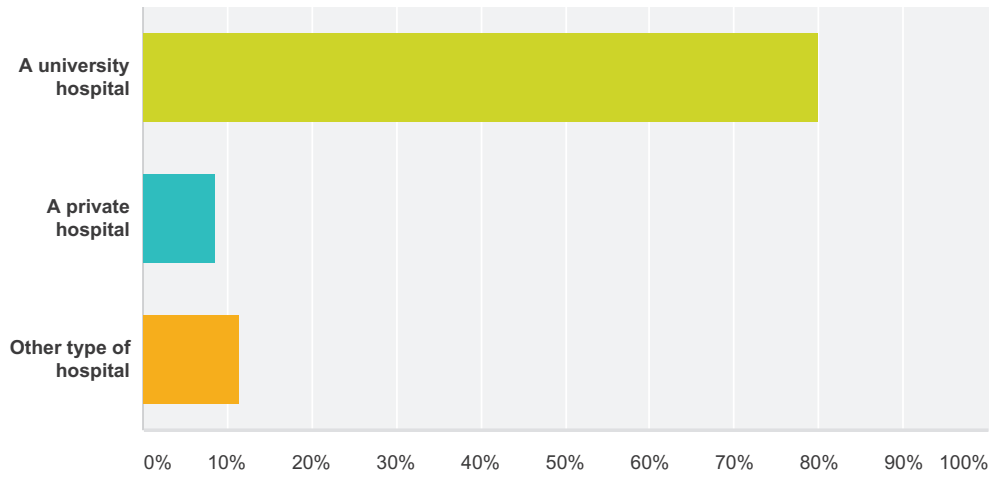


Q1 Is your Institution :

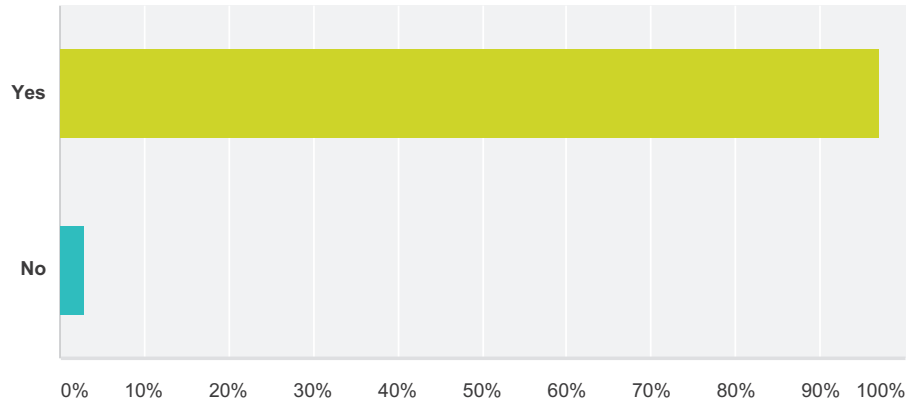
Answered: 35 Skipped: 0



| Answer Choices | Responses | |
|------------------------|-----------|-----------|
| A university hospital | 80.00% | 28 |
| A private hospital | 8.57% | 3 |
| Other type of hospital | 11.43% | 4 |
| Total | | 35 |

Q4 Would you be comfortable if we acknowledge your centre in the Europace Journal and on the Website?

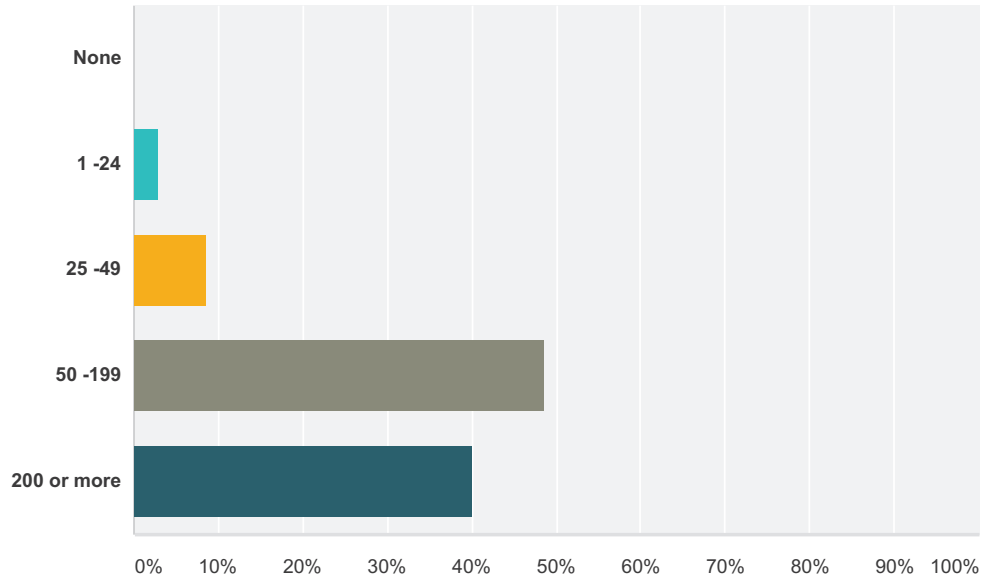
Answered: 35 Skipped: 0



| Answer Choices | Responses | |
|----------------|-----------|-----------|
| Yes | 97.14% | 34 |
| No | 2.86% | 1 |
| Total | | 35 |

Q5 Number of ICD implantations (Including CRT-Ds) at your institution (including box changes) last calendar year :

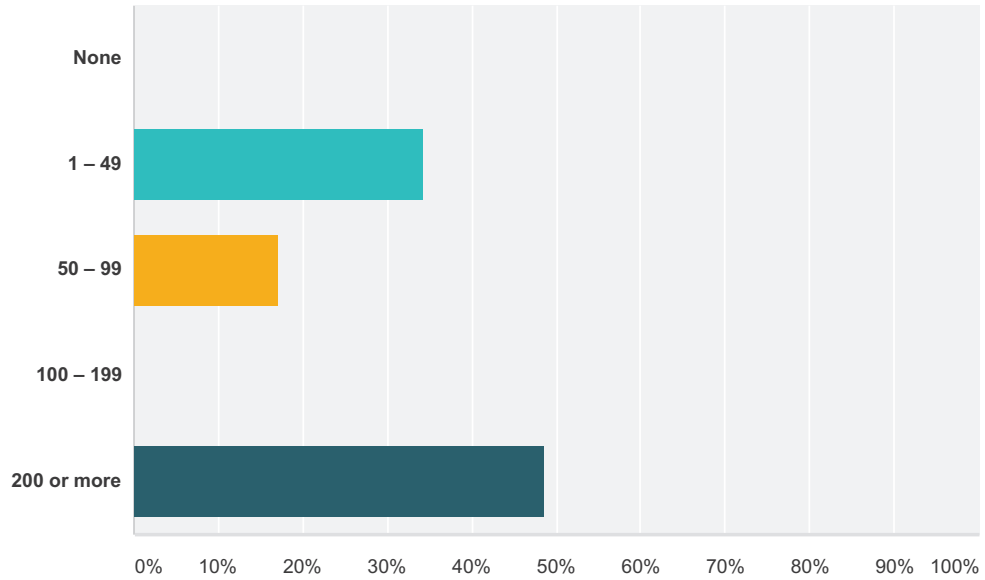
Answered: 35 Skipped: 0



| Answer Choices | Responses | |
|----------------|-----------|-----------|
| None | 0.00% | 0 |
| 1 -24 | 2.86% | 1 |
| 25 -49 | 8.57% | 3 |
| 50 -199 | 48.57% | 17 |
| 200 or more | 40.00% | 14 |
| Total | | 35 |

Q6 Total number of left atrial catheter ablations (all types of arrhythmia) at your institution last calendar year:

