# American College of Radiology ACR Appropriateness Criteria<sup>®</sup>

# **Cerebrovascular Disease-Child**

Variant 1: Child age older than 6 months. Emergent imaging for clinical presentation suggestive of acute nonsickle-cell related stroke. New focal fixed or worsening neurologic defect lasting less than 24 hours from last seen normal state. No contraindications to emergent intervention. Initial imaging.

|                              | Appropri       | iateness       |               |                 |                  |            |        |   |   |   | Final | Tabı | ilatio | ns |   |    |
|------------------------------|----------------|----------------|---------------|-----------------|------------------|------------|--------|---|---|---|-------|------|--------|----|---|----|
| Procedure                    | Categ          | gory           | SOE           | Adults RRI      | L Peds RRI       | Rating     | Median | 1 | 2 | 3 | 4     | 5    | 6      | 7  | 8 | 9  |
| MRI head without IV contrast | Usua<br>approp | ally<br>priate | Limited       | O 0 mSv         | O 0 mSv<br>[ped] | 9          | 9      | 0 | 1 | 0 | 0     | 0    | 0      | 1  | 2 | 15 |
|                              |                |                | References    |                 | Stu              | dy Quality |        |   |   |   |       |      |        |    |   |    |
|                              |                |                | 20 (19039041) |                 |                  | 4          |        |   |   |   |       |      |        |    |   |    |
|                              |                |                | 6 (20054007)  |                 |                  | 4          |        |   |   |   |       |      |        |    |   |    |
|                              |                |                | 18 (19216043) |                 |                  | 4          |        |   |   |   |       |      |        |    |   |    |
|                              |                |                | 16 (20445969) |                 |                  | 4          |        |   |   |   |       |      |        |    |   |    |
|                              |                |                | 17 (20113901) |                 | 4                |            |        |   |   |   |       |      |        |    |   |    |
|                              |                |                | 19 (20625171) |                 |                  | 4          |        |   |   |   |       |      |        |    |   |    |
|                              |                |                | 22 (12743660) |                 |                  | 2          |        |   |   |   |       |      |        |    |   |    |
|                              |                |                | 23 (21975501) |                 |                  | 4          |        |   |   |   |       |      |        |    |   |    |
|                              |                |                | 24 (25063989) |                 |                  | 3          |        |   |   |   |       |      |        |    |   |    |
|                              |                |                | 21 (16841210) |                 |                  | 3          |        |   |   |   |       |      |        |    |   |    |
|                              |                |                | 25 (28705823) |                 |                  | 4          |        |   | _ |   |       | _    |        |    |   |    |
| CT head without IV contrast  | Usua<br>approp | ally<br>priate | Limited       | ତତତ 1-10<br>mSv | )                | 8          | 8      | 1 | 0 | 0 | 0     | 0    | 2      | 4  | 6 | 6  |
|                              |                |                | References    | Stu             | dy Quality       |            |        |   |   |   |       |      |        |    |   |    |
|                              |                |                | 16 (20445969) |                 |                  | 4          |        |   |   |   |       |      |        |    |   |    |

|  |                |              |               |                 |                            |           | 1 | - | 1 | 1 | 1 | 1  | 1  | 1 |   |   |
|--|----------------|--------------|---------------|-----------------|----------------------------|-----------|---|---|---|---|---|----|----|---|---|---|
| MRA head without IV contrast           | Usua<br>approp | lly<br>riate | Limited       | O 0 mSv         | O 0 mSv<br>[ped]           | 8         | 8 | 2 | 0 | 0 | 0 | 0  | 2  | 3 | 6 | 5 |
|  |                |              | References    |                 | Stud                       | y Quality |   |   |   |   |   |    |    |   |   |   |
|  |                |              | 17 (20113901) |                 |                            | 4         |   |   |   |   |   |    |    |   |   |   |
|  |                |              | 26 (15703900) |                 |                            | 4         |   |   |   |   |   |    |    |   |   |   |
|  |                |              | 27 (21220720) |                 |                            | 3         |   |   |   |   |   |    |    |   |   |   |
| CTA head with IV contrast              | May<br>approp  | be<br>riate  | Limited       | ତତତ 1-10<br>mSv | ଡଡଡଡ 3-<br>10 mSv<br>[ped] | 6         | 6 | 1 | 0 | 0 | 0 | 7  | 10 | 0 | 0 | 0 |
|  |                |              | References    |                 | Stud                       | y Quality |   |   |   |   |   |    |    |   |   |   |
|  |                |              | 17 (20113901) |                 |                            | 4         |   |   |   |   |   |    |    |   |   |   |
| MRI head perfusion with IV contrast    | May<br>approp  | be<br>riate  | Limited       | O 0 mSv         | O 0 mSv<br>[ped]           | 5         | 5 | 2 | 0 | 1 | 0 | 7  | 7  | 1 | 0 | 0 |
|  |                |              | References    |                 | Study                      | y Quality |   |   |   |   | • | •  | •  | • |   |   |
|  |                |              | 29 (17066483) |                 |                            | 3         |   |   |   |   |   |    |    |   |   |   |
|  |                |              | 17 (20113901) |                 |                            | 4         |   |   |   |   |   |    |    |   |   |   |
|  |                |              | 19 (20625171) |                 |                            | 4         |   |   |   |   |   |    |    |   |   |   |
| MRI head perfusion without IV contrast | May<br>approp  | be<br>riate  | Limited       | O 0 mSv         | O 0 mSv<br>[ped]           | 5         | 5 | 0 | 1 | 0 | 2 | 13 | 3  | 0 | 1 | 0 |
|  |                |              | References    |                 | Stud                       | y Quality |   |   |   |   |   |    |    |   |   |   |
|  |                |              | 29 (17066483) |                 |                            | 3         |   |   |   |   |   |    |    |   |   |   |
|  |                |              | 17 (20113901) |                 |                            | 4         |   |   |   |   |   |    |    |   |   |   |
|  |                |              | 19 (20625171) |                 |                            | 4         |   |   |   |   |   |    |    |   |   |   |
| MRI head without and with IV contrast  | May<br>approp  | be<br>riate  | Limited       | O 0 mSv         | O 0 mSv<br>[ped]           | 4         | 4 | 1 | 0 | 0 | 9 | 5  | 2  | 1 | 0 | 0 |
|  |                |              | References    |                 | Study                      | y Quality |   |   |   |   |   |    |    |   |   |   |
|  |                |              | 20 (19039041) |                 |                            | 4         |   |   |   |   |   |    |    |   |   |   |
|  |                |              | 6 (20054007)  |                 |                            | 4         |   |   |   |   |   |    |    |   |   |   |
|  |                |              | 18 (19216043) |                 |                            | 4         |   |   |   |   |   |    |    |   |   |   |
|  |                |              | 16 (20445969) |                 |                            | 4         |   |   |   |   |   |    |    |   |   |   |
|  |                |              | 17 (20113901) |                 |                            | 4         |   |   |   |   |   |    |    |   |   |   |

|                                      |                  |                 | 19 (20625171) |                            |                             | 4         |   |    |   |   |   |   |   |   |   |   |
|--------------------------------------|------------------|-----------------|---------------|----------------------------|-----------------------------|-----------|---|----|---|---|---|---|---|---|---|---|
|                                      |                  |                 | 22 (12743660) |                            |                             | 2         |   |    |   |   |   |   |   |   |   |   |
|                                      |                  |                 | 23 (21975501) |                            |                             | 4         |   |    |   |   |   |   |   |   |   |   |
|                                      |                  |                 | 24 (25063989) |                            |                             | 3         |   |    |   |   |   |   |   |   |   |   |
|                                      |                  |                 | 21 (16841210) |                            |                             | 3         |   |    |   |   |   |   |   |   |   |   |
|                                      |                  |                 | 25 (28705823) |                            |                             | 4         |   |    | - |   | - | - | - | _ |   |   |
| MRA head with IV contrast            | Usuall<br>approp | y not<br>oriate | Limited       | O 0 mSv                    | O 0 mSv<br>[ped]            | 3         | 3 | 6  | 2 | 6 | 2 | 1 | 1 | 0 | 0 | 0 |
|                                      |                  |                 | References    |                            | Study                       | y Quality |   |    |   |   |   |   |   |   |   |   |
|                                      |                  |                 | 17 (20113901) |                            |                             | 4         |   |    |   |   |   |   |   |   |   |   |
|                                      |                  |                 | 26 (15703900) |                            |                             | 4         |   |    |   |   |   |   |   |   |   |   |
|                                      |                  |                 | 27 (21220720) |                            |                             | 3         |   |    |   |   |   |   |   |   |   |   |
| CT head without and with IV contrast | Usuall           | y not<br>oriate | Limited       | <del>ଷଷଷ</del> 1-10<br>mSv | &&&& 3-<br>10 mSv<br>[ped]  | 2         | 2 | 9  | 4 | 1 | 2 | 1 | 0 | 1 | 0 | 1 |
|                                      |                  |                 | References    |                            | Study                       | y Quality |   |    |   |   |   |   |   |   |   |   |
|                                      |                  |                 | 16 (20445969) |                            |                             | 4         |   |    | - |   | - | - | - | - |   |   |
| CT head with IV contrast             | Usuall<br>approp | y not<br>oriate | Limited       | <del>ଷଷଷ</del> 1-10<br>mSv | ��� 0.3-<br>3 mSv<br>[ped]  | 1         | 1 | 10 | 3 | 3 | 0 | 1 | 0 | 1 | 0 | 1 |
|                                      |                  |                 | References    |                            | Study                       | y Quality |   |    |   |   |   |   |   |   |   |   |
|                                      |                  |                 | 16 (20445969) |                            |                             | 4         |   |    |   |   |   |   |   |   |   |   |
| CT head perfusion with IV contrast   | Usuall<br>approp | y not<br>oriate | Limited       | ≎≎≎ 1-10<br>mSv            |                             | 1         | 1 | 10 | 2 | 5 | 1 | 0 | 0 | 0 | 0 | 0 |
|                                      |                  |                 | References    |                            | Study                       | y Quality |   |    |   |   |   |   |   |   |   |   |
|                                      | _                |                 | 28 (22209434) |                            |                             | 4         |   |    | - |   | - | - | - | _ |   |   |
| Arteriography cervicocerebral        | Usuall<br>approp | y not<br>priate | Limited       | ତତତ 1-10<br>mSv            | ଡେଡେଡ 3-<br>10 mSv<br>[ped] | 1         | 1 | 12 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
|                                      |                  |                 | References    |                            | Study                       | y Quality |   |    |   |   |   |   |   |   |   |   |
|                                      |                  |                 | 30 (24483252) |                            |                             | 4         |   |    |   |   |   |   |   |   |   |   |
|                                      |                  |                 | 31 (9799310)  |                            |                             | 4         |   |    |   |   |   |   |   |   |   |   |

