8411291)	4
28 (6611930)	4
29 (3759495)	3
30 (2509149)	4
31 (9172857)	4
27 (9011682)	4

25 (4006492)	3
34 (8115893)	4
40 (7214940)	4
38 (27035241)	4
36 (24916754)	4
35 (23940860)	2
37 (28600640)	2
39 (29627658)	4
41 (-3149140)	4

US chest	May be appropriate (Disagreement)	Expert Opinion	O 0 mSv	O 0 mSv [ped]	5	5	3	3	1	2	1	3	0	0	0

References	Study Quality
48 (28443388)	2
49 (28123616)	2
51 (27922877)	Good
47 (28538437)	2
46 (28422778)	2
50 (27847699)	2
45 (23242559)	2
42 (25537734)	Good
43 (23961455)	2
53 (22691418)	2
52 (28298944)	2

Variant 5: Intensive care unit patient. Post chest tube or mediastinal tube removal. Initial imaging.

Procedure	Appropriateness Category	SOE	Adults RRL	Peds RRL	Rating	Median	Final Tabulations								
							1	2	3	4	5	6	7	8	9
Radiography chest portable	May be appropriate (Disagreement)	Expert Opinion	☢ <0.1 mSv		5	5	0	1	1	0	6	1	3	1	0

References	Study Quality
32 (4053711)	3
58 (12643411)	3
59 (11819085)	4
60 (19408798)	3
28 (6611930)	4
57 (18539477)	4
55 (17994222)	1
25 (4006492)	3
54 (22392935)	4
56 (21701019)	4

US chest	Usually not appropriate	Limited	O 0 mSv	O 0 mSv [ped]	2	2	4	4	3	2	0	0	0	0	0

References	Study Quality
44 (22942927)	4

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.**