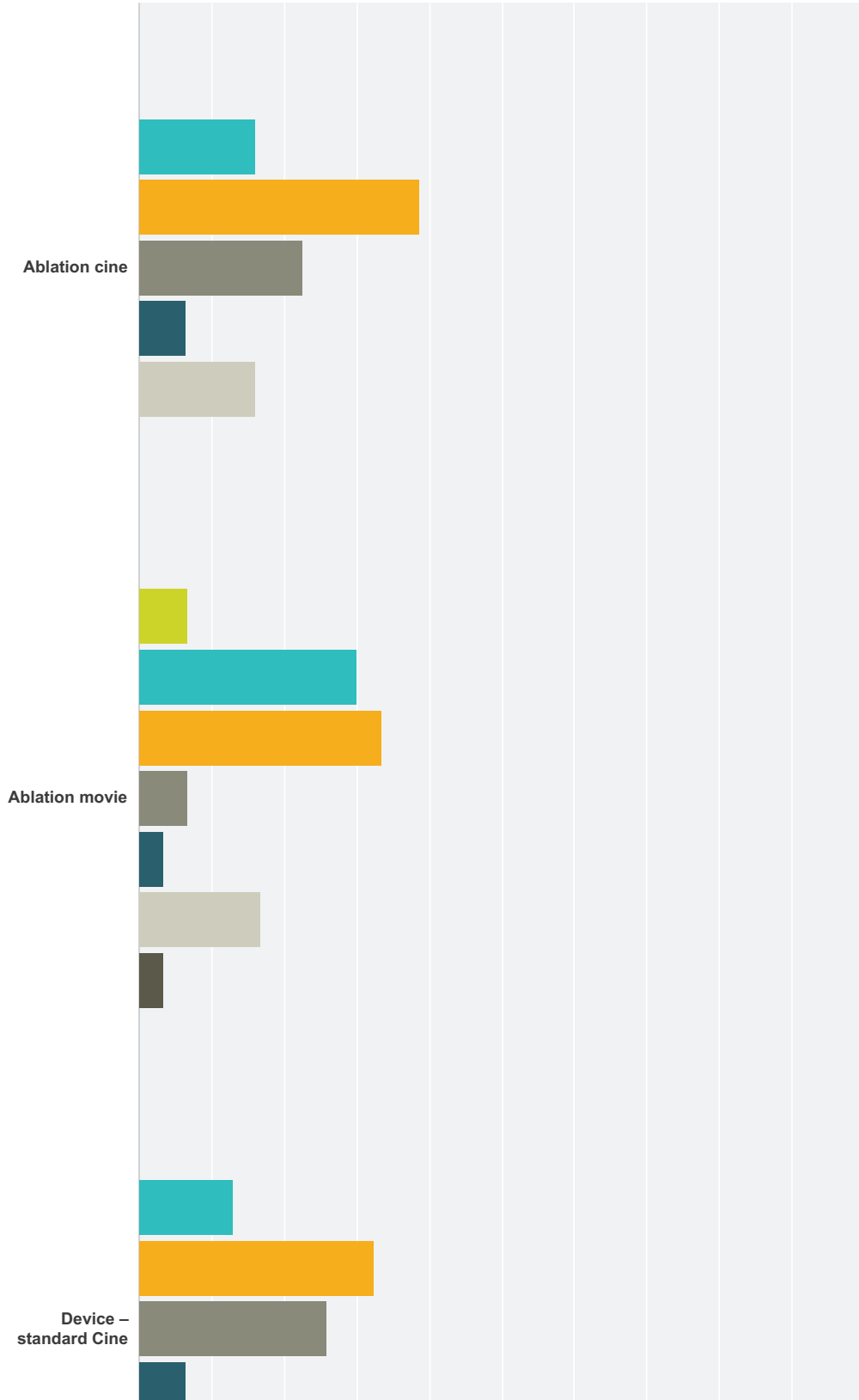
Answered: 35 Skipped: 0



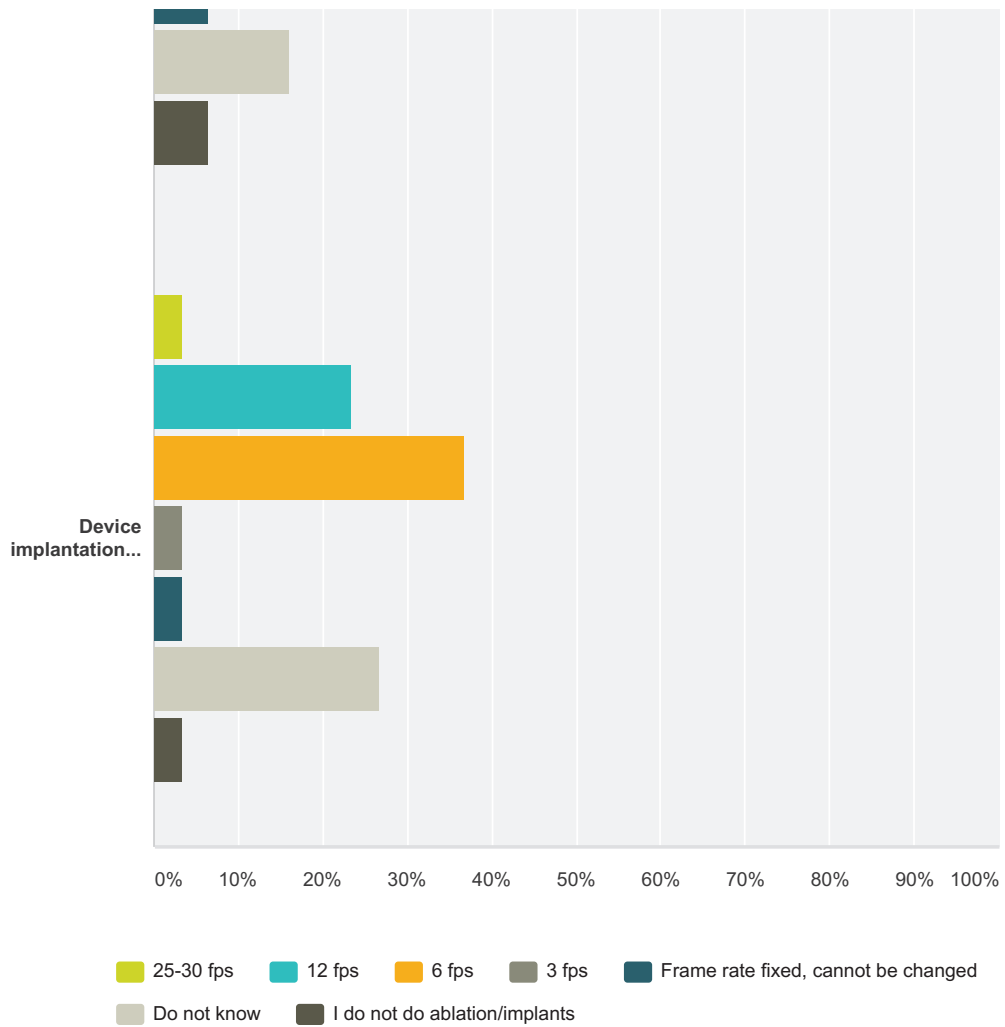
| Answer Choices | Responses |
|----------------|-----------|
| None | 0.00% 0 |
| 1 – 49 | 34.29% 12 |
| 50 – 99 | 17.14% 6 |
| 100 – 199 | 0.00% 0 |
| 200 or more | 48.57% 17 |
| Total | 35 |

Q7 What frame rate of pulsed fluoroscopy do you choose for:

Answered: 31 Skipped: 4



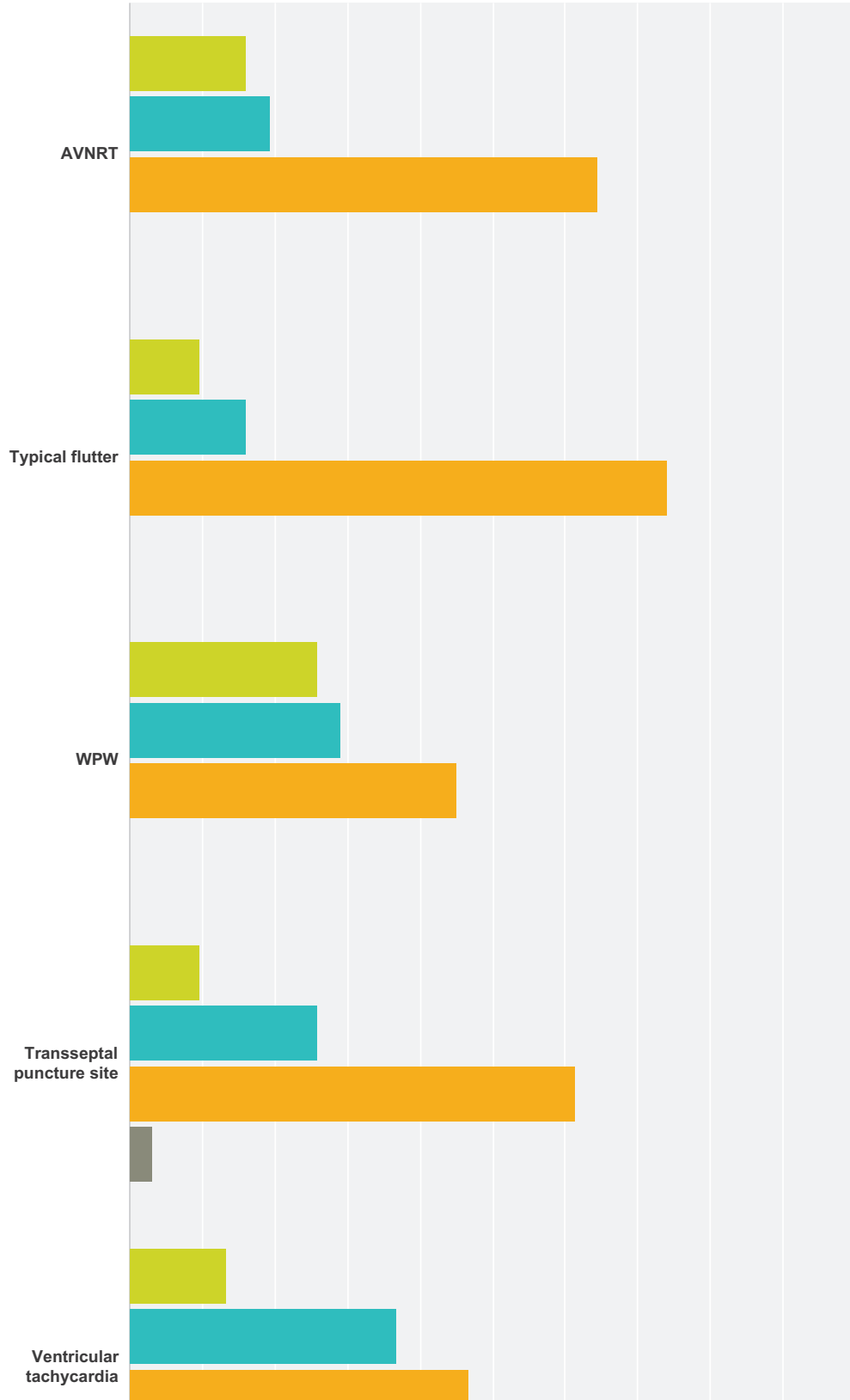
EP Wire – Routines for fluoroscopy use in EP - Clinical practice in Europe



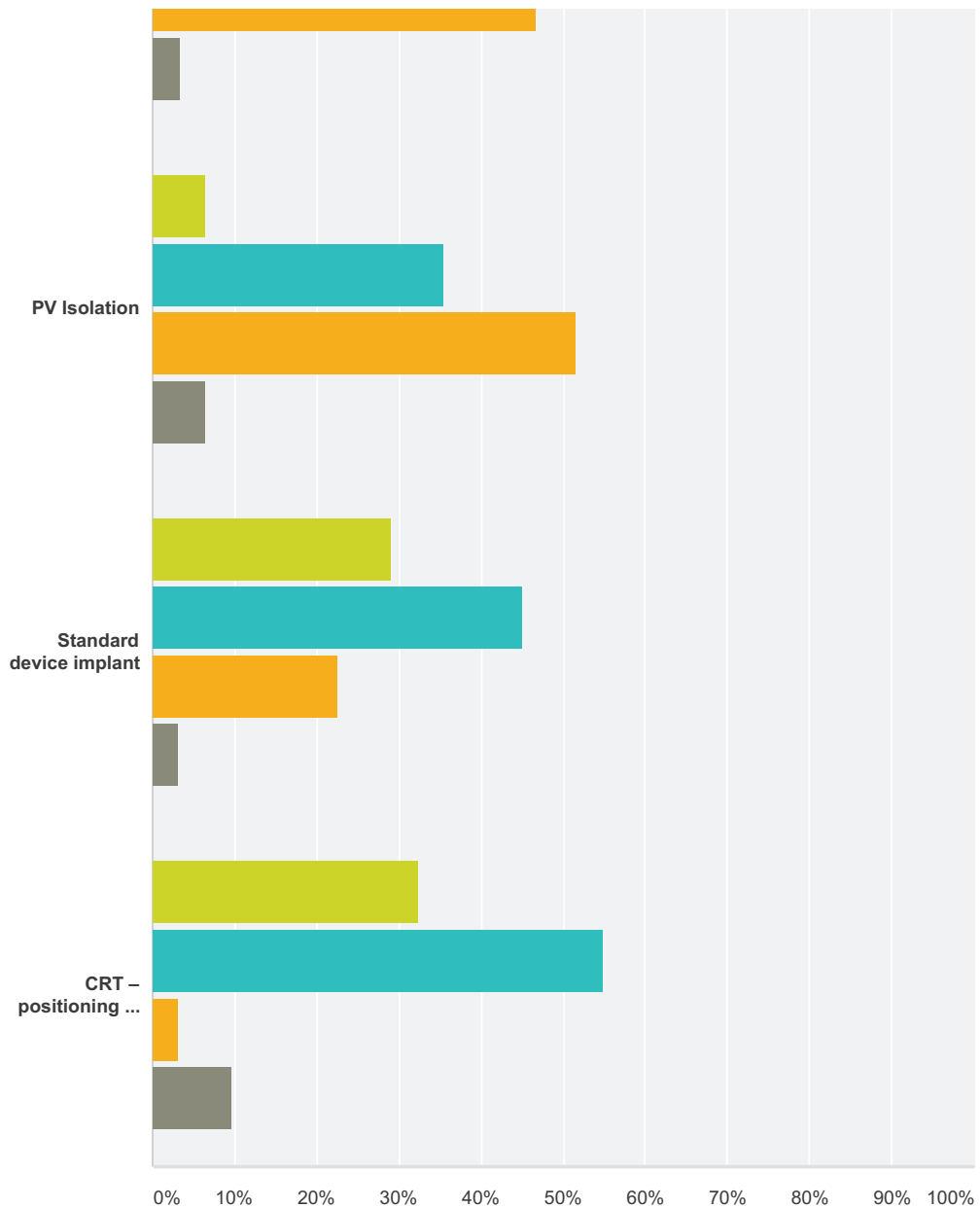
| | 25-30 fps | 12 fps | 6 fps | 3 fps | Frame rate fixed, cannot be changed | Do not know | I do not do ablation/implants | Total |
|---------------------------|------------|-------------|--------------|-------------|-------------------------------------|-------------|-------------------------------|-------|
| Ablation cine | 0.00% 0 | 16.13% 5 | 38.71% 12 | 22.58% 7 | 6.45% 2 | 16.13% 5 | 0.00% 0 | 31 |
| Ablation movie | 6.67% 2 | 30.00% 9 | 33.33% 10 | 6.67% 2 | 3.33% 1 | 16.67% 5 | 3.33% 1 | 30 |
| Device – standard Cine | 0.00% 0 | 12.90% 4 | 32.26% 10 | 25.81% 8 | 6.45% 2 | 16.13% 5 | 6.45% 2 | 31 |
| Device implantation Movie | 3.33% 1 | 23.33% 7 | 36.67% 11 | 3.33% 1 | 3.33% 1 | 26.67% 8 | 3.33% 1 | 30 |

Q8 How do you minimize fluroscopy in different settings:

Answered: 31 Skipped: 4



EP Wire – Routines for fluoroscopy use in EP - Clinical practice in Europe



- I document the successful ablation site with cine
- I document the successful ablation site as fluoroscopic movies
- I do not document (save) any images at all
- I do not provide that kind of ablation/implants