| MRI head with IV contrast | Usuall<br>approp | y not<br>priate | Limited       | O 0 mSv | O 0 mSv<br>[ped] | 1       | 1 | 10 | 3 | 4 | 1 | 0 | 0 | 0 | 0 | 0 |
|---------------------------|------------------|-----------------|---------------|---------|------------------|---------|---|----|---|---|---|---|---|---|---|---|
|                           |                  |                 | References    |         | Study            | Quality |   |    |   |   |   |   |   |   |   |   |
|                           |                  |                 | 20 (19039041) |         |                  | 4       |   |    |   |   |   |   |   |   |   |   |
|                           |                  |                 | 6 (20054007)  |         |                  | 4       |   |    |   |   |   |   |   |   |   |   |
|                           |                  |                 | 18 (19216043) |         |                  | 4       |   |    |   |   |   |   |   |   |   |   |
|                           |                  |                 | 16 (20445969) |         |                  | 4       |   |    |   |   |   |   |   |   |   |   |
|                           |                  |                 | 17 (20113901) |         |                  | 4       |   |    |   |   |   |   |   |   |   |   |
|                           |                  |                 | 19 (20625171) |         |                  | 4       |   |    |   |   |   |   |   |   |   |   |
|                           |                  |                 | 22 (12743660) |         |                  | 2       |   |    |   |   |   |   |   |   |   |   |
|                           |                  |                 | 23 (21975501) |         |                  | 4       |   |    |   |   |   |   |   |   |   |   |
|                           |                  |                 | 24 (25063989) |         |                  | 3       |   |    |   |   |   |   |   |   |   |   |
|                           |                  |                 | 21 (16841210) |         |                  | 3       |   |    |   |   |   |   |   |   |   |   |
|                           |                  |                 | 25 (28705823) |         |                  | 4       |   |    |   |   |   |   |   |   |   |   |

# Variant 2: Child. Clinical presentation suggestive of acute stroke, not a candidate for emergent intervention. Initial imaging.

|                              | Appropr        | iateness       |                                |           |    |                  |         |        |   |   | F | inal | Tabu | latio | ns |   |    |
|------------------------------|----------------|----------------|--------------------------------|-----------|----|------------------|---------|--------|---|---|---|------|------|-------|----|---|----|
| Procedure                    | Categ          | gory           | SOE                            | Adults RR | 8L | Peds RRL         | Rating  | Median | 1 | 2 | 3 | 4    | 5    | 6     | 7  | 8 | 9  |
| MRI head without IV contrast | Usua<br>approj | ally<br>priate | Limited                        | O 0 mSv   | /  | O 0 mSv<br>[ped] | 9       | 9      | 0 | 1 | 0 | 0    | 0    | 0     | 1  | 2 | 15 |
|                              |                |                | References                     |           |    | Study            | Quality |        |   |   |   |      |      |       |    |   |    |
|                              |                |                | 20 (19039041)                  |           |    |                  | 4       |        |   |   |   |      |      |       |    |   |    |
|                              |                |                | 6 (20054007)                   |           |    |                  | 4       |        |   |   |   |      |      |       |    |   |    |
|                              |                |                | 18 (19216043)                  |           |    |                  | 4       |        |   |   |   |      |      |       |    |   |    |
|                              |                |                | 16 (20445969)                  |           |    |                  | 4       |        |   |   |   |      |      |       |    |   |    |
|                              |                |                | 16 (20445969)<br>17 (20113901) |           |    |                  | 4       |        |   |   |   |      |      |       |    |   |    |
|                              |                |                | 19 (20625171)                  |           |    |                  | 4       |        |   |   |   |      |      |       |    |   |    |
|                              |                |                | 22 (12743660)                  |           |    |                  | 2       |        |   |   |   |      |      |       |    |   |    |
|                              |                |                | 23 (21975501)                  |           |    |                  | 4       |        |   |   |   |      |      |       |    |   |    |

|                                       |                |              | 24 (25063989) |                            |                           | 3             |       |   |   |   |   |    |   |   |   |   |   |
|---------------------------------------|----------------|--------------|---------------|----------------------------|---------------------------|---------------|-------|---|---|---|---|----|---|---|---|---|---|
|                                       |                |              | 21 (16841210) |                            |                           | 3             |       |   |   |   |   |    | - |   |   |   |   |
| CT head without IV contrast           | Usua<br>approp | lly<br>riate | Limited       | ଝେଝ 1-10<br>mSv            | ) & & & 0<br>3 mS<br>[ped | .3-<br>V<br>] | 8     | 8 | 1 | 0 | 1 | 0  | 2 | 1 | 3 | 6 | 5 |
|                                       |                |              | References    |                            |                           | Study Qua     | lity  |   |   |   |   |    |   |   |   |   |   |
|                                       |                |              | 16 (20445969) |                            |                           | 4             |       |   |   |   |   |    | - | - |   |   |   |
| MRA head without IV contrast          | Usua<br>approp | lly<br>riate | Limited       | O 0 mSv                    | O 0 m<br>[ped             | Sv<br>]       | 7     | 7 | 1 | 0 | 0 | 0  | 2 | 1 | 7 | 3 | 4 |
|                                       |                |              | References    |                            |                           | Study Qua     | lity  |   |   |   |   |    |   |   |   |   |   |
|                                       |                |              | 17 (20113901) |                            |                           | 4             |       |   |   |   |   |    |   |   |   |   |   |
|                                       |                |              | 26 (15703900) |                            |                           | 4             |       |   |   |   |   |    |   |   |   |   |   |
|                                       | _              |              | 27 (21220720) |                            |                           | 3             |       |   |   |   |   | -  |   |   |   |   |   |
| CTA head with IV contrast             | May<br>approp  | be<br>riate  | Limited       | ) 🕹 🕸 🕸 🕸<br>10 mS<br>[ped | 3-<br>Sv<br>1             | 5             | 5     | 1 | 0 | 0 | 1 | 12 | 4 | 0 | 0 | 0 |   |
|                                       |                |              | References    |                            | Study Qua                 | lity          |       |   |   |   |   |    |   |   |   |   |   |
|                                       |                |              | 17 (20113901) |                            |                           | 4             |       |   |   |   |   |    | - |   |   |   |   |
| MRI head without and with IV contrast | May<br>approp  | be<br>riate  | Limited       | O 0 mSv                    | O 0 m<br>[ped             | Sv<br>]       | 5     | 5 | 1 | 0 | 0 | 7  | 5 | 3 | 1 | 1 | 0 |
|                                       |                |              | References    |                            |                           | Study Qua     | ality |   |   |   |   |    |   |   |   |   |   |
|                                       |                |              | 20 (19039041) |                            |                           | 4             |       |   |   |   |   |    |   |   |   |   |   |
|                                       |                |              | 6 (20054007)  |                            |                           | 4             |       |   |   |   |   |    |   |   |   |   |   |
|                                       |                |              | 18 (19216043) |                            |                           | 4             |       |   |   |   |   |    |   |   |   |   |   |
|                                       |                |              | 16 (20445969) |                            |                           | 4             |       |   |   |   |   |    |   |   |   |   |   |
|                                       |                |              | 17 (20113901) |                            |                           | 4             |       |   |   |   |   |    |   |   |   |   |   |
|                                       |                |              | 19 (20625171) |                            |                           | 4             |       |   |   |   |   |    |   |   |   |   |   |
|                                       |                |              | 22 (12743660) |                            | 2                         |               |       |   |   |   |   |    |   |   |   |   |   |
|                                       |                |              | 23 (21975501) |                            | 4                         |               |       |   |   |   |   |    |   |   |   |   |   |
|                                       |                |              | 24 (25063989) |                            | 3                         |               |       |   |   |   |   |    |   |   |   |   |   |
|                                       |                |              | 21 (16841210) |                            | 3                         |               |       |   |   |   |   |    |   |   |   |   |   |

| MRI head perfusion with IV contrast    | May<br>approp     | be<br>priate    | Limited       | O 0 mSv | O 0 mSv<br>[ped] | 5       | 5 | 1 | 1 | 0 | 5 | 7  | 3 | 1 | 0 | 0 |
|--|-------------------|-----------------|---------------|---------|------------------|---------|---|---|---|---|---|----|---|---|---|---|
|  |                   |                 | References    |         | Study            | Quality |   |   |   |   |   |    |   |   |   |   |
|  |                   |                 | 29 (17066483) |         |                  | 3       |   |   |   |   |   |    |   |   |   |   |
|  |                   |                 | 17 (20113901) |         |                  | 4       |   |   |   |   |   |    |   |   |   |   |
|  |                   |                 | 19 (20625171) |         |                  | 4       |   |   |   |   |   |    |   |   |   |   |
| MRI head perfusion without IV contrast | May<br>approp     | be<br>priate    | Limited       | O 0 mSv | O 0 mSv<br>[ped] | 5       | 5 | 1 | 1 | 0 | 2 | 11 | 3 | 1 | 1 | 0 |
|  |                   |                 | References    |         | Study            | Quality |   |   |   |   |   |    |   |   |   |   |
|  |                   |                 | 29 (17066483) |         |                  | 3       |   |   |   |   |   |    |   |   |   |   |
|  |                   |                 | 17 (20113901) |         |                  | 4       |   |   |   |   |   |    |   |   |   |   |
|  | _                 |                 | 19 (20625171) |         |                  | 4       |   |   |   |   |   | 1  |   |   |   |   |
| MRA head with IV contrast              | Usually<br>approp | y not<br>oriate | Limited       | O 0 mSv | O 0 mSv<br>[ped] | 2       | 2 | 7 | 4 | 4 | 2 | 1  | 0 | 0 | 0 | 0 |
|  |                   |                 | References    |         | Study            | Quality |   |   |   |   |   |    |   |   |   |   |
|  |                   |                 | 17 (20113901) |         |                  | 4       |   |   |   |   |   |    |   |   |   |   |
|  |                   |                 | 26 (15703900) |         |                  | 4       |   |   |   |   |   |    |   |   |   |   |
|  |                   |                 | 27 (21220720) |         |                  | 3       |   |   | - |   |   |    |   |   |   |   |
| MRI head with IV contrast              | Usually<br>approp | y not<br>oriate | Limited       | O 0 mSv | O 0 mSv<br>[ped] | 2       | 2 | 8 | 4 | 5 | 1 | 0  | 0 | 0 | 0 | 0 |
|  |                   |                 | References    |         | Study            | Quality |   |   |   |   |   |    |   |   |   |   |
|  |                   |                 | 20 (19039041) |         |                  | 4       |   |   |   |   |   |    |   |   |   |   |
|  |                   |                 | 6 (20054007)  |         |                  | 4       |   |   |   |   |   |    |   |   |   |   |
|  |                   |                 | 18 (19216043) |         |                  | 4       |   |   |   |   |   |    |   |   |   |   |
|  |                   |                 | 16 (20445969) |         |                  | 4       |   |   |   |   |   |    |   |   |   |   |
|  |                   |                 | 17 (20113901) |         |                  | 4       |   |   |   |   |   |    |   |   |   |   |
|  |                   |                 | 19 (20625171) |         |                  | 4       |   |   |   |   |   |    |   |   |   |   |
|  |                   |                 | 22 (12743660) |         |                  | 2       |   |   |   |   |   |    |   |   |   |   |
|  |                   |                 | 23 (21975501) |         |                  | 4       |   |   |   |   |   |    |   |   |   |   |
|  |                   |                 | 24 (25063989) |         |                  | 3       |   |   |   |   |   |    |   |   |   |   |
|  |                   |                 | 21 (16841210) |         |                  | 3       |   |   |   |   |   |    |   |   |   |   |