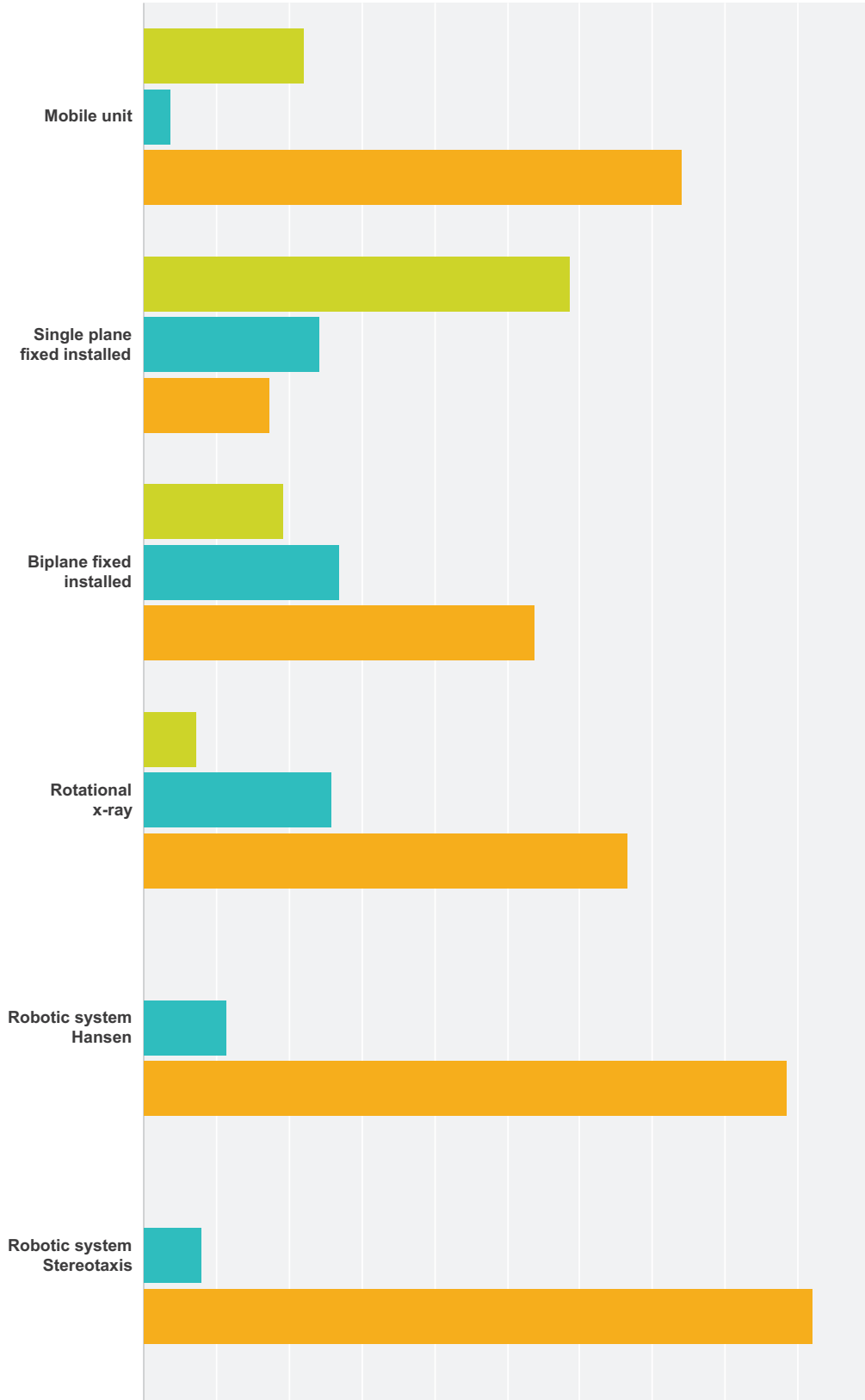
| | I document the successful ablation site with cine | I document the successful ablation site as fluoroscopic movies | I do not document (save) any images at all | I do not provide that kind of ablation/implants | Total |
|-----------------|---|--|--|---|-------|
| AVNRT | 16.13% 5 | 19.35% 6 | 64.52% 20 | 0.00% 0 | 31 |
| Typical flutter | 9.68% 3 | 16.13% 5 | 74.19% 23 | 0.00% 0 | 31 |

EP Wire – Routines for fluoroscopy use in EP - Clinical practice in Europe

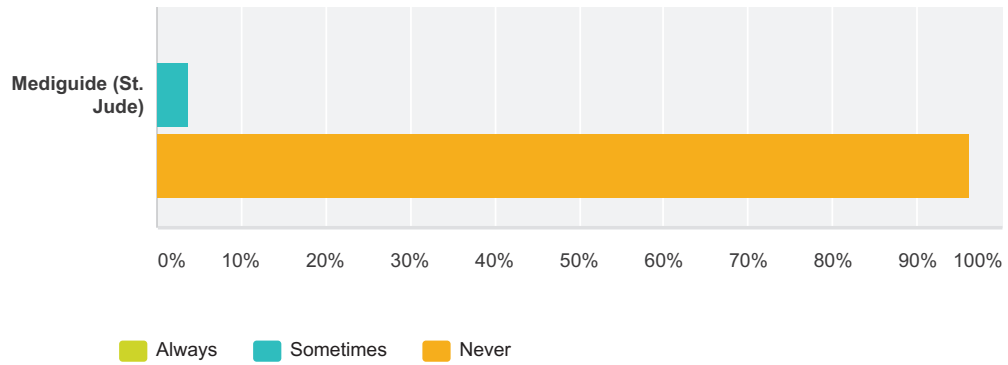
| | | | | | |
|----------------------------------|---------------------|---------------------|---------------------|-------------------|----|
| WPW | 25.81% 8 | 29.03% 9 | 45.16% 14 | 0.00% 0 | 31 |
| Transseptal puncture site | 9.68% 3 | 25.81% 8 | 61.29% 19 | 3.23% 1 | 31 |
| Ventricular tachycardia | 13.33% 4 | 36.67% 11 | 46.67% 14 | 3.33% 1 | 30 |
| PV Isolation | 6.45% 2 | 35.48% 11 | 51.61% 16 | 6.45% 2 | 31 |
| Standard device implant | 29.03% 9 | 45.16% 14 | 22.58% 7 | 3.23% 1 | 31 |
| CRT – positioning of the CS lead | 32.26% 10 | 54.84% 17 | 3.23% 1 | 9.68% 3 | 31 |

Q9 What kind of X-ray imaging device do/can you use in EP and Ablation?

Answered: 31 Skipped: 4



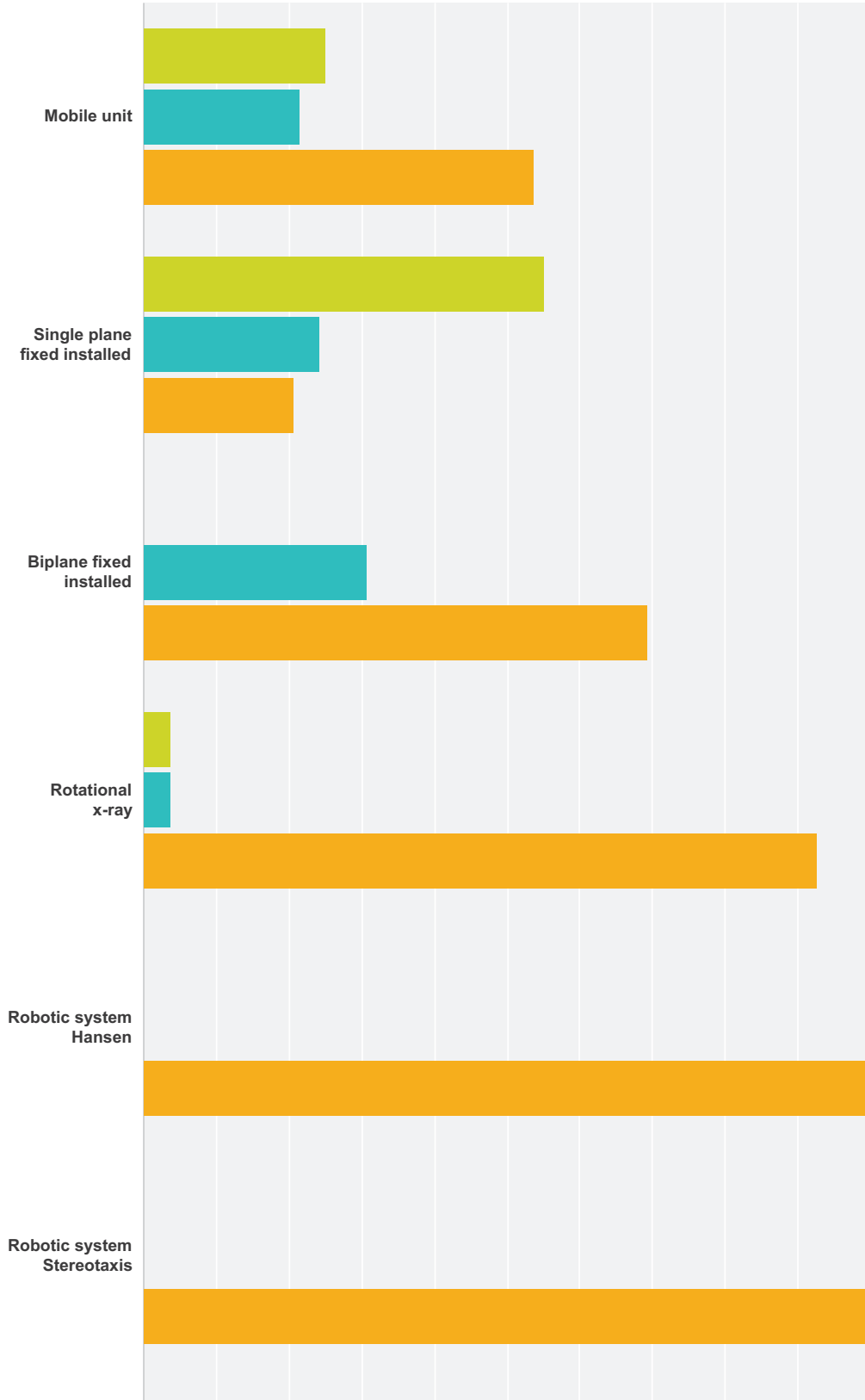
EP Wire – Routines for fluoroscopy use in EP - Clinical practice in Europe



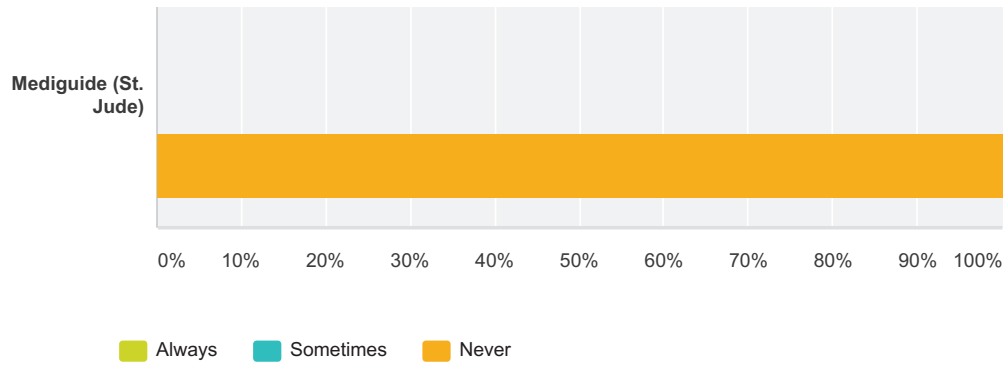
| | Always | Sometimes | Never | Total |
|------------------------------|--------------|-------------|--------------|-------|
| Mobile unit | 22.22% 6 | 3.70% 1 | 74.07% 20 | 27 |
| Single plane fixed installed | 58.62% 17 | 24.14% 7 | 17.24% 5 | 29 |
| Biplane fixed installed | 19.23% 5 | 26.92% 7 | 53.85% 14 | 26 |
| Rotational x-ray | 7.41% 2 | 25.93% 7 | 66.67% 18 | 27 |
| Robotic system Hansen | 0.00% 0 | 11.54% 3 | 88.46% 23 | 26 |
| Robotic system Stereotaxis | 0.00% 0 | 8.00% 2 | 92.00% 23 | 25 |
| Mediguidance (St. Jude) | 0.00% 0 | 3.85% 1 | 96.15% 25 | 26 |

Q10 What kind of X-ray imaging device do/can you use during device implantation?

Answered: 31 Skipped: 4



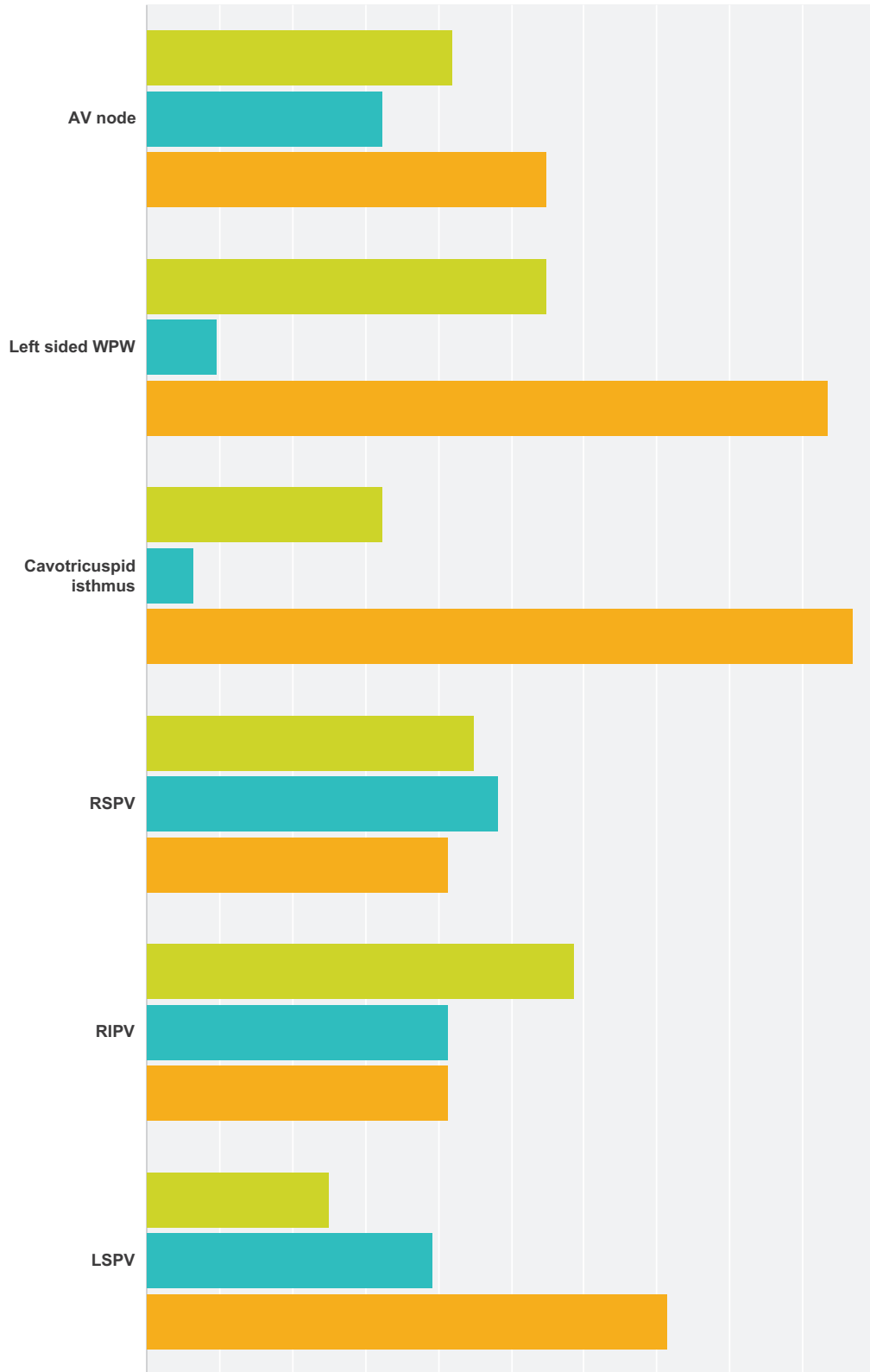
EP Wire – Routines for fluoroscopy use in EP - Clinical practice in Europe



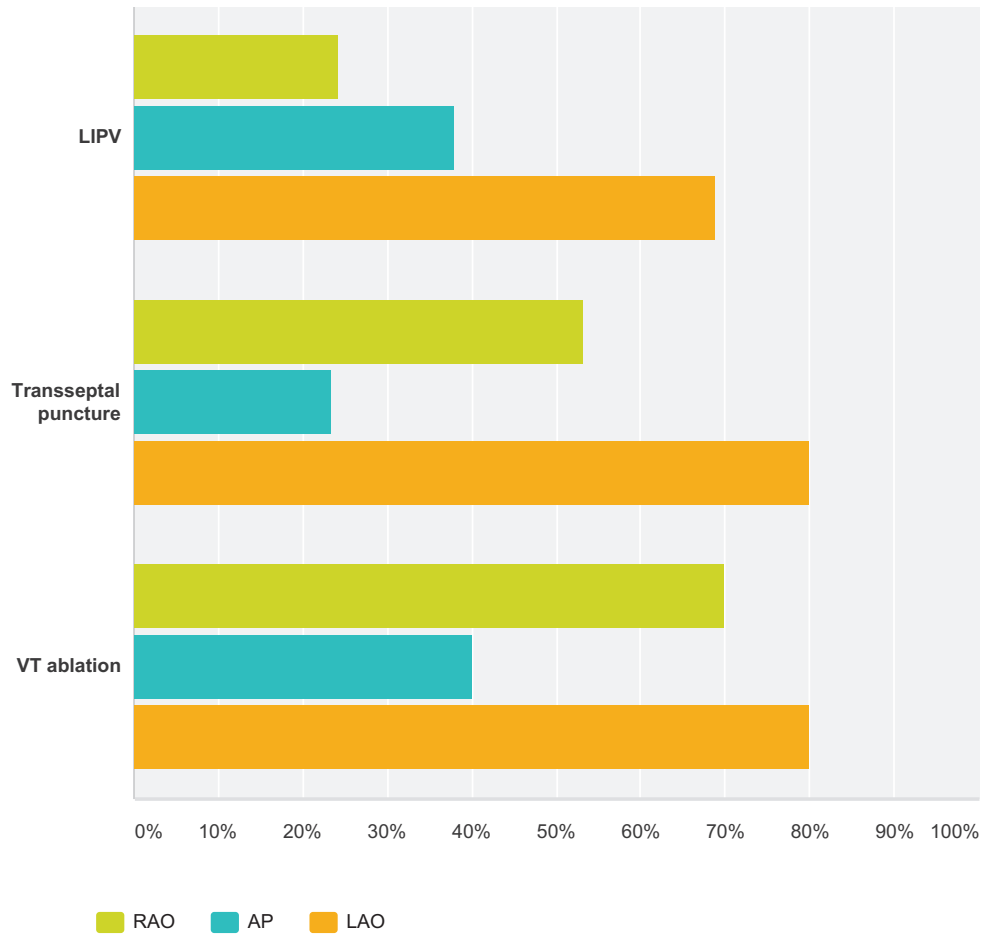
| | Always | Sometimes | Never | Total |
|------------------------------|--------------|-------------|---------------|-------|
| Mobile unit | 25.00% 7 | 21.43% 6 | 53.57% 15 | 28 |
| Single plane fixed installed | 55.17% 16 | 24.14% 7 | 20.69% 6 | 29 |
| Biplane fixed installed | 0.00% 0 | 30.77% 8 | 69.23% 18 | 26 |
| Rotational x-ray | 3.70% 1 | 3.70% 1 | 92.59% 25 | 27 |
| Robotic system Hansen | 0.00% 0 | 0.00% 0 | 100.00% 26 | 26 |
| Robotic system Stereotaxis | 0.00% 0 | 0.00% 0 | 100.00% 25 | 25 |
| Mediguidance (St. Jude) | 0.00% 0 | 0.00% 0 | 100.00% 26 | 26 |

Q11 What planes do you routinely use for the different ablation targets? (multiple answers possible)

Answered: 31 Skipped: 4



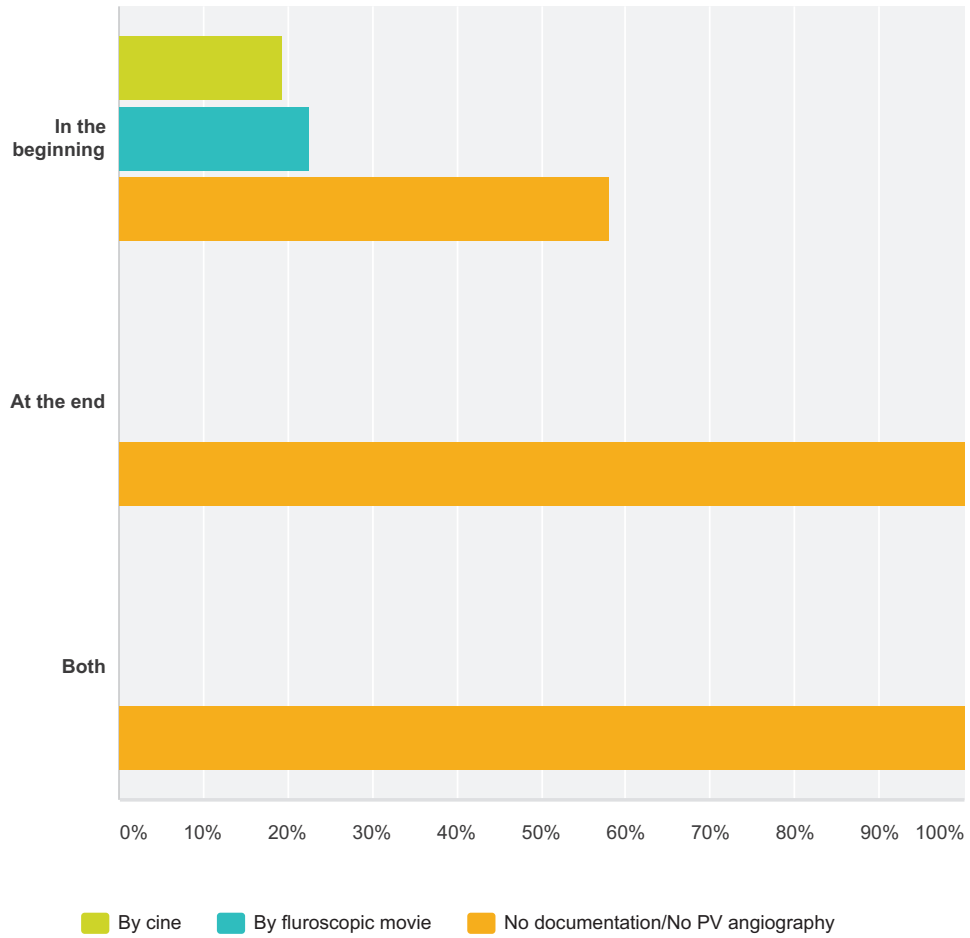
EP Wire – Routines for fluoroscopy use in EP - Clinical practice in Europe



| | RAO | AP | LAO | Total Respondents |
|-----------------------|--------------|--------------|--------------|-------------------|
| AV node | 41.94% 13 | 32.26% 10 | 54.84% 17 | 31 |
| Left sided WPW | 54.84% 17 | 9.68% 3 | 93.55% 29 | 31 |
| Cavotricuspid isthmus | 32.26% 10 | 6.45% 2 | 96.77% 30 | 31 |
| RSPV | 44.83% 13 | 48.28% 14 | 41.38% 12 | 29 |
| RIPV | 58.62% 17 | 41.38% 12 | 41.38% 12 | 29 |
| LSPV | 25.00% 7 | 39.29% 11 | 71.43% 20 | 28 |
| LIPV | 24.14% 7 | 37.93% 11 | 68.97% 20 | 29 |
| Transseptal puncture | 53.33% 16 | 23.33% 7 | 80.00% 24 | 30 |
| VT ablation | 70.00% 21 | 40.00% 12 | 80.00% 24 | 30 |

Q12 In procedures for atrial fibrillation do you routinely perform PV Angiography