| CT head with IV contrast             | Usuall<br>approp | y not<br>oriate | Limited       | ≎≎≎≎ 1-10<br>mSv | && & 0.3-<br>3 mSv<br>[ped] | 1         | 1   | 11 | 3 | 2 | 0 | 1 | 1 | 0 | 0 | 1 |
|--------------------------------------|------------------|-----------------|---------------|------------------|-----------------------------|-----------|-----|----|---|---|---|---|---|---|---|---|
|                                      |                  |                 | References    |                  | Study                       | V Quality |     |    |   |   |   |   |   |   |   |   |
|                                      |                  |                 | 16 (20445969) |                  |                             | 4         |     |    |   |   |   |   |   |   |   |   |
| CT head without and with IV contrast | Usuall<br>approp | y not<br>oriate | Limited       | ତତତ 1-10<br>mSv  | ଢଢଢଢ 3-<br>10 mSv<br>[ped]  | 1         | 1   | 13 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
|                                      |                  |                 | References    |                  | Study                       | Quality   |     |    |   |   |   |   |   |   |   |   |
|                                      |                  |                 | 16 (20445969) |                  |                             | 4         |     |    |   |   |   |   |   |   |   |   |
| CT head perfusion with IV contrast   | Usuall<br>approp | y not<br>oriate | Limited       | ଷଷଷ 1-10<br>mSv  |                             | 1         | 1   | 12 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
|                                      |                  |                 | References    |                  | Study                       | v Quality |     |    |   |   |   |   |   |   |   |   |
|                                      |                  |                 | 28 (22209434) |                  |                             | 4         |     |    |   |   |   |   |   |   |   |   |
| Arteriography cervicocerebral        | Usuall<br>approp | y not<br>oriate | Limited       | ֎֎֎ 1-10<br>mSv  | ≎≎≎≎ 3-<br>10 mSv<br>[ped]  | 1         | 1   | 13 | 3 | 2 | 0 | 0 | 0 | 0 | 1 | 0 |
|                                      |                  |                 | References    |                  | Study                       | Quality   |     |    |   |   |   |   |   |   |   |   |
|                                      |                  |                 | 30 (24483252) |                  | 4                           |           |     |    |   |   |   |   |   |   |   |   |
|                                      |                  |                 | 31 (9799310)  |                  | 4                           |           |     |    |   |   |   |   |   |   |   |   |
| US duplex Doppler transcranial       | Usuall<br>approp | y not<br>oriate | Limited       | O 0 mSv          | O 0 mSv<br>[ped]            | 1         | n/a | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Variant 3: Child. Clinical presentation suggestive of acute stroke, known or suspected arteriopathy, or moyamoya. Not a candidate for emergent treatment. Initial imaging.

|                              | Appropriateness        |                     |            |                  | D       |        |   |   | F | 'inal ' | Tabu | latio | ns |   |    |
|------------------------------|------------------------|---------------------|------------|------------------|---------|--------|---|---|---|---------|------|-------|----|---|----|
| Procedure                    | Category               | SOE                 | Adults RRL | Peds RRL         | Rating  | Median | 1 | 2 | 3 | 4       | 5    | 6     | 7  | 8 | 9  |
| MRA head without IV contrast | Usually<br>appropriate | Expert<br>Consensus | O 0 mSv    | O 0 mSv<br>[ped] | 9       | 9      | 1 | 0 | 0 | 0       | 0    | 3     | 1  | 3 | 10 |
| MRI head without IV contrast | Usually<br>appropriate | Moderate            | O 0 mSv    | O 0 mSv<br>[ped] | 9       | 9      | 1 | 0 | 0 | 0       | 0    | 0     | 2  | 1 | 15 |
|                              |                        | References          |            | Study            | Quality |        |   |   |   |         |      |       |    |   |    |

|  |               |              | 45 (15703904)       |                 |                            | 4       |   |   |   |   |   |    |   |   |   |         |
|--|---------------|--------------|---------------------|-----------------|----------------------------|---------|---|---|---|---|---|----|---|---|---|---------|
|  |               |              | 44 (24558166)       |                 |                            | М       |   |   |   |   |   |    |   |   |   |         |
|  |               |              | 15 (29364767)       |                 |                            | 1       |   |   |   |   |   |    |   |   |   |         |
| CTA head with IV contrast              | May<br>approp | be<br>oriate | Expert<br>Consensus | ଝେଝ 1-10<br>mSv | &&&& 3-<br>10 mSv<br>[ped] | 6       | 6 | 1 | 0 | 0 | 1 | 6  | 8 | 2 | 0 | 0       |
| CT head without IV contrast            | May<br>approp | be<br>oriate | Limited             | ଝେଝ 1-10<br>mSv | &&& 0.3-<br>3 mSv<br>[ped] | 6       | 6 | 0 | 0 | 0 | 0 | 6  | 9 | 2 | 0 | 1       |
|  |               |              | References          |                 | Study                      | Quality |   |   |   |   |   |    |   |   |   |         |
|  |               |              | 43 (9885601)        |                 |                            | 2       |   |   | - |   |   |    | - |   |   |         |
| MRI head without and with IV contrast  | May<br>approp | be<br>priate | Moderate            | O 0 mSv         | O 0 mSv<br>[ped]           | 5       | 5 | 1 | 0 | 0 | 4 | 8  | 3 | 2 | 0 | 0       |
|  |               |              | References          |                 | Study                      | Quality |   |   |   |   |   |    |   |   |   |         |
|  |               |              | 45 (15703904)       |                 |                            | 4       |   |   |   |   |   |    |   |   |   |         |
|  |               |              | 44 (24558166)       |                 |                            | М       |   |   |   |   |   |    |   |   |   |         |
|  |               |              | 15 (29364767)       |                 |                            | 1       |   |   |   |   |   |    |   |   |   |         |
| MRI head perfusion with IV contrast    | May<br>approp | be<br>priate | Limited             | O 0 mSv         | O 0 mSv<br>[ped]           | 5       | 5 | 1 | 0 | 0 | 2 | 8  | 5 | 1 | 1 | 0       |
|  |               |              | References          |                 | Study                      | Quality |   |   |   |   |   |    |   |   |   |         |
|  |               |              | 39 (22462697)       |                 |                            | 4       |   |   |   |   |   |    |   |   |   |         |
|  |               |              | 46 (24335546)       |                 |                            | 2       |   |   |   |   |   |    |   |   |   |         |
|  |               |              | 48 (24335813)       |                 |                            | 4       |   |   |   |   |   |    |   |   |   |         |
|  |               |              | 49 (24055185)       |                 |                            | 3       |   |   |   |   |   |    |   |   |   |         |
|  |               |              | 47 (29581340)       |                 |                            | 3       |   |   |   |   |   |    |   |   |   | <b></b> |
| MRI head perfusion without IV contrast | May<br>approp | be<br>priate | Limited             | O 0 mSv         | O 0 mSv<br>[ped]           | 5       | 5 | 1 | 1 | 0 | 2 | 11 | 4 | 0 | 1 | 0       |
|  |               |              | References          |                 | Study                      | Quality |   |   |   |   |   |    |   |   |   |         |
|  |               |              | 39 (22462697)       |                 |                            | 4       |   |   |   |   |   |    |   |   |   |         |
|  |               |              | 46 (24335546)       |                 |                            | 2       |   |   |   |   |   |    |   |   |   |         |
|  |               |              | 48 (24335813)       |                 |                            | 4       |   |   |   |   |   |    |   |   |   |         |
|  |               |              | 49 (24055185)       |                 |                            | 3       |   |   |   |   |   |    |   |   |   |         |

|                                      |                  |                 | 47 (29581340)       |                 |                             | 3         |     |    |   |   | - |   | - |   |   |   |
|--------------------------------------|------------------|-----------------|---------------------|-----------------|-----------------------------|-----------|-----|----|---|---|---|---|---|---|---|---|
| CT head perfusion with IV contrast   | Usuall<br>approp | y not<br>oriate | Limited             | ତତତ 1-10<br>mSv |                             | 3         | 3   | 7  | 1 | 3 | 1 | 5 | 1 | 0 | 1 | 0 |
|                                      |                  |                 | References          |                 | Study                       | / Quality |     |    |   |   |   |   |   |   |   |   |
|                                      |                  |                 | 28 (22209434)       |                 |                             | 4         |     |    |   |   |   |   |   |   |   |   |
| MRA head with IV contrast            | Usuall<br>approp | y not<br>oriate | Expert<br>Consensus | O 0 mSv         | O 0 mSv<br>[ped]            | 3         | 3   | 7  | 1 | 6 | 3 | 0 | 1 | 0 | 0 | 0 |
| MRI head with IV contrast            | Usuall           | y not<br>oriate | Moderate            | O 0 mSv         | O 0 mSv<br>[ped]            | 2         | 2   | 8  | 2 | 5 | 3 | 0 | 0 | 0 | 0 | 0 |
|                                      |                  |                 | References          |                 | Study                       | / Quality |     |    |   | 1 |   |   |   |   |   |   |
|                                      |                  |                 | 45 (15703904)       |                 |                             | 4         |     |    |   |   |   |   |   |   |   |   |
|                                      |                  |                 | 44 (24558166)       |                 |                             | М         |     |    |   |   |   |   |   |   |   |   |
|                                      |                  |                 | 15 (29364767)       |                 |                             | 1         |     |    |   |   | - |   |   |   | - |   |
| US duplex Doppler transcranial       | Usuall           | y not<br>oriate | Expert<br>Consensus | O 0 mSv         | O 0 mSv<br>[ped]            | 2         | n/a | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CT head with IV contrast             | Usuall<br>approp | y not<br>oriate | Limited             | ତତତ 1-10<br>mSv | && 0.3-<br>3 mSv<br>[ped]   | 1         | 1   | 10 | 5 | 2 | 1 | 0 | 0 | 0 | 0 | 0 |
|                                      |                  |                 | References          |                 | Study                       | / Quality |     |    |   |   |   |   |   |   |   |   |
|                                      |                  |                 | 43 (9885601)        |                 |                             | 2         |     |    |   |   |   |   |   |   |   |   |
| CT head without and with IV contrast | Usuall           | y not<br>oriate | Limited             | ତତତ 1-10<br>mSv | ֎֎֎֎ 3-<br>10 mSv<br>[ped]  | 1         | 1   | 11 | 5 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
|                                      |                  |                 | References          |                 | Study                       | / Quality |     |    |   |   |   |   |   |   |   |   |
|                                      |                  |                 | 43 (9885601)        |                 |                             | 2         |     |    |   |   | - |   | - |   | - |   |
| Arteriography cervicocerebral        | Usuall           | y not<br>oriate | Expert<br>Consensus | ତତତ 1-10<br>mSv | &&&& 3-<br>10 mSv<br>[ped]  | 1         | 1   | 11 | 3 | 3 | 0 | 0 | 1 | 0 | 0 | 0 |
| SPECT or SPECT/CT brain perfusion    | Usuall           | y not<br>oriate | Limited             | ତତତ 1-10<br>mSv | €€€€€ 3-<br>10 mSv<br>[ped] | 1         | 1   | 11 | 1 | 5 | 0 | 1 | 0 | 0 | 0 | 0 |
|                                      |                  | References      |                     |                 | Study                       | V Quality |     | •  |   |   |   |   |   |   |   |   |
|                                      |                  | 39 (22462697)   |                     |                 |                             | 4         |     |    |   |   |   |   |   |   |   |   |