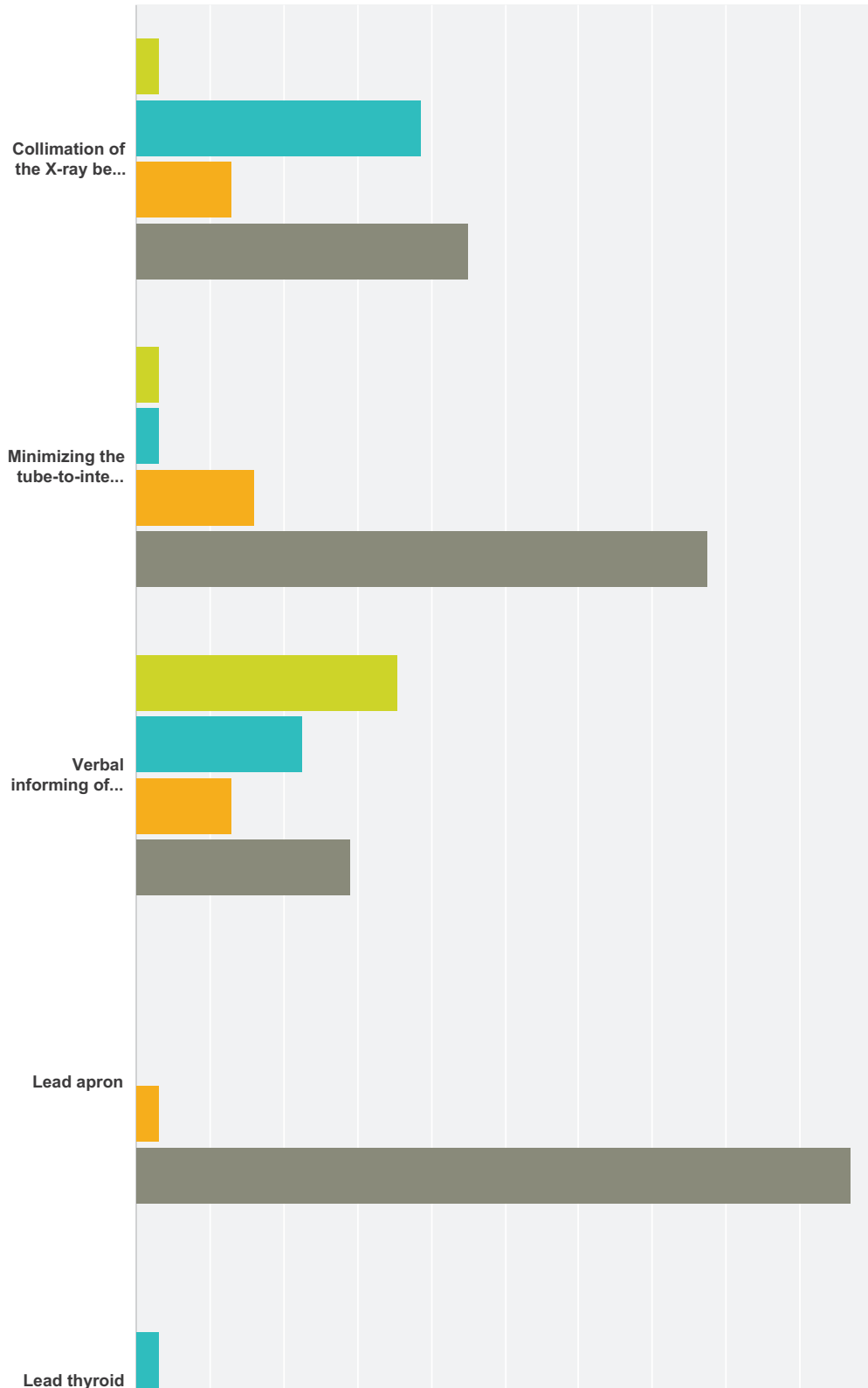
Answered: 31 Skipped: 4



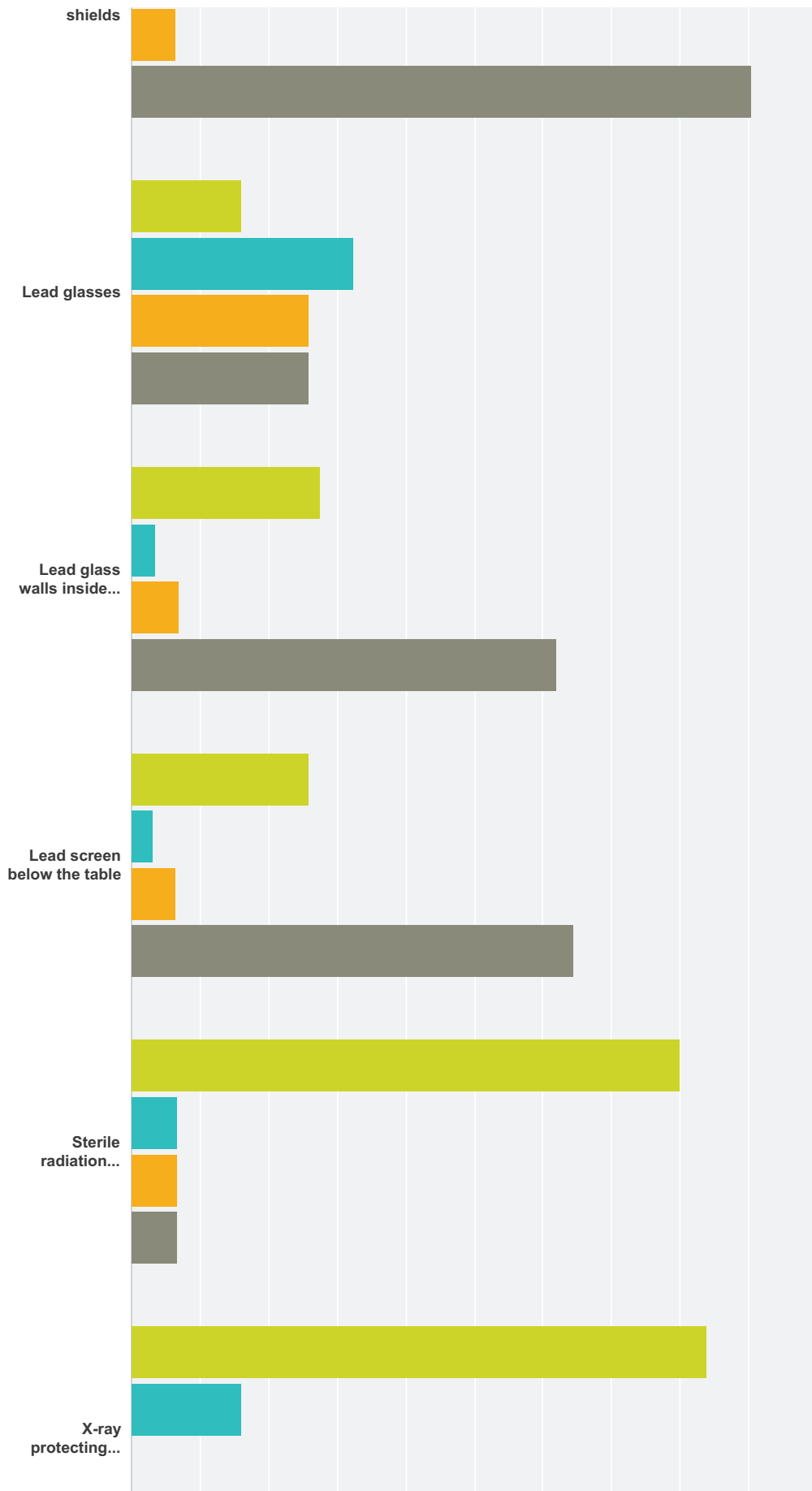
| | By cine | By fluroscopic movie | No documentation/No PV angiography | Total |
|------------------|-------------|----------------------|------------------------------------|-------|
| In the beginning | 19.35% 6 | 22.58% 7 | 58.06% 18 | 31 |
| At the end | 0.00% 0 | 0.00% 0 | 100.00% 29 | 29 |
| Both | 0.00% 0 | 0.00% 0 | 100.00% 25 | 25 |

Q13 What kind of safety measures do you use to minimize radiation of the operating/ablating physician?

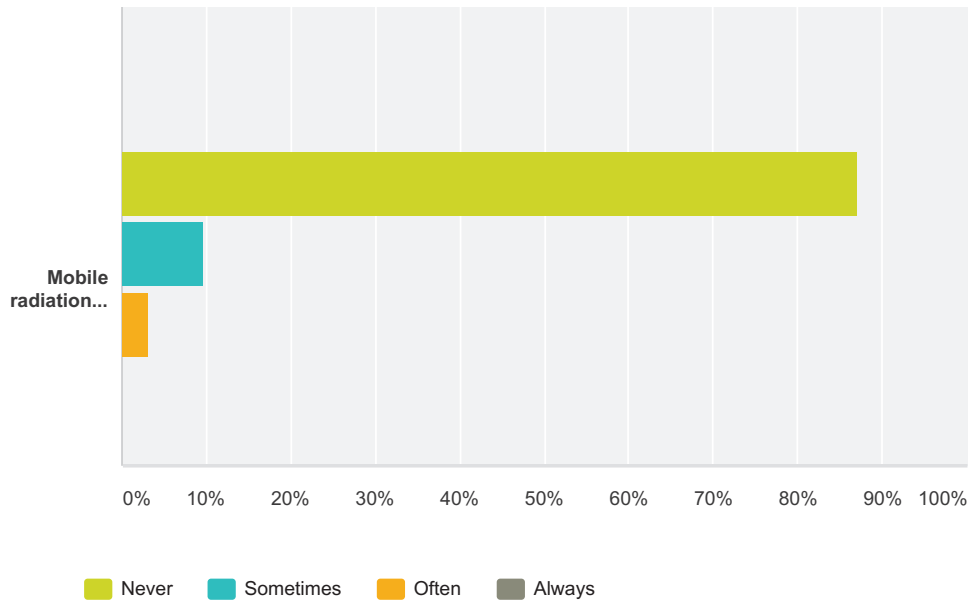
Answered: 31 Skipped: 4



EP Wire – Routines for fluoroscopy use in EP - Clinical practice in Europe



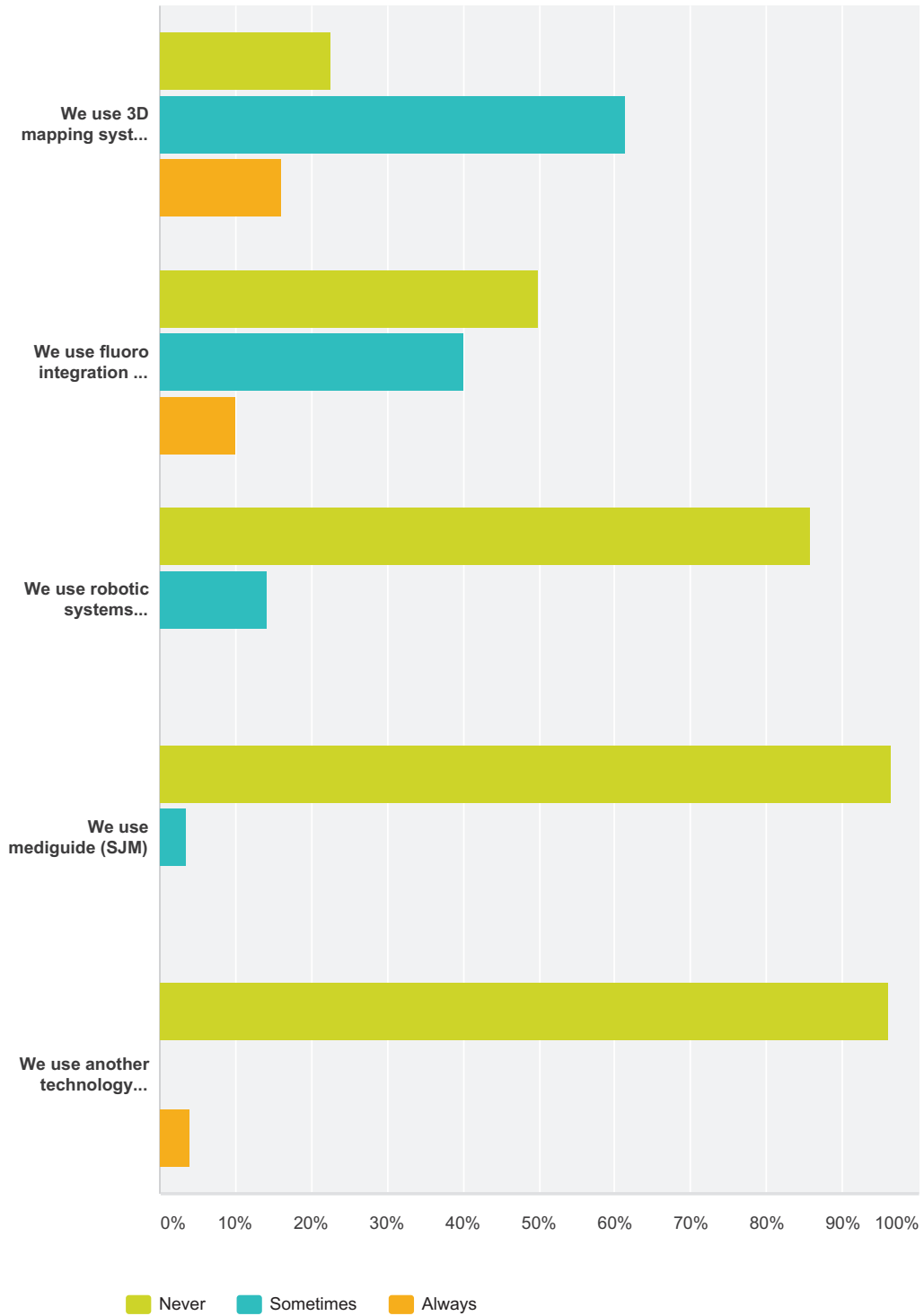
EP Wire – Routines for fluoroscopy use in EP - Clinical practice in Europe