|                                       | Appropriateness        | COF           |                 | ults RRL Peds RRL Rating Med |           |        |   |   | I | <b>Final</b> | Tabu | latio | ns |   |    |
|---------------------------------------|------------------------|---------------|-----------------|------------------------------|-----------|--------|---|---|---|--------------|------|-------|----|---|----|
| Procedure                             | Category               | SOE           | Adults RRL      | Peds RRL                     | Rating    | Median | 1 | 2 | 3 | 4            | 5    | 6     | 7  | 8 | 9  |
| MRI head and neck without IV contrast | Usually appropriate    | Limited       | O 0 mSv         | O 0 mSv<br>[ped]             | 9         | 9      | 0 | 0 | 0 | 0            | 0    | 1     | 1  | 6 | 10 |
|                                       |                        | References    |                 | Study                        | y Quality |        |   |   |   |              |      |       |    |   |    |
|                                       |                        | 52 (21979145) |                 |                              | 4         |        |   |   |   |              |      |       |    |   |    |
|                                       |                        | 50 (25987283) |                 |                              | 4         |        |   |   |   |              |      |       |    |   |    |
|                                       |                        | 53 (19351813) |                 |                              | 3         |        |   |   |   |              |      |       |    |   |    |
| CTA head and neck with IV contrast    | Usually<br>appropriate | Limited       | ֎֎֎ 1-10<br>mSv | ֎֎֎֎ 3-<br>10 mSv<br>[ped]   | 8         | 8      | 0 | 0 | 1 | 0            | 0    | 3     | 1  | 9 | 5  |
|                                       |                        | References    |                 | Study                        | y Quality |        |   |   |   |              |      |       |    |   |    |
|                                       |                        | 52 (21979145) |                 |                              | 4         |        |   |   |   |              |      |       |    |   |    |
|                                       |                        | 50 (25987283) |                 |                              | 4         |        |   |   | 1 |              |      |       | 1  | 1 |    |
| MRA head and neck without IV contrast | Usually appropriate    | Limited       | O 0 mSv         | O 0 mSv<br>[ped]             | 8         | 8      | 1 | 1 | 0 | 0            | 0    | 1     | 1  | 8 | 7  |
|                                       |                        | References    |                 | Study                        | y Quality |        |   |   |   |              |      |       |    |   |    |
|                                       |                        | 52 (21979145) |                 |                              | 4         |        |   |   |   |              |      |       |    |   |    |
|                                       |                        | 53 (19351813) |                 |                              | 3         |        |   |   | 1 |              |      |       | 1  | 1 |    |
| CT head without IV contrast           | May be<br>appropriate  | Limited       | ତତତ 1-10<br>mSv | ֎֎֎ 0.3-<br>3 mSv<br>[ped]   | 6         | 6      | 1 | 0 | 0 | 2            | 3    | 12    | 0  | 0 | 0  |
|                                       |                        | References    |                 | Study                        | y Quality |        |   |   |   |              |      |       |    |   |    |
|                                       |                        | 52 (21979145) |                 |                              | 4         |        |   |   |   |              |      |       |    |   |    |
|                                       |                        | 43 (9885601)  |                 | 1                            | 2         |        |   |   |   |              |      |       |    |   |    |
| Arteriography cervicocerebral         | May be<br>appropriate  | Limited       | ତତତ 1-10<br>mSv | ֎֎֎֎ 3-<br>10 mSv<br>[ped]   | 6         | 6      | 1 | 0 | 0 | 2            | 5    | 8     | 0  | 2 | 0  |
|                                       |                        | References    |                 | Study                        | y Quality |        |   |   |   |              |      |       |    |   |    |

Variant 4: Child. Known or suspected cervicocranial arterial dissection based on clinical or imaging findings. Next imaging study.

|  |                            |                        | 52 (21979145)  |                            |                  | 4          |   |   |   |   |   |   |   |   |   |   |
|--|----------------------------|------------------------|----------------|----------------------------|------------------|------------|---|---|---|---|---|---|---|---|---|---|
|  |                            |                        | 53 (19351813)  |                            |                  | 3          |   |   |   |   |   |   |   |   |   |   |
| MRI head and neck without and with IV contrast | May<br>approp              | be<br>riate            | Limited        | O 0 mSv                    | O 0 mSv<br>[ped] | 6          | 6 | 1 | 0 | 0 | 1 | 4 | 8 | 4 | 0 | 0 |
|  |                            |                        | References     |                            | Stu              | dy Quality |   |   |   |   |   |   |   |   |   |   |
|  |                            |                        | 52 (21979145)  |                            |                  | 4          |   |   |   |   |   |   |   |   |   |   |
|  |                            |                        | 50 (25987283)  |                            |                  | 4          |   |   |   |   |   |   |   |   |   |   |
|  |                            |                        | 53 (19351813)  |                            |                  | 3          |   |   |   |   |   |   |   |   |   |   |
| MRA head and neck with IV contrast             | May<br>approp<br>(Disagree | be<br>briate<br>ement) | Expert Opinion | O 0 mSv                    | O 0 mSv<br>[ped] | 5          | 5 | 2 | 0 | 0 | 0 | 1 | 1 | 5 | 4 | 5 |
|  |                            |                        | References     |                            | Stu              | dy Quality |   |   |   |   |   |   |   |   |   |   |
|  |                            |                        | 52 (21979145)  |                            |                  | 4          |   |   |   |   |   |   |   |   |   |   |
|  |                            |                        | 53 (19351813)  |                            |                  | 3          |   |   |   |   |   |   |   |   |   |   |
| MRI head and neck with IV contrast             | May<br>approp<br>(Disagre  | be<br>briate<br>ement) | Expert Opinion | O 0 mSv                    | O 0 mSv<br>[ped] | 5          | 5 | 1 | 0 | 0 | 5 | 5 | 4 | 1 | 2 | 0 |
|  | •                          |                        | References     |                            | Stu              | dy Quality |   |   |   |   |   |   |   |   |   |   |
|  |                            |                        | 52 (21979145)  |                            |                  | 4          |   |   |   |   |   |   |   |   |   |   |
|  |                            |                        | 50 (25987283)  |                            |                  | 4          |   |   |   |   |   |   |   |   |   |   |
|  |                            |                        | 53 (19351813)  |                            |                  | 3          |   |   |   |   |   |   |   |   |   |   |
| CT head with IV contrast                       | Usually<br>approp          | y not<br>riate         | Limited        | େଟେଟେ 1-1(<br>mSv          | )                | 2          | 2 | 5 | 7 | 6 | 0 | 0 | 0 | 0 | 1 | 0 |
|  |                            |                        | References     |                            | Stu              | dy Quality |   |   |   |   |   |   |   |   |   |   |
|  |                            |                        | 52 (21979145)  |                            |                  | 4          |   |   |   |   |   |   |   |   |   |   |
|  |                            |                        | 43 (9885601)   |                            |                  | 2          |   |   |   |   |   | - |   |   |   |   |
| CT head without and with IV contrast           | Usually<br>approp          | y not<br>riate         | Limited        | <del>ତତତ</del> 1-1(<br>mSv | )                | 2          | 2 | 7 | 5 | 5 | 1 | 0 | 0 | 0 | 0 | 1 |
|  |                            |                        | References     |                            | Stu              | dy Quality |   |   |   |   |   |   |   |   |   |   |
|  |                            |                        | 52 (21979145)  |                            |                  | 4          |   |   |   |   |   |   |   |   |   |   |
|  |                            |                        | 43 (9885601)   |                            |                  | 2          |   |   |   |   |   |   |   |   |   |   |

| US duplex Doppler transcranial and carotid artery | Usually not appropriate | Expert<br>Consensus | O 0 mSv | O 0 mSv<br>[ped] | 1 | 1 | 10 | 3 | 4 | 0 | 0 | 0 | 0 | 1 | 0 |
|---|-------------------------|---------------------|---------|------------------|---|---|----|---|---|---|---|---|---|---|---|
|---|-------------------------|---------------------|---------|------------------|---|---|----|---|---|---|---|---|---|---|---|

### Variant 5: Child. Clinical presentation suggestive of acute stroke, known or suspected central nervous system vasculitis. Initial imaging.

|                                       | Appropri       | ateness       |                     |                  |                                   |           |        |   |   | I | inal | Tabu | latio      | ns |   |   |
|---------------------------------------|----------------|---------------|---------------------|------------------|-----------------------------------|-----------|--------|---|---|---|------|------|------------|----|---|---|
| Procedure                             | Categ          | gory          | SOE                 | Adults RRL       | Peds RRL                          | Rating    | Median | 1 | 2 | 3 | 4    | 5    | 6          | 7  | 8 | 9 |
| MRA head without IV contrast          | Usua<br>approp | lly<br>oriate | Limited             | O 0 mSv          | O 0 mSv<br>[ped]                  | 8         | 8      | 0 | 0 | 0 | 0    | 2    | 2          | 3  | 3 | 9 |
|                                       |                |               | References          |                  | Study                             | Quality   |        |   |   |   |      |      |            |    |   | - |
|                                       | -              |               | 17 (20113901)       |                  |                                   | 4         |        |   |   | _ | -    |      |            |    |   |   |
| MRI head without IV contrast          | Usua<br>approp | lly<br>oriate | Expert<br>Consensus | O 0 mSv          | O 0 mSv<br>[ped]                  | 8         | 8      | 0 | 0 | 0 | 0    | 0    | 1          | 2  | 9 | 6 |
| CTA head with IV contrast             | Usua<br>approp | lly<br>oriate | Limited             | ଝେଝଝ 1-10<br>mSv | <b>≎≎≎≎</b> 3-<br>10 mSv<br>[ped] | 7         | 7      | 0 | 0 | 0 | 0    | 1    | 3          | 7  | 4 | 4 |
|                                       |                |               | References          |                  | Study                             | V Quality |        |   |   |   |      |      |            |    |   |   |
|                                       |                |               | 17 (20113901)       |                  |                                   | 4         |        |   |   |   |      |      |            |    |   |   |
| MRI head without and with IV contrast | Usua<br>approp | lly<br>oriate | Expert<br>Consensus | O 0 mSv          | O 0 mSv<br>[ped]                  | 7         | 7      | 0 | 0 | 0 | 0    | 0    | 1          | 9  | 4 | 4 |
| CT head without IV contrast           | May<br>approp  | be<br>oriate  | Limited             | ତେତତ 1-10<br>mSv | ଡେଡେଡ 0.3-<br>3 mSv<br>[ped]      | 6         | 6      | 1 | 0 | 0 | 2    | 5    | 9          | 1  | 0 | 0 |
|                                       |                |               | References          |                  | Study                             | Quality   |        |   |   |   |      |      |            |    |   |   |
|                                       |                |               | 56 (15986347)       |                  |                                   | 4         |        |   | _ | _ | _    |      | . <u>.</u> | _  |   |   |
| MRA head with IV contrast             | May<br>approp  | be<br>oriate  | Limited             | O 0 mSv          | O 0 mSv<br>[ped]                  | 6         | 6      | 1 | 0 | 0 | 0    | 6    | 10         | 1  | 0 | 0 |
|                                       |                |               | References          |                  | Study                             | Quality   |        |   |   |   |      |      |            |    |   |   |
|                                       | •              |               | 17 (20113901)       |                  |                                   | 4         |        |   |   |   |      |      |            |    |   |   |
| Arteriography cervicocerebral         | May<br>approp  | be<br>priate  | Limited             | ଷଷଷ 1-10<br>mSv  | ଡଡଡଡ 3-<br>10 mSv<br>[ped]        | 5         | 5      | 1 | 0 | 0 | 2    | 7    | 6          | 2  | 0 | 0 |

|                                      |                           |                        | References          |                  | S                        | tudy Qu | uality |     |   |   |   |   |   |   |   |   |   |
|--------------------------------------|---------------------------|------------------------|---------------------|------------------|--------------------------|---------|--------|-----|---|---|---|---|---|---|---|---|---|
|                                      |                           |                        | 17 (20113901)       |                  |                          | 4       |        |     |   |   |   |   |   |   | _ |   |   |
| MRI head with IV contrast            | May<br>approp<br>(Disagre | be<br>briate<br>ement) | Expert Opinion      | O 0 mSv          | O 0 mS<br>[ped]          | Sv      | 5      | 5   | 3 | 0 | 2 | 3 | 6 | 3 | 1 | 0 | 0 |
| CT head with IV contrast             | Usuall<br>approp          | y not<br>oriate        | Limited             | େଡେଡ 1-10<br>mSv | )                        | 3-<br>′ | 2      | 2   | 6 | 5 | 6 | 0 | 0 | 1 | 0 | 0 | 1 |
|                                      |                           |                        | References          |                  | S                        | tudy Qu | uality |     |   |   |   |   |   |   |   |   |   |
|                                      |                           |                        | 56 (15986347)       |                  |                          | 4       |        |     |   |   |   |   |   |   |   |   |   |
| CT head without and with IV contrast | Usuall<br>approp          | y not<br>oriate        | Limited             | ଝେଡଡ 1-1(<br>mSv | ) 😵ତେତ<br>10 mS<br>[ped] | 3-<br>v | 2      | 2   | 8 | 5 | 4 | 1 | 0 | 0 | 0 | 1 | 0 |
|                                      |                           |                        | References          |                  | S                        | tudy Qı | uality |     |   |   |   |   |   |   |   |   |   |
|                                      |                           |                        | 56 (15986347)       |                  |                          | 4       |        |     |   |   | _ |   |   |   |   |   |   |
| US duplex Doppler transcranial       | Usuall<br>approp          | y not<br>priate        | Expert<br>Consensus | O 0 mSv          | O 0 mS<br>[ped]          | ŝv      | 1      | n/a | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

# Variant 6: Child. Nontraumatic intraparenchymal hemorrhage (hematoma) found on CT or MRI. Unknown etiology. Next imaging study.

|                               | Appropriateness        |                     |                             |                            |         |        |   |   | F | 'inal ' | Fabu | latio | ns |   |    |
|-------------------------------|------------------------|---------------------|-----------------------------|----------------------------|---------|--------|---|---|---|---------|------|-------|----|---|----|
| Procedure                     | Category               | SOE                 | Adults RRL                  | Peds RRL                   | Rating  | Median | 1 | 2 | 3 | 4       | 5    | 6     | 7  | 8 | 9  |
| MRA head without IV contrast  | Usually<br>appropriate | Expert<br>Consensus | O 0 mSv                     | O 0 mSv<br>[ped]           | 9       | 9      | 0 | 2 | 0 | 0       | 0    | 1     | 1  | 4 | 11 |
| CTA head with IV contrast     | Usually<br>appropriate | Expert<br>Consensus | ଝେଝ 1-10<br>mSv             | ଡଡଡଡ 3-<br>10 mSv<br>[ped] | 8       | 8      | 0 | 1 | 0 | 0       | 0    | 2     | 6  | 3 | 7  |
| Arteriography cervicocerebral | Usually<br>appropriate | Limited             | <del>ଡ</del> େଡ 1-10<br>mSv | ଡଡଡଡ 3-<br>10 mSv<br>[ped] | 7       | 7      | 1 | 0 | 0 | 0       | 0    | 2     | 10 | 2 | 3  |
|                               |                        | References          |                             | Study                      | Quality |        |   |   |   |         |      |       |    |   |    |
|                               |                        | 61 (26795616)       |                             |                            | 4       |        |   |   |   |         |      |       |    |   |    |
|                               |                        | 60 (22816607)       |                             |                            | 4       |        |   |   |   |         |      |       |    |   |    |

|                                       |                           |                        |                     |                            |                              | 1         | 1   |    | I |   | 1 |   |   |   |   |   |
|---------------------------------------|---------------------------|------------------------|---------------------|----------------------------|------------------------------|-----------|-----|----|---|---|---|---|---|---|---|---|
| MRI head without and with IV contrast | Usua<br>approp            | ully<br>priate         | Limited             | O 0 mSv                    | O 0 mSv<br>[ped]             | 7         | 7   | 0  | 0 | 0 | 0 | 1 | 1 | 9 | 4 | 3 |
|                                       |                           |                        | References          |                            | Study                        | y Quality |     |    |   |   |   |   |   |   |   |   |
|                                       |                           |                        | 24 (25063989)       |                            | -                            | 3         |     |    |   |   |   |   |   |   |   |   |
| MRA head with IV contrast             | May<br>approp             | be<br>oriate           | Expert<br>Consensus | O 0 mSv                    | O 0 mSv<br>[ped]             | 6         | 6   | 0  | 0 | 0 | 0 | 5 | 7 | 5 | 1 | 0 |
| MRI head without IV contrast          | May<br>approp<br>(Disagre | be<br>priate<br>ement) | Expert Opinion      | O 0 mSv                    | O 0 mSv<br>[ped]             | 5         | 5   | 1  | 0 | 1 | 2 | 6 | 3 | 5 | 0 | 0 |
|                                       |                           |                        | References          |                            | Study                        | y Quality |     |    |   |   |   |   |   |   |   |   |
|                                       |                           |                        | 24 (25063989)       |                            |                              | 3         |     |    |   |   |   |   |   |   |   |   |
| MRI head with IV contrast             | May<br>approp<br>(Disagre | be<br>briate<br>ement) | Expert Opinion      | O 0 mSv                    | O 0 mSv<br>[ped]             | 5         | 5   | 2  | 0 | 0 | 2 | 6 | 5 | 2 | 1 | 0 |
|                                       |                           |                        | References          |                            | Study                        | y Quality |     |    |   |   |   |   |   | • |   | • |
|                                       |                           |                        | 24 (25063989)       |                            |                              | 3         |     |    |   |   |   |   |   |   |   |   |
| CT head with IV contrast              | Usuall<br>approp          | y not<br>priate        | Limited             | ତତତ 1-1(<br>mSv            | 0                            | 3         | 3   | 7  | 2 | 7 | 1 | 1 | 0 | 0 | 0 | 0 |
|                                       |                           |                        | References          |                            | Study                        | v Ouality |     |    |   |   |   |   |   |   |   |   |
|                                       |                           |                        | 59 (24156863)       |                            |                              | 4         |     |    |   |   |   |   |   |   |   |   |
| CT head without IV contrast           | Usually<br>approp         | y not<br>priate        | Limited             | <del>ଷଷଷ</del> 1-1(<br>mSv | 0 000 0.3-<br>3 mSv<br>[ped] | 2         | 2   | 7  | 4 | 5 | 0 | 1 | 0 | 1 | 1 | 0 |
|                                       |                           |                        | References          |                            | Study                        | y Quality |     |    |   |   |   |   |   |   |   |   |
|                                       |                           |                        | 59 (24156863)       |                            | P                            | 4         |     |    |   |   |   |   |   |   |   |   |
| US duplex Doppler transcranial        | Usuall                    | y not<br>priate        | Expert<br>Consensus | O 0 mSv                    | O 0 mSv<br>[ped]             | 2         | n/a | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CT head without and with IV contrast  | Usuall                    | y not<br>oriate        | Limited             | ତତତ 1-10<br>mSv            | )                            | 1         | 1   | 10 | 6 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
|                                       |                           | References             |                     |                            | Study                        | y Quality |     |    |   |   |   |   |   |   |   |   |
|                                       |                           |                        | 59 (24156863)       |                            |                              | 4         |     |    |   |   |   |   |   |   |   |   |