| | Never | Sometimes | Often | Always | Total |
|--|--------------|--------------|-------------|--------------|-------|
| Collimation of the X-ray beam (narrowing the diaphragm) | 3.23% 1 | 38.71% 12 | 12.90% 4 | 45.16% 14 | 31 |
| Minimizing the tube-to-intensifier distance | 3.23% 1 | 3.23% 1 | 16.13% 5 | 77.42% 24 | 31 |
| Verbal informing of previous fluoroscopy times | 35.48% 11 | 22.58% 7 | 12.90% 4 | 29.03% 9 | 31 |
| Lead apron | 0.00% 0 | 0.00% 0 | 3.23% 1 | 96.77% 30 | 31 |
| Lead thyroid shields | 0.00% 0 | 3.23% 1 | 6.45% 2 | 90.32% 28 | 31 |
| Lead glasses | 16.13% 5 | 32.26% 10 | 25.81% 8 | 25.81% 8 | 31 |
| Lead glass walls inside the lab | 27.59% 8 | 3.45% 1 | 6.90% 2 | 62.07% 18 | 29 |
| Lead screen below the table | 25.81% 8 | 3.23% 1 | 6.45% 2 | 64.52% 20 | 31 |
| Sterile radiation absorbing pads placed near (around) the device pocket incision | 80.00% 24 | 6.67% 2 | 6.67% 2 | 6.67% 2 | 30 |
| X-ray protecting sterile gloves | 83.87% 26 | 16.13% 5 | 0.00% 0 | 0.00% 0 | 31 |
| Mobile radiation protection cabine (e.g. CathPax)? | 87.10% 27 | 9.68% 3 | 3.23% 1 | 0.00% 0 | 31 |

Q14 What kind of other technology can you use to minimize radiation?

Answered: 31 Skipped: 4



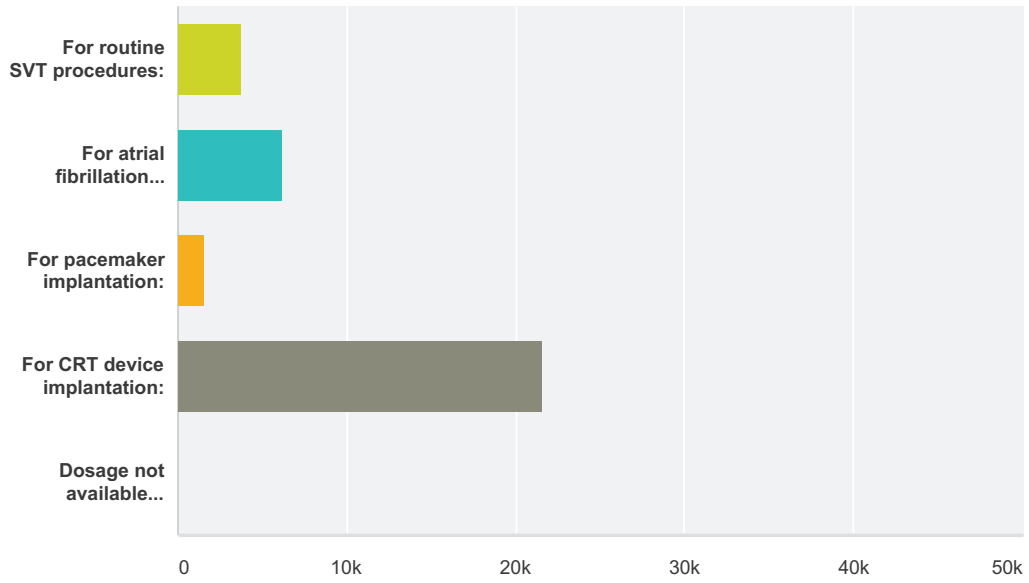
| | Never | Sometimes | Always | Total |
|--|-------|-----------|--------|-------|
|--|-------|-----------|--------|-------|

EP Wire – Routines for fluoroscopy use in EP - Clinical practice in Europe

| | | | | |
|---|---------------------|---------------------|--------------------|----|
| We use 3D mapping systems in routine cases | 22.58% 7 | 61.29% 19 | 16.13% 5 | 31 |
| We use fluoro integration in our 3D mapping system univu (Biosense Webster) | 50.00% 15 | 40.00% 12 | 10.00% 3 | 30 |
| We use robotic systems (Stereotaxis, Hansen) | 85.71% 24 | 14.29% 4 | 0.00% 0 | 28 |
| We use mediguide (SJM) | 96.43% 27 | 3.57% 1 | 0.00% 0 | 28 |
| We use another technology (Please specify in the box below) | 96.00% 24 | 0.00% 0 | 4.00% 1 | 25 |

Q15 What is the mean radiation dosage in mGym² in your EP lab?

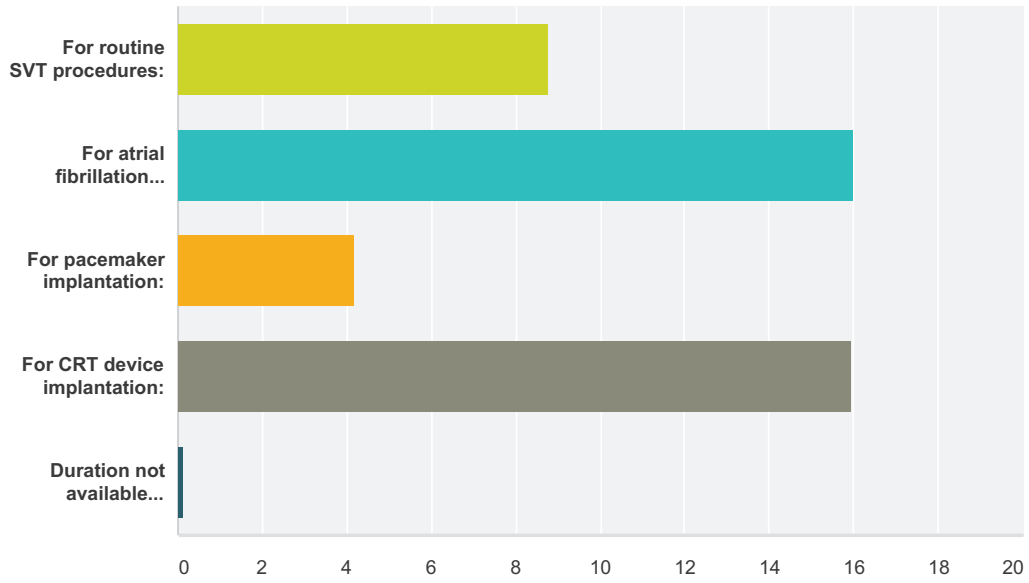
Answered: 23 Skipped: 12



| Answer Choices | Average Number | Total Number | Responses |
|--|----------------|--------------|-----------|
| For routine SVT procedures: | 3,752 | 52,526 | 14 |
| For atrial fibrillation ablation: | 6,182 | 86,551 | 14 |
| For pacemaker implantation: | 1,562 | 21,868 | 14 |
| For CRT device implantation: | 21,611 | 302,548 | 14 |
| Dosage not available (please indicate 0) | 1 | 10 | 19 |
| Total Respondents: 23 | | | |

Q16 What is the mean fluoroscopy duration (in minutes) in your EP lab ?

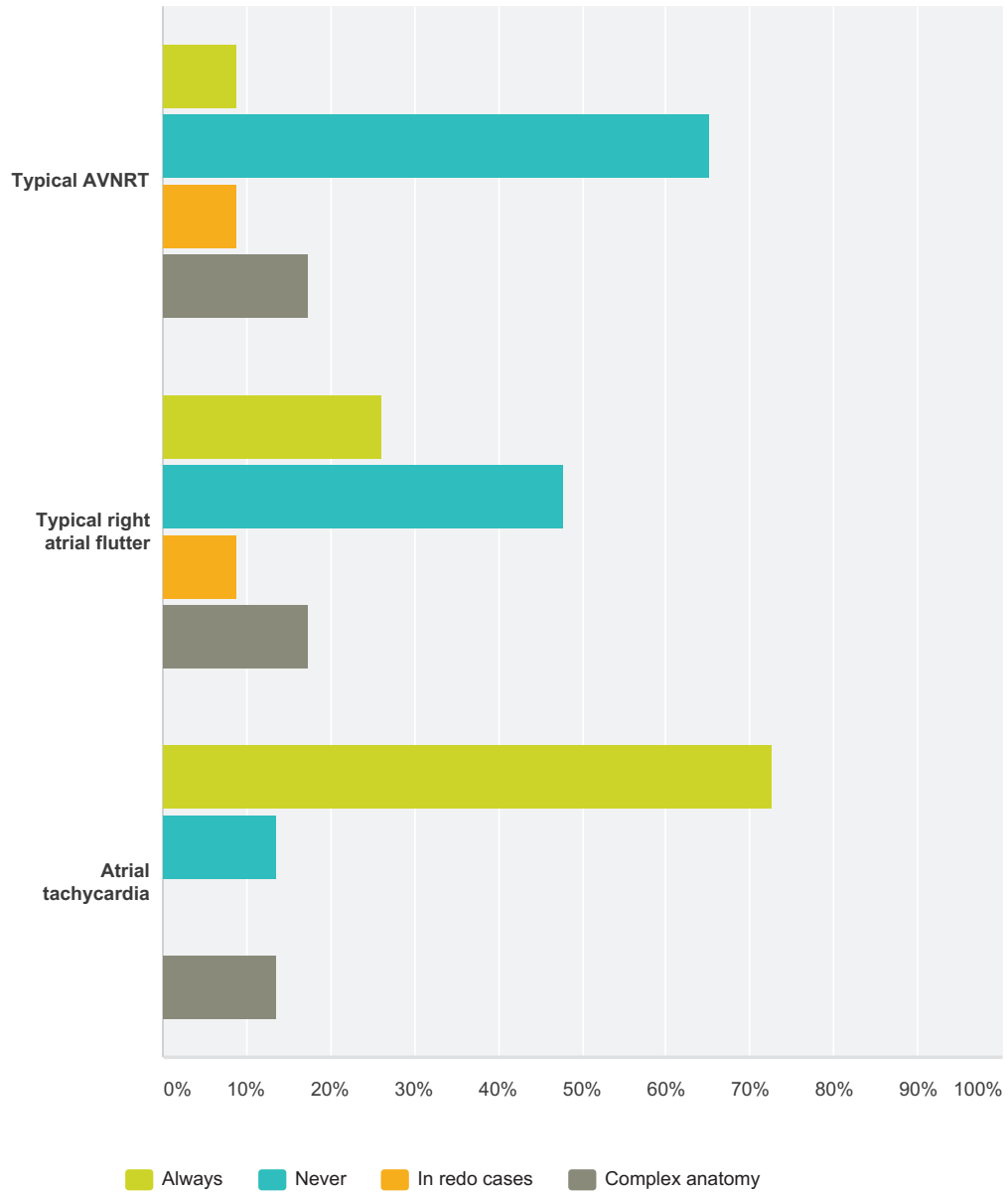
Answered: 23 Skipped: 12



| Answer Choices | Average Number | Total Number | Responses |
|--|----------------|--------------|-----------|
| For routine SVT procedures: | 9 | 175 | 20 |
| For atrial fibrillation ablation: | 16 | 320 | 20 |
| For pacemaker implantation: | 4 | 79 | 19 |
| For CRT device implantation: | 16 | 303 | 19 |
| Duration not available (Please Indicate 0) | 0 | 1 | 9 |
| Total Respondents: 23 | | | |

Q17 Do you use electroanatomic mapping during catheter ablation?