| December                      | Appropriateness        | SOF           |                  | ılts RRL Peds RRL Rating Median 1 |           |        |   |   | ŀ | 'inal ' | Tabu | latio | ns |   |    |
|-------------------------------|------------------------|---------------|------------------|-----------------------------------|-----------|--------|---|---|---|---------|------|-------|----|---|----|
| Procedure                     | Category               | SOE           | Adults KRL       | Peas KKL                          | Rating    | Median | 1 | 2 | 3 | 4       | 5    | 6     | 7  | 8 | 9  |
| MRA head without IV contrast  | Usually appropriate    | Moderate      | O 0 mSv          | O 0 mSv<br>[ped]                  | 9         | 9      | 0 | 0 | 2 | 0       | 0    | 1     | 2  | 2 | 12 |
|                               |                        | References    |                  | Study                             | / Quality |        |   |   |   |         |      |       |    |   |    |
|                               |                        | 67 (24326447) |                  | C                                 | Good      |        |   |   |   |         |      |       |    |   |    |
|                               |                        | 51 (24156864) |                  |                                   | 4         |        |   |   |   |         |      |       |    |   |    |
|                               |                        | 68 (9933265)  |                  |                                   | М         |        |   |   |   |         |      | 1     |    |   |    |
| CTA head with IV contrast     | Usually<br>appropriate | Moderate      | ତେତେ 1-10<br>mSv | ֎֎֎֎ 3-<br>10 mSv<br>[ped]        | 8         | 8      | 0 | 0 | 0 | 0       | 0    | 0     | 2  | 8 | 8  |
|                               |                        | References    |                  | Study                             | / Quality |        |   |   |   |         |      |       |    |   |    |
|                               |                        | 66 (21990495) |                  | C                                 | Good      |        |   |   |   |         |      |       |    |   |    |
|                               |                        | 65 (22143927) |                  | 1                                 | 2         |        |   |   | 1 |         |      | 1     |    |   |    |
| Arteriography cervicocerebral | Usually<br>appropriate | Limited       | ତତତ 1-10<br>mSv  | ଡଡଡଡଡ 3-<br>10 mSv<br>[ped]       | 7         | 7      | 0 | 0 | 1 | 1       | 1    | 3     | 4  | 1 | 8  |
|                               |                        | References    |                  | Study                             | / Quality |        |   |   |   |         |      |       |    |   |    |
|                               |                        | 51 (24156864) |                  |                                   | 4         |        |   |   |   |         |      |       |    |   |    |
| [                             |                        | 60 (22816607) |                  |                                   | 4         |        |   |   |   | 1       | 1    |       |    | 1 |    |
| MRA head with IV contrast     | May be<br>appropriate  | Moderate      | O 0 mSv          | O 0 mSv<br>[ped]                  | 6         | 6      | 0 | 0 | 0 | 0       | 4    | 9     | 3  | 2 | 0  |
|                               |                        | References    |                  | Study                             | / Quality |        |   |   |   |         |      |       |    |   |    |
|                               |                        | 67 (24326447) |                  | 0                                 | Good      |        |   |   |   |         |      |       |    |   |    |
|                               |                        | 51 (24156864) |                  | 4                                 |           |        |   |   |   |         |      |       |    |   |    |
|                               |                        | 68 (9933265)  |                  | М                                 | ,         |        |   | 1 | 1 | 1       | 1    |       | 1  |   |    |
| MRI head without IV contrast  | May be<br>appropriate  | Limited       | O 0 mSv          | O 0 mSv<br>[ped]                  | 5         | 5      | 1 | 0 | 0 | 1       | 11   | 5     | 0  | 0 | 0  |

Variant 7: Child. Nontraumatic subarachnoid hemorrhage (SAH) detected by noncontrast CT. Next imaging study.

|                                       |                   |                | References          |                  | Study                                      | Quality   |     |   |   |   |   |    |   |   |   |   |
|---------------------------------------|-------------------|----------------|---------------------|------------------|--|-----------|-----|---|---|---|---|----|---|---|---|---|
|                                       |                   |                | 63 (19357386)       |                  |  | 4         |     |   |   |   |   |    |   |   |   |   |
|                                       |                   |                | 60 (22816607)       |                  |  | 4         |     |   |   | _ | - | -  |   |   |   |   |
| MRI head without and with IV contrast | May<br>approp     | be<br>riate    | Limited             | O 0 mSv          | O 0 mSv<br>[ped]                           | 5         | 5   | 0 | 0 | 0 | 1 | 11 | 5 | 0 | 0 | 1 |
|                                       |                   |                | References          |                  | Study                                      | v Quality |     |   |   |   |   |    |   |   |   |   |
|                                       |                   |                | 63 (19357386)       |                  |  | 4         |     |   |   |   |   |    |   |   |   |   |
|                                       |                   |                | 60 (22816607)       |                  |  | 4         |     |   |   |   |   |    |   |   |   |   |
| MRI head with IV contrast             | Usually<br>approp | y not<br>riate | Limited             | O 0 mSv          | O 0 mSv<br>[ped]                           | 3         | 3   | 8 | 1 | 5 | 3 | 1  | 0 | 0 | 0 | 0 |
|                                       |                   |                | References          |                  | Study                                      | v Quality |     |   |   |   |   |    |   |   |   |   |
|                                       |                   |                | 63 (19357386)       |                  |  | 4         |     |   |   |   |   |    |   |   |   |   |
|                                       |                   |                | 60 (22816607)       |                  |  | 4         |     |   |   |   |   |    |   |   |   |   |
| CT head with IV contrast              | Usually<br>approp | y not<br>riate | Limited             | ֎֎֎ 1-10<br>mSv  | && 0.3-<br>3 mSv<br>[ped]                  | 2         | 2   | 6 | 4 | 6 | 1 | 0  | 1 | 1 | 0 | 0 |
|                                       |                   |                | References          |                  | Study                                      | v Quality |     |   |   |   |   |    |   |   |   |   |
|                                       |                   |                | 59 (24156863)       |                  |  | 4         |     |   | _ | _ |   |    |   |   |   |   |
| CT head without IV contrast           | Usually<br>approp | y not<br>riate | Limited             | ଝେଡେ 1-10<br>mSv | ଡଡଡ 0.3-<br>3 mSv<br>[ped]                 | 2         | 2   | 9 | 3 | 5 | 1 | 0  | 0 | 0 | 0 | 0 |
|                                       |                   |                | References          |                  | Study                                      | v Quality |     |   |   |   |   |    |   |   |   |   |
|                                       |                   |                | 59 (24156863)       |                  | 1  | 4         | _   |   |   |   |   |    |   |   |   |   |
| CT head without and with IV contrast  | Usually<br>approp | y not<br>riate | Limited             | ֎֎֎ 1-10<br>mSv  | <del>ବ୍ରବ୍ରକ୍ତ</del> 3-<br>10 mSv<br>[ped] | 2         | 2   | 8 | 2 | 6 | 2 | 0  | 1 | 0 | 0 | 0 |
|                                       |                   |                | References          |                  | Study                                      | Quality   |     |   |   |   |   |    |   |   |   |   |
|                                       |                   |                | 59 (24156863)       |                  |  | 4         |     |   | 1 | 1 |   |    | 1 | 1 |   |   |
| US duplex Doppler transcranial        | Usually<br>approp | y not<br>riate | Expert<br>Consensus | O 0 mSv          | O 0 mSv<br>[ped]                           | 1         | n/a | 0 | 0 | 0 | 0 | 0  | 0 | 0 | 0 | 0 |

Variant 8: Child. Clinical presentation suggestive of acute stroke, known or suspected high-flow vascular anomaly. Initial imaging.

|                                       | Appropri                  | ateness                | COL                 |                    |                                 |           |        |   |   | F | 'inal ' | Tabu | latio | ns |   |   |
|---------------------------------------|---------------------------|------------------------|---------------------|--------------------|---------------------------------|-----------|--------|---|---|---|---------|------|-------|----|---|---|
| Procedure                             | Categ                     | gory                   | SOE                 | Adults RR          | L Peds RRL                      | Rating    | Median | 1 | 2 | 3 | 4       | 5    | 6     | 7  | 8 | 9 |
| CTA head with IV contrast             | Usua<br>approp            | lly<br>oriate          | Expert<br>Consensus | େଡେଡ 1-1(<br>mSv   | ) 🗘 🕸 🏵 🥸 3-<br>10 mSv<br>[ped] | 8         | 8      | 1 | 0 | 0 | 0       | 0    | 1     | 3  | 7 | 7 |
| CT head without IV contrast           | Usua<br>approp            | lly<br>priate          | Limited             | ଡଡଡ 1-1(<br>mSv    | )                               | 8         | 8      | 0 | 0 | 0 | 0       | 0    | 2     | 6  | 3 | 7 |
|                                       |                           |                        | References          |                    | Stud                            | y Quality |        |   |   |   |         |      |       |    |   |   |
|                                       |                           |                        | 59 (24156863)       |                    |                                 | 4         |        |   | - |   |         |      |       |    |   |   |
| MRA head without IV contrast          | Usua<br>approp            | lly<br>oriate          | Expert<br>Consensus | O 0 mSv            | O 0 mSv<br>[ped]                | 8         | 8      | 0 | 1 | 0 | 0       | 0    | 1     | 1  | 7 | 9 |
| MRI head without IV contrast          | Usua<br>approp            | lly<br>oriate          | Limited             | O 0 mSv            | O 0 mSv<br>[ped]                | 8         | 8      | 0 | 0 | 0 | 0       | 1    | 1     | 3  | 5 | 8 |
|                                       |                           |                        | References          |                    | Stud                            | y Quality |        |   |   |   |         |      |       |    |   |   |
|                                       |                           |                        | 24 (25063989)       |                    |                                 | 3         |        |   | _ |   |         |      |       |    |   |   |
| MRI head without and with IV contrast | May<br>approp             | be<br>oriate           | Limited             | O 0 mSv            | O 0 mSv<br>[ped]                | 6         | 6      | 0 | 0 | 0 | 0       | 4    | 11    | 1  | 1 | 1 |
|                                       |                           |                        | References          |                    | Stud                            | y Quality |        |   |   |   |         |      |       |    |   |   |
|                                       |                           |                        | 24 (25063989)       |                    |                                 | 3         |        |   |   |   |         |      | 1     |    |   |   |
| MRA head with IV contrast             | May<br>approp             | be<br>oriate           | Expert<br>Consensus | O 0 mSv            | O 0 mSv<br>[ped]                | 6         | 6      | 0 | 0 | 0 | 4       | 1    | 5     | 8  | 0 | 0 |
| Arteriography cervicocerebral         | May<br>approp<br>(Disagre | be<br>oriate<br>ement) | Expert Opinion      | ଷ୍ଟର୍ଷ 1-1(<br>mSv | )                               | 5         | 5      | 5 | 4 | 4 | 2       | 0    | 0     | 0  | 3 | 0 |
|                                       |                           |                        | References          |                    | Stud                            | y Quality |        |   |   |   |         |      |       |    |   |   |
|                                       |                           |                        | 59 (24156863)       |                    |                                 | 4         |        |   |   |   |         |      |       |    |   |   |
|                                       |                           |                        | 71 (24286156)       |                    | 2                               |           |        |   |   | 1 |         | 1    | 1     |    |   |   |
| MRI head with IV contrast             | Usuall<br>approp          | y not<br>oriate        | Limited             | O 0 mSv            | O 0 mSv<br>[ped]                | 3         | 3      | 5 | 3 | 5 | 2       | 3    | 0     | 0  | 0 | 0 |
|                                       |                           |                        | References          |                    | Stud                            | y Quality |        |   |   |   |         |      |       |    |   |   |

|                                      |                  |                 | 24 (25063989)       |                   |   |                            | 3         |     |   |   |   |   |   |   |   |   |   |
|--------------------------------------|------------------|-----------------|---------------------|-------------------|---|----------------------------|-----------|-----|---|---|---|---|---|---|---|---|---|
| CT head with IV contrast             | Usuall<br>approp | y not<br>priate | Limited             | ତତତ 1-1(<br>mSv   | 0 | ତେତ 0.3-<br>3 mSv<br>[ped] | 2         | 2   | 6 | 6 | 6 | 0 | 0 | 0 | 0 | 0 | 0 |
|                                      |                  |                 | References          |                   |   | Study                      | Quality   |     |   |   |   |   |   |   |   |   |   |
|                                      |                  |                 | 59 (24156863)       |                   |   |                            | 4         |     |   |   |   |   |   |   |   |   |   |
| CT head without and with IV contrast | Usuall<br>approp | y not<br>priate | Limited             | ଝେଡେଡ 1-1(<br>mSv | 0 | ���� 3-<br>10 mSv<br>[ped] | 2         | 2   | 8 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
|                                      |                  |                 | References          |                   |   | Study                      | v Quality |     |   |   |   |   |   |   |   |   |   |
|                                      |                  |                 | 59 (24156863)       |                   |   |                            | 4         |     |   |   |   |   |   |   |   | • |   |
| US duplex Doppler transcranial       | Usuall<br>approp | y not<br>oriate | Expert<br>Consensus | O 0 mSv           | , | O 0 mSv<br>[ped]           | 2         | n/a | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