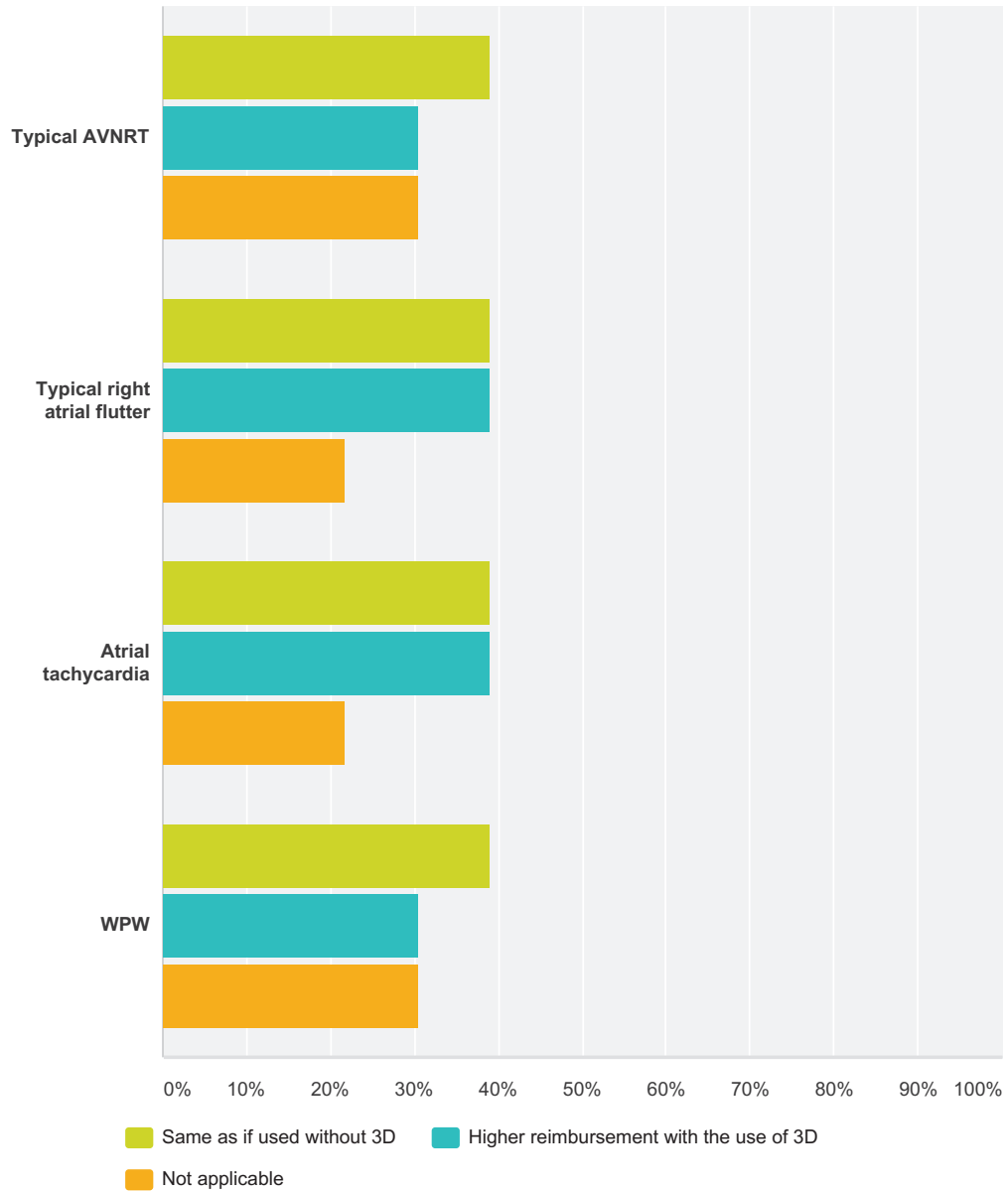
Answered: 23 Skipped: 12



| | Always | Never | In redo cases | Complex anatomy | Total |
|------------------------------|--------------|--------------|---------------|-----------------|-------|
| Typical AVNRT | 8.70% 2 | 65.22% 15 | 8.70% 2 | 17.39% 4 | 23 |
| Typical right atrial flutter | 26.09% 6 | 47.83% 11 | 8.70% 2 | 17.39% 4 | 23 |
| Atrial tachycardia | 72.73% 16 | 13.64% 3 | 0.00% 0 | 13.64% 3 | 22 |

Q18 If you use 3D Mapping for the different arrhythmias how is it reimbursed?

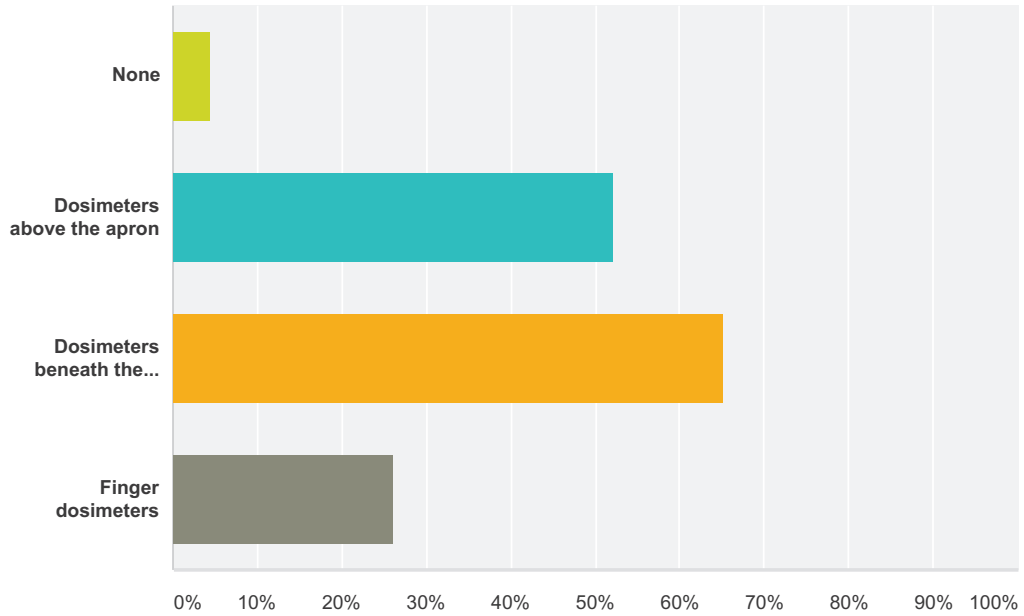
Answered: 23 Skipped: 12



| | Same as if used without 3D | Higher reimbursement with the use of 3D | Not applicable | Total |
|------------------------------|----------------------------|---|----------------|-------|
| Typical AVNRT | 39.13% 9 | 30.43% 7 | 30.43% 7 | 23 |
| Typical right atrial flutter | 39.13% 9 | 39.13% 9 | 21.74% 5 | 23 |
| Atrial tachycardia | 39.13% 9 | 39.13% 9 | 21.74% 5 | 23 |
| WPW | 39.13% 9 | 30.43% 7 | 30.43% 7 | 23 |

Q19 For operating/ablating physicians, what dosimeters are used for routine monitoring? (multiple choice possible)

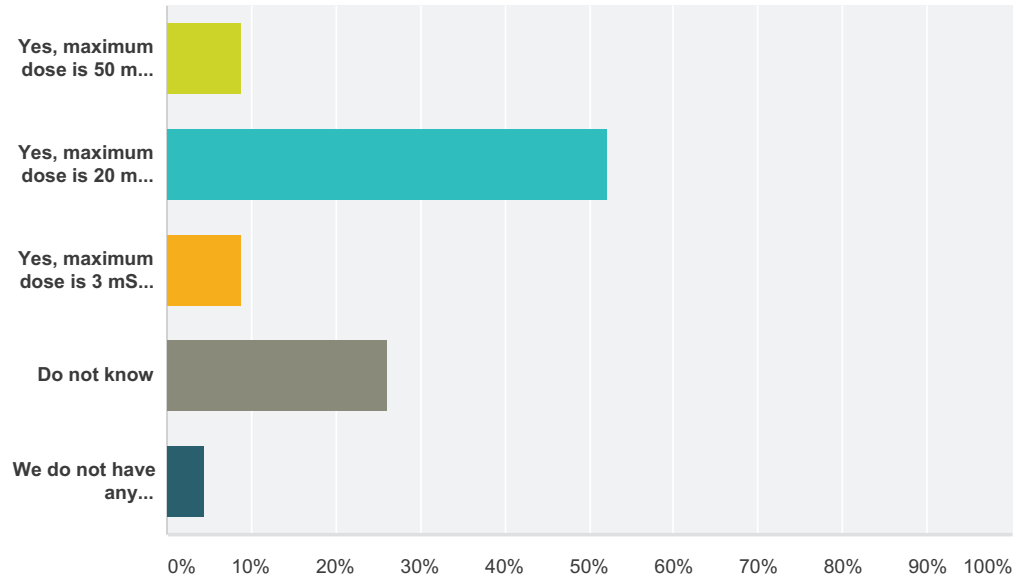
Answered: 23 Skipped: 12



| Answer Choices | Responses |
|------------------------------|-----------|
| None | 4.35% 1 |
| Dosimeters above the apron | 52.17% 12 |
| Dosimeters beneath the apron | 65.22% 15 |
| Finger dosimeters | 26.09% 6 |
| Total Respondents: 23 | |

Q20 Is there any monthly/yearly radiation exposure limit for implanting/ablation physicians?

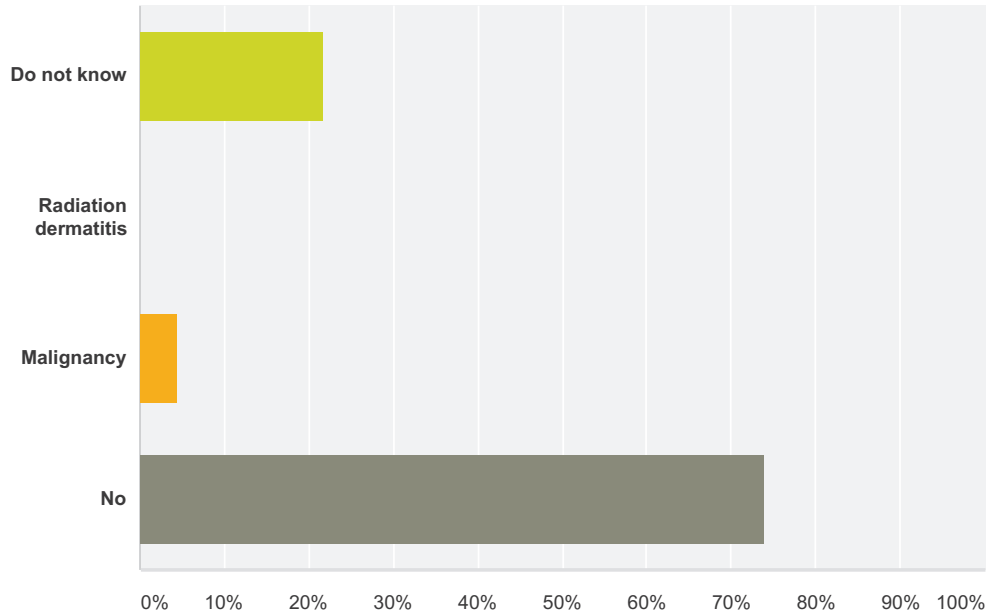
Answered: 23 Skipped: 12



| Answer Choices | Responses |
|---|-----------|
| Yes, maximum dose is 50 mSv per year | 8.70% 2 |
| Yes, maximum dose is 20 mSv per year | 52.17% 12 |
| Yes, maximum dose is 3 mSv per month | 8.70% 2 |
| Do not know | 26.09% 6 |
| We do not have any monthly/yearly limit | 4.35% 1 |
| Total | 23 |

Q21 Did someone of your electrophysiology colleagues have suffered illness probably attributable to occupational radiation?