### Variant 9: Child. Clinical presentation suggestive of acute stroke, known or suspected low-flow vascular anomaly. Initial imaging.

|                                       | Appropri       | ateness       |               |                 |                           | DI              |         |        |   |   | ŀ | inal | Tabu | latio | ns |   |    |
|---------------------------------------|----------------|---------------|---------------|-----------------|---------------------------|-----------------|---------|--------|---|---|---|------|------|-------|----|---|----|
| Procedure                             | Categ          | gory          | SOE           | Adults RR       | L Peds R                  | RL              | Rating  | Median | 1 | 2 | 3 | 4    | 5    | 6     | 7  | 8 | 9  |
| MRI head without IV contrast          | Usua<br>approp | lly<br>oriate | Limited       | O 0 mSv         | O 0 m<br>[ped             | Sv<br>]         | 9       | 9      | 0 | 0 | 0 | 0    | 1    | 0     | 3  | 4 | 10 |
|                                       |                |               | References    |                 |                           | Study           | Quality |        |   |   |   |      |      |       |    |   |    |
|                                       |                |               | 75 (26272978) |                 |                           |                 | 4       |        |   |   |   |      |      |       |    |   |    |
| CT head without IV contrast           | Usua<br>approp | lly<br>priate | Limited       | ଝେଝ 1-10<br>mSv | ) 🗢 😌 😌 (<br>3 mS<br>[ped | ).3-<br>Sv<br>] | 7       | 7      | 2 | 0 | 0 | 0    | 3    | 3     | 4  | 4 | 3  |
|                                       |                |               | References    |                 |                           | Study           | Quality |        |   |   |   |      |      |       |    |   |    |
|                                       |                |               | 61 (26795616) |                 |                           |                 | 4       |        |   | _ |   | _    |      |       |    |   |    |
| MRI head without and with IV contrast | May<br>approp  | be<br>priate  | Limited       | O 0 mSv         | O 0 m<br>[ped             | Sv<br>]         | 6       | 6      | 0 | 0 | 0 | 2    | 3    | 6     | 5  | 1 | 1  |
|                                       |                |               | References    |                 |                           | Study           | Quality |        |   |   |   |      |      |       |    |   |    |
|                                       |                |               | 75 (26272978) |                 |                           |                 | 4       |        |   |   |   |      |      |       |    |   |    |

| CTA head with IV contrast            | May<br>approp<br>(Disagre     | be<br>priate<br>ement) | Expert Opinion      | ଝଝଝ 1-10<br>mSv            | )                | 5         | 5   | 6  | 2 | 5 | 1 | 1 | 3 | 0 | 0 | 0 |
|--------------------------------------|-------------------------------|------------------------|---------------------|----------------------------|------------------|-----------|-----|----|---|---|---|---|---|---|---|---|
| MRA head without IV contrast         | May<br>approp<br>(Disagre     | be<br>briate<br>ement) | Expert Opinion      | O 0 mSv                    | O 0 mSv<br>[ped] | 5         | 5   | 5  | 2 | 6 | 0 | 1 | 0 | 2 | 0 | 2 |
| CT head without and with IV contrast | Usually                       | y not<br>priate        | Limited             | ତେତେ 1-10<br>mSv           | )                | 3         | 3   | 7  | 3 | 4 | 0 | 3 | 0 | 0 | 1 | 1 |
|                                      |                               |                        | References          |                            | Study            | y Quality |     |    |   |   |   |   |   |   |   |   |
|                                      |                               |                        | 61 (26795616)       |                            |                  | 4         |     |    |   |   |   |   |   |   |   |   |
| MRA head with IV contrast            | Usually<br>approp             | y not<br>riate         | Expert<br>Consensus | O 0 mSv                    | O 0 mSv<br>[ped] | 3         | 3   | 6  | 2 | 5 | 1 | 3 | 1 | 0 | 0 | 0 |
| CT head with IV contrast             | Usuall <sub>2</sub><br>approp | y not<br>priate        | Limited             | <del>ଡଡଡ</del> 1-10<br>mSv | )                | 2         | 2   | 9  | 4 | 4 | 1 | 0 | 0 | 0 | 0 | 0 |
|                                      |                               |                        | References          |                            | Stud             | y Quality |     |    |   |   |   |   |   |   |   |   |
|                                      |                               |                        | 61 (26795616)       |                            |                  | 4         |     |    |   |   |   |   |   |   |   |   |
| MRI head with IV contrast            | Usuall <sub>2</sub><br>approp | y not<br>riate         | Limited             | O 0 mSv                    | O 0 mSv<br>[ped] | 2         | 2   | 7  | 4 | 2 | 3 | 1 | 0 | 1 | 0 | 0 |
|                                      |                               |                        | References          |                            | Study            | y Quality |     |    | • |   | • |   |   |   | • |   |
|                                      |                               |                        | 75 (26272978)       |                            |                  | 4         |     |    |   |   |   |   |   |   |   |   |
| Arteriography cervicocerebral        | Usuall <sub>2</sub><br>approp | y not<br>priate        | Limited             | ଝେଡ 1-10<br>mSv            | )                | 1         | 1   | 11 | 2 | 4 | 1 | 0 | 0 | 0 | 0 | 0 |
|                                      |                               |                        | References          |                            | Study            | y Quality |     | •  |   |   | - |   |   |   |   | • |
|                                      |                               |                        | 61 (26795616)       |                            |                  | 4         |     |    |   |   |   |   |   |   |   |   |
| US duplex Doppler transcranial       | Usually<br>approp             | y not<br>riate         | Expert<br>Consensus | O 0 mSv                    | O 0 mSv<br>[ped] | 1         | n/a | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Variant 10: Child. Clinical presentation suggestive of acute stroke, known or suspected cortical vein or dural venous sinus thrombosis. Initial imaging.

| Davidson                              | Appropri       | iateness       | COL                 |                 |                             |           |        |   |   | I | <b>inal</b> | Tabu | latio | ations |   |    |  |  |  |  |  |  |  |  |
|---------------------------------------|----------------|----------------|---------------------|-----------------|-----------------------------|-----------|--------|---|---|---|-------------|------|-------|--------|---|----|--|--|--|--|--|--|--|--|
| Procedure                             | Categ          | gory           | SOE                 | Adults RRL      | Peds RRL                    | Rating    | Median | 1 | 2 | 3 | 4           | 5    | 6     | 7      | 8 | 9  |  |  |  |  |  |  |  |  |
| MRV head with IV contrast             | Usua<br>approp | ully<br>priate | Limited             | O 0 mSv         | O 0 mSv<br>[ped]            | 9         | 9      | 1 | 0 | 0 | 0           | 0    | 1     | 3      | 3 | 11 |  |  |  |  |  |  |  |  |
|                                       |                |                | References          |                 | Study                       | y Quality |        | I |   | 1 |             |      |       |        |   |    |  |  |  |  |  |  |  |  |
|                                       |                |                | 80 (22948810)       |                 | -                           | 4         |        |   |   |   |             |      |       |        |   |    |  |  |  |  |  |  |  |  |
| MRI head without and with IV contrast | Usua<br>approp | ully<br>priate | Limited             | O 0 mSv         | O 0 mSv<br>[ped]            | 8         | 8      | 1 | 1 | 0 | 0           | 1    | 1     | 3      | 5 | 7  |  |  |  |  |  |  |  |  |
|                                       |                |                | References          |                 | Study                       | •         |        |   | • |   |             |      |       |        |   |    |  |  |  |  |  |  |  |  |
|                                       |                |                | 77 (23212594)       |                 |                             |           |        |   |   |   |             |      |       |        |   |    |  |  |  |  |  |  |  |  |
|                                       |                |                | 80 (22948810)       | 4               |                             |           |        |   |   |   |             |      |       |        |   |    |  |  |  |  |  |  |  |  |
|                                       |                | 81 (25938564)  |                     |                 |                             |           |        |   |   |   |             |      |       |        |   |    |  |  |  |  |  |  |  |  |
| MRV head without IV contrast          | Usua<br>approp | ully<br>priate | Limited             | O 0 mSv         | O 0 mSv<br>[ped]            | 8         | 8      | 0 | 0 | 0 | 0           | 0    | 2     | 7      | 3 | 7  |  |  |  |  |  |  |  |  |
|                                       |                |                | References          |                 | Study                       | y Quality |        | I |   | 1 |             |      |       |        |   |    |  |  |  |  |  |  |  |  |
|                                       |                | 80 (22948810)  |                     |                 | -                           | 4         |        |   |   |   |             |      |       |        |   |    |  |  |  |  |  |  |  |  |
| CTV head with IV contrast             | Usua<br>approp | ully<br>priate | Expert<br>Consensus | ତ®ତ 1-10<br>mSv | ଡଡଡଡଡ 3-<br>10 mSv<br>[ped] | 8         | 8      | 0 | 1 | 0 | 0           | 1    | 2     | 2      | 5 | 8  |  |  |  |  |  |  |  |  |
| CT head without IV contrast           | Usua<br>approp | ully<br>priate | Limited             | ତତତ 1-10<br>mSv |                             | 7         | 7      | 0 | 0 | 0 | 0           | 0    | 5     | 5      | 3 | 5  |  |  |  |  |  |  |  |  |
|                                       |                |                | References          | Study Ouality   |                             |           |        |   |   |   |             |      |       |        |   |    |  |  |  |  |  |  |  |  |
|                                       |                |                | 77 (23212594)       |                 |                             | 4         |        |   |   |   |             |      |       |        |   |    |  |  |  |  |  |  |  |  |
|                                       |                |                | 80 (22948810)       |                 |                             | 4         |        |   |   |   |             |      |       |        |   |    |  |  |  |  |  |  |  |  |
|                                       |                |                | 79 (20437556)       |                 |                             | 1         |        |   | _ |   | _           |      |       |        | _ |    |  |  |  |  |  |  |  |  |
| MRI head without IV contrast          | Usua<br>approp | ally<br>priate | Limited             | O 0 mSv         | O 0 mSv<br>[ped]            | 7         | 7      | 0 | 1 | 0 | 1           | 4    | 3     | 7      | 0 | 3  |  |  |  |  |  |  |  |  |
|                                       |                |                | References          |                 | Study                       | y Quality |        |   |   |   |             |      |       |        |   |    |  |  |  |  |  |  |  |  |
|                                       |                |                | 77 (23212594)       |                 | 4 4                         |           |        |   |   |   |             |      |       |        |   |    |  |  |  |  |  |  |  |  |
|                                       |                |                | 80 (22948810)       |                 |                             |           |        |   |   |   |             |      |       |        |   |    |  |  |  |  |  |  |  |  |
|                                       |                |                | 81 (25938564)       | 2               |                             |           |        |   |   |   |             |      |       |        |   |    |  |  |  |  |  |  |  |  |