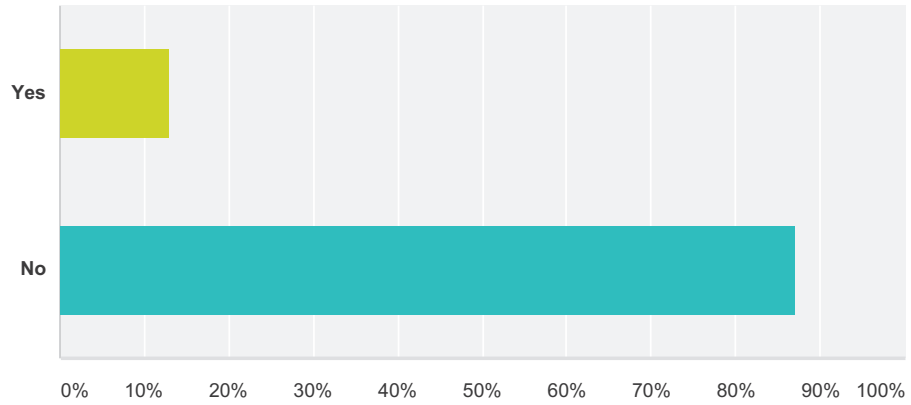
Answered: 23 Skipped: 12



| Answer Choices | Responses | |
|----------------------|-----------|-----------|
| Do not know | 21.74% | 5 |
| Radiation dermatitis | 0.00% | 0 |
| Malignancy | 4.35% | 1 |
| No | 73.91% | 17 |
| Total | | 23 |

Q22 Did some of your patients suffer from the radiation dermatitis after electrophysiology procedure?

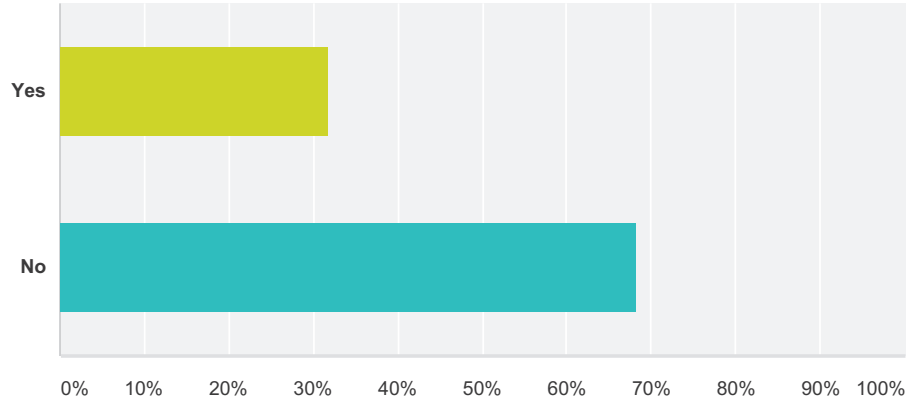
Answered: 23 Skipped: 12



| Answer Choices | Responses | |
|----------------|-----------|-----------|
| Yes | 13.04% | 3 |
| No | 86.96% | 20 |
| Total | | 23 |

Q23 Do you work with X-ray technician during the procedure?

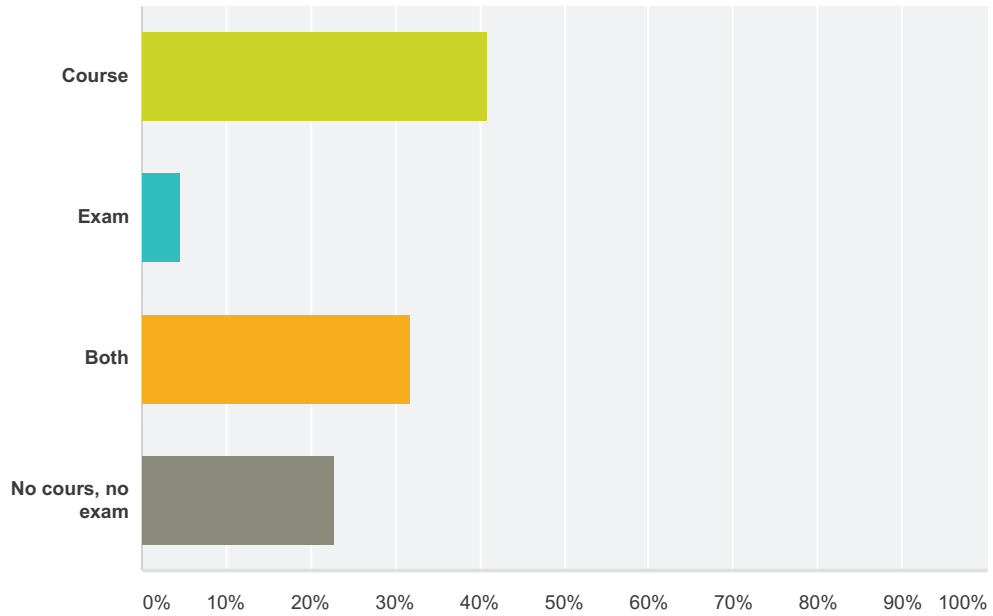
Answered: 22 Skipped: 13



| Answer Choices | Responses | |
|----------------|-----------|-----------|
| Yes | 31.82% | 7 |
| No | 68.18% | 15 |
| Total | | 22 |

Q24 Physicians using X ray must be certified before using X ray

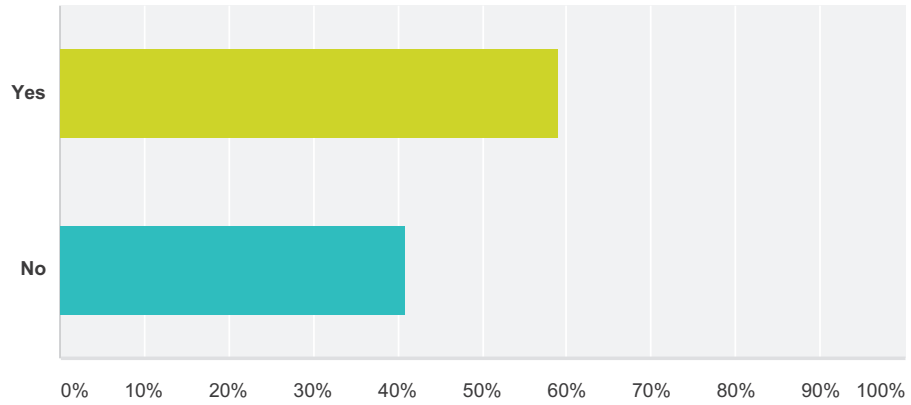
Answered: 22 Skipped: 13



| Answer Choices | Responses | |
|-------------------|-----------|-----------|
| Course | 40.91% | 9 |
| Exam | 4.55% | 1 |
| Both | 31.82% | 7 |
| No cours, no exam | 22.73% | 5 |
| Total | | 22 |

Q25 In your hospital, are yearly health check-ups mandatory for people working with X-ray in the cardiology department?

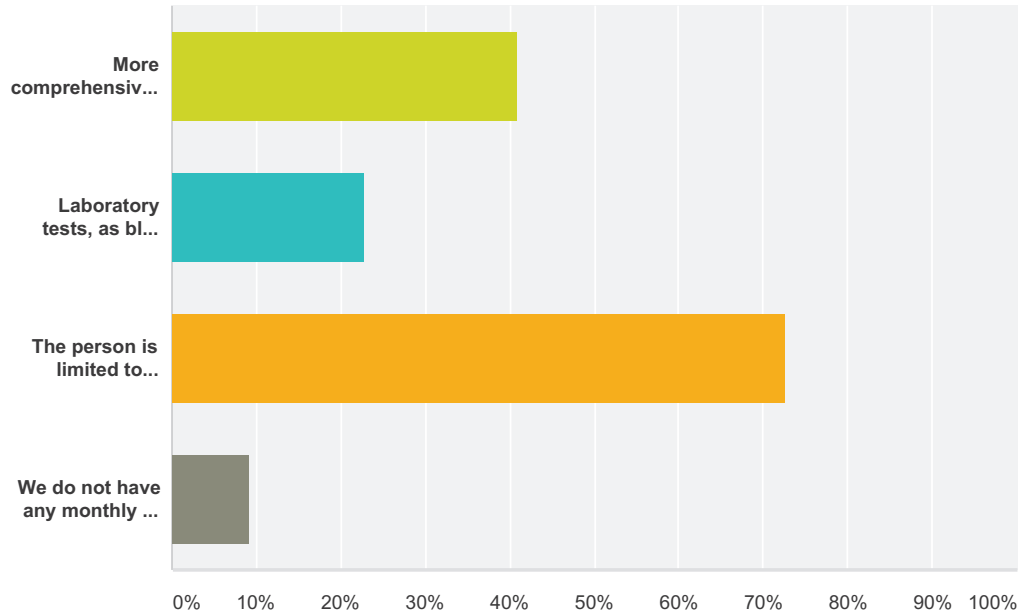
Answered: 22 Skipped: 13



| Answer Choices | Responses | |
|----------------|-----------|-----------|
| Yes | 59.09% | 13 |
| No | 40.91% | 9 |
| Total | | 22 |

Q26 If the personnel exceeds monthly or yearly limit of radiation, what measures are taken ? (multiple answers possible)

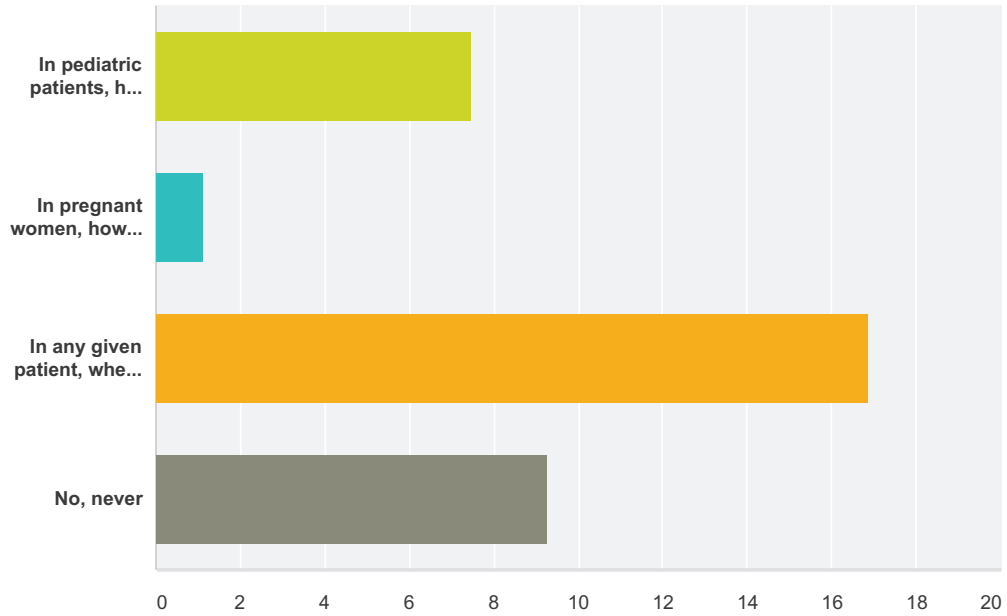
Answered: 22 Skipped: 13



| Answer Choices | Responses |
|---|-----------|
| More comprehensive personal measurements are performed | 40.91% 9 |
| Laboratory tests, as blood cell count, need to be performed | 22.73% 5 |
| The person is limited to perform a certain number of procedures | 72.73% 16 |
| We do not have any monthly or yearly limit | 9.09% 2 |
| Total Respondents: 22 | |

Q27 Did you ever consider performing EP studies or device implantation with zero fluoroscopy by the help of 3D mapping?

Answered: 22 Skipped: 13



| Answer Choices | Average Number | Total Number | Responses |
|---|----------------|--------------|-----------|
| In pediatric patients, how many n= xxx | 7 | 127 | 17 |
| In pregnant women, how many n= xxx | 1 | 20 | 18 |
| In any given patient, where I feel confident n= xxx | 17 | 270 | 16 |
| No, never | 9 | 102 | 11 |
| Total Respondents: 22 | | | |