| CT head with IV contrast             | Usually not<br>appropriate |                | Limited             | ତତତ 1-10<br>mSv | && ⊕ 0.3-<br>3 mSv<br>[ped]  | 3         | 3   | 6 | 1 | 5 | 1 | 4 | 0 | 1 | 0 | 0 |
|--------------------------------------|----------------------------|----------------|---------------------|-----------------|------------------------------|-----------|-----|---|---|---|---|---|---|---|---|---|
|                                      |                            |                | References          | Stud            |                              |           |     |   |   |   |   |   |   |   |   |   |
|                                      |                            |                | 77 (23212594)       |                 |                              |           |     |   |   |   |   |   |   |   |   |   |
|                                      |                            |                | 80 (22948810)       |                 |                              |           |     |   |   |   |   |   |   |   |   |   |
|                                      |                            |                | 79 (20437556)       |                 |                              |           |     |   |   |   |   |   |   |   |   |   |
| CT head without and with IV contrast | Usuall<br>approp           | y not<br>riate | Limited             | ଝେଝ 1-10<br>mSv | ଡେଡେଡେ 3-<br>10 mSv<br>[ped] | 2         | 2   | 8 | 4 | 2 | 2 | 1 | 0 | 1 | 0 | 0 |
|                                      |                            |                | References          |                 | Stud                         |           |     |   |   |   |   |   |   |   |   |   |
| 77 (23212594                         |                            |                | 77 (23212594)       |                 |                              |           |     |   |   |   |   |   |   |   |   |   |
|                                      |                            |                | 80 (22948810)       |                 |                              | 4         |     |   |   |   |   |   |   |   |   |   |
|                                      |                            |                | 79 (20437556)       |                 |                              |           |     |   |   |   |   |   |   |   |   |   |
| Arteriography cervicocerebral        | Usuall<br>approp           | y not<br>riate | Expert<br>Consensus | ଝେଝ 1-10<br>mSv | ֎֎֎֎ 3-<br>10 mSv<br>[ped]   | 2         | 2   | 8 | 4 | 3 | 1 | 1 | 0 | 0 | 2 | 0 |
| MRI head with IV contrast            | Usually not appropriate    |                | Limited             | O 0 mSv         | O 0 mSv<br>[ped]             | 2         | 2   | 7 | 3 | 3 | 0 | 3 | 2 | 0 | 0 | 0 |
|                                      |                            |                | References          |                 | Stud                         | y Quality |     |   |   |   |   |   |   |   |   |   |
|                                      |                            |                | 77 (23212594)       |                 |                              | 4         |     |   |   |   |   |   |   |   |   |   |
| 80 (22948810)   81 (25938564)        |                            |                |                     | 4               |                              |           |     |   |   |   |   |   |   |   |   |   |
|                                      |                            |                | 81 (25938564)       |                 | 2                            |           |     |   |   |   |   |   |   |   |   |   |
| US duplex Doppler transcranial       | Usually not appropriate    |                | Expert<br>Consensus | O 0 mSv         | O 0 mSv<br>[ped]             | 1         | n/a | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

#### Variant 11: Child. Clinical presentation suggestive of acute stroke, sickle cell disease. New focal fixed or worsening neurologic defect. Initial imaging.

| Procedure                    | Appropriateness        | COL      |            |                  |        |        | Final Tabulations |   |   |   |   |   |   |   |   |  |  |  |
|------------------------------|------------------------|----------|------------|------------------|--------|--------|-------------------|---|---|---|---|---|---|---|---|--|--|--|
|                              | Category               | SOE      | Adults RRL | Peds RRL         | Rating | Median | 1                 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |  |  |  |
| MRA head without IV contrast | Usually<br>appropriate | Moderate | O 0 mSv    | O 0 mSv<br>[ped] | 9      | 9      | 1                 | 0 | 0 | 0 | 1 | 1 | 0 | 6 | 9 |  |  |  |

|                                       |                            |                | References          |                 | Study Quality                     |           |   |   |   |   |   |   |   |    |   |    |
|---------------------------------------|----------------------------|----------------|---------------------|-----------------|-----------------------------------|-----------|---|---|---|---|---|---|---|----|---|----|
|                                       |                            |                | 39 (22462697)       | 4               |                                   |           |   |   |   |   |   |   |   |    |   |    |
|                                       |                            |                | 84 (8733975)        |                 | 4                                 |           |   |   |   |   |   |   |   |    |   |    |
|                                       |                            |                | 26 (15703900)       |                 |                                   | 4         |   |   |   |   |   |   |   |    |   |    |
|                                       |                            |                | 44 (24558166)       |                 |                                   | М         |   |   |   |   |   |   |   |    |   |    |
|                                       |                            |                | 85 (24914136)       |                 |                                   |           |   |   |   |   |   |   |   |    |   |    |
| MRI head without IV contrast          | Usua<br>approp             | lly<br>riate   | Expert<br>Consensus | O 0 mSv         | O 0 mSv<br>[ped]                  | 9         | 9 | 1 | 0 | 0 | 0 | 1 | 1 | 0  | 3 | 13 |
| CT head without IV contrast           | Usually<br>appropriate     |                | Limited             | ଝେଝ 1-10<br>mSv | ≎≎≎ 0.3-<br>3 mSv<br>[ped]        | 7         | 7 | 0 | 0 | 0 | 0 | 0 | 1 | 11 | 3 | 3  |
|                                       |                            |                | References          |                 | Study Quality                     |           |   |   |   |   |   |   |   |    |   |    |
|                                       |                            | 26 (15703900)  |                     |                 |                                   |           |   |   |   |   |   |   |   |    |   |    |
| CTA head with IV contrast             | Usually not<br>appropriate |                | Expert<br>Consensus | ଝେଝ 1-10<br>mSv | <b>≎≎≎≎</b> 3-<br>10 mSv<br>[ped] | 2         | 2 | 6 | 5 | 2 | 2 | 2 | 1 | 0  | 0 | 0  |
| CT head with IV contrast              | Usually not<br>appropriate |                | Limited             | ଝଝଝ 1-10<br>mSv | &®⊛ 0.3-<br>3 mSv<br>[ped]        | 2         | 2 | 6 | 5 | 5 | 1 | 1 | 0 | 0  | 1 | 0  |
|                                       |                            |                | References          |                 | Study Quality                     |           |   |   |   |   |   |   |   |    |   |    |
|                                       |                            |                | 26 (15703900)       |                 | 4                                 |           |   |   |   |   |   |   |   |    |   |    |
| CT head without and with IV contrast  | Usually<br>approp          | y not<br>riate | Limited             | ଝେଝ 1-10<br>mSv | ≎≎≎≎ 3-<br>10 mSv<br>[ped]        | 2         | 2 | 8 | 5 | 2 | 2 | 0 | 0 | 1  | 1 | 0  |
|                                       |                            |                | References          |                 | Study                             | v Quality |   |   |   |   |   |   |   |    |   |    |
|                                       |                            |                | 26 (15703900)       |                 |                                   | 4         |   |   |   | - | - |   |   |    |   |    |
| Arteriography cervicocerebral         | Usually<br>approp          | y not<br>riate | Limited             | ଝେଝ 1-10<br>mSv | <b>ଡଡଡଡ</b> 3-<br>10 mSv<br>[ped] | 2         | 2 | 9 | 4 | 2 | 0 | 3 | 1 | 0  | 0 | 0  |
|                                       |                            |                | References          |                 | Study                             | Quality   |   |   |   |   |   |   |   |    |   |    |
|                                       |                            |                | 26 (15703900)       |                 | 4                                 |           |   |   | - | - | - | i |   |    |   |    |
| MRI head without and with IV contrast | Usually<br>approp          | y not<br>riate | Expert<br>Consensus | O 0 mSv         | O 0 mSv<br>[ped]                  | 2         | 2 | 8 | 5 | 4 | 0 | 0 | 0 | 1  | 0 | 0  |

| MRA head with IV contrast      | Usuall<br>approp | y not<br>riate Moderate |                     | O 0 mSv | O 0 mSv<br>[ped] | 2 | 2   | 6 | 6 | 1 | 3 | 2 | 0 | 0 | 0 | 0 |
|--------------------------------|------------------|-------------------------|---------------------|---------|------------------|---|-----|---|---|---|---|---|---|---|---|---|
|                                |                  |                         | References          |         | Study            |   |     |   |   |   |   |   |   |   |   |   |
|                                |                  |                         | 39 (22462697)       |         |                  |   |     |   |   |   |   |   |   |   |   |   |
|                                |                  |                         | 84 (8733975)        |         |                  |   |     |   |   |   |   |   |   |   |   |   |
|                                |                  |                         | 26 (15703900)       |         |                  |   |     |   |   |   |   |   |   |   |   |   |
|                                |                  |                         | 44 (24558166)       |         |                  |   |     |   |   |   |   |   |   |   |   |   |
|                                |                  |                         | 85 (24914136)       |         |                  |   |     |   |   |   |   |   |   |   |   |   |
| MRI head with IV contrast      | Usuall<br>approp | y not<br>oriate         | Expert<br>Consensus | O 0 mSv | O 0 mSv<br>[ped] | 2 | 2   | 9 | 4 | 3 | 1 | 0 | 1 | 0 | 0 | 0 |
| US duplex Doppler transcranial | Usuall<br>approp | y not<br>oriate         | Limited             | O 0 mSv | O 0 mSv<br>[ped] | 2 | n/a | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

#### **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.