

Supplement

National survey into current perceptions and practice of device closure of patent foramen ovale for cryptogenic stroke in the United Kingdom

1. What is your current role?

Answer Options	All		Cardiologists		Non-cardiologists	
	Response Count	Response Percent	Response Count	Response Percent	Response Count	Response Percent
Cardiologist not performing PFO closure	14	11.7%	-	-	-	-
Cardiologist performing PFO closure	13	10.8%	-	-	-	-
Neurologist	23	19.2%	-	-	-	-
Stroke physician	70	58.3%	-	-	-	-
Answered question	120	100.0%	-	-	-	-
Skipped question	0	0.0%	-	-	-	-

2. How many years have you been practising as a consultant?

Answer Options	All		Cardiologists		Non-cardiologists	
	Response Count	Response Percent	Response Count	Response Percent	Response Count	Response Percent
Less than 5 years	28	23.3%	5	18.5%	23	24.7%
5-10 years	20	16.7%	5	18.5%	15	16.1%
10-15 years	26	21.7%	8	29.6%	18	19.4%
15-20 years	19	15.8%	6	22.2%	13	14.0%
20-25 years	27	22.5%	3	11.1%	24	25.8%
Answered question	120	100.0%	27	100%	93	100%
Skipped question	0	0.0%	0	0%	0	0%

3. Which of the following professional bodies are you a member of?

Answer Options	All		Cardiologists		Non-cardiologists	
	Response Count	Response Percent	Response Count	Response Percent	Response Count	Response Percent
Association of British Neurologists	24	20.3%	0	0.0%	24	25.8%
British Association of Stroke Physicians	91	77.1%	0	0.0%	91	97.8%
British Cardiac Society	23	19.5%	22	84.6%	1	1.1%
British Congenital Cardiac Association	15	12.7%	15	57.7%	0	0.0%
Answered question	118	98.3%	26	96.3%	92	98.9%
Skipped question	2	1.7%	1	3.7%	1	1.1%

4. If you had to estimate how many patients with stroke and PFO you are assessing a year with a view to closure?

Answer Options	All		Cardiologists		Non-cardiologists	
	Response Count	Response Percent	Response Count	Response Percent	Response Count	Response Percent
None - you don't feel the evidence supports PFO closure	13	11.0%	1	3.7%	12	13.3%
None - you don't see these patients in your practise	4	3.4%	1	3.7%	3	3.3%
5-10 patients	70	59.3%	8	29.6%	62	68.9%
10-20 patients	13	11.0%	8	29.6%	5	5.6%
20-30 patients	6	5.1%	4	14.8%	2	2.2%
>30 patients	11	9.3%	5	18.5%	6	6.7%
Answered question	117	97.5%	27	100.0%	90	96.8%
Skipped question	3	2.5%	0	0.0%	3	3.2%

5. Do you currently require CT or MRI evidence of stroke in all patients prior to considering PFO closure for cryptogenic cerebral events?

Answer Options	All		Cardiologists		Non-cardiologists	
	Response Count	Response Percent	Response Count	Response Percent	Response Count	Response Percent
Yes	92	80.7%	19	73.1%	73	83.0%
No	22	19.3%	7	26.9%	15	17.0%
Answered question	114	95.0%	26	96.3%	88	94.6%
Skipped question	6	5.0%	1	3.7%	5	5.4%

P=0.26

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6. Which of the following cerebral events would you consider closing a PFO for?

Answer Options	All		Cardiologists		Non-cardiologists	
	Response Count	Response Percent	Response Count	Response Percent	Response Count	Response Percent
Ischaemic stroke	33	29.5%	4	15.0%	29	34.0%
Transient ischaemic attack	1	0.9%	1	4.0%	0	0.0%
Both	78	69.6%	21	81.0%	57	66.0%
Answered question	112	93.3%	26	96.3%	86	92.5%
Skipped question	8	6.7%	1	3.7%	7	7.5%

P=0.045

7. How many cryptogenic neurological events do you require proof of before considering closing a PFO?

Answer Options	All		Cardiologists		Non-cardiologists	
	Response Count	Response Percent	Response Count	Response Percent	Response Count	Response Percent
One	71	64.5%	21	81.0%	50	60.0%
Two	23	20.9%	5	19.0%	18	21.0%
Other	16	14.5%	0	0.0%	16	19.0%
Answered question	110	91.7%	26	96.3%	84	90.3%
Skipped question	10	8.0%	1	3.7%	9	9.7%

P=0.041

8. To confirm a PFO do patients get a TTE with Bubble study prior to decision?

Answer Options	All		Cardiologists		Non-cardiologists	
	Response Count	Response Percent	Response Count	Response Percent	Response Count	Response Percent
All	96	84.2%	22	84.6%	74	84.1%
Some	15	13.2%	4	15.4%	11	12.5%
Not required	3	2.6%	0	0.0%	3	3.4%
Answered question	114	95.0%	26	96.3%	88	94.6%
Skipped question	6	5.0%	1	3.7%	5	5.4%

9. To confirm a PFO do patients get a Transoesophageal echocardiogram prior to decision?

Answer Options	All		Cardiologists		Non-cardiologists	
	Response Count	Response Percent	Response Count	Response Percent	Response Count	Response Percent
All	66	58.4%	12	44.4%	54	62.8%
Some	35	31.0%	8	29.6%	27	31.4%
Not required	12	10.6%	7	25.9%	5	5.8%
Answered question	113	94.2%	27	100.0%	86	92.5%
Skipped question	7	5.8%	0	0.0%	7	7.5%

10. Do you consider any of the following anatomical features more likely to implicate the PFO in the patients neurological event?

Answer Options	All		Cardiologists		Non-cardiologists	
	Response Count	Response Percent	Response Count	Response Percent	Response Count	Response Percent
Aneurysmal septum	95	89.6%	23	88.0%	72	90.0%
Long eustachian valve /chiari network	17	16.0%	10	38.0%	7	9.0%
Shunt size	78	73.6%	17	65.0%	61	76.0%
Other features which increase likelihood	16	15.1%	6	23.0%	10	13.0%
Answered question	106	88.3%	26	96.3%	80	86.0%
Skipped question	14	11.7%	1	3.7%	13	14.0%

P=0.011

11. How does this influence your decision making?

Answer Options	All		Cardiologists		Non-cardiologists	
	Response Count	Response Percent	Response Count	Response Percent	Response Count	Response Percent
If present more likely to proceed	84	74.3%	17	63.0%	67	77.9%
If absent less likely to proceed	8	7.1%	3	11.1%	5	5.8%
Does not come into decision making	21	18.6%	7	25.9%	14	16.3%
Answered question	113	94.2%	27	100.0%	86	92.5%
Skipped question	7	5.8%	0	0.0%	7	7.5%

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12. Do all of your PFO closure cases get discussed at an MDT?

Answer Options	All		Cardiologists		Non-cardiologists	
	Response Count	Response Percent	Response Count	Response Percent	Response Count	Response Percent
Yes	66	60.0%	20	77.0%	46	55.0%
No	44	40.0%	6	23.0%	38	45.0%
Answered question	110	91.7%	26	96.3%	84	90.3%
Skipped question	10	8.3%	1	3.7%	9	9.7%

P=0.045

13. If you do have an MDT process which of the following are present at MDT?

Answer Options	All		Cardiologists		Non-cardiologists	
	Response Count	Response Percent	Response Count	Response Percent	Response Count	Response Percent
Interventional Cardiologist	58	80.6%	23	100.0%	35	71.4%
Congenital heart disease cardiologist	30	41.7%	16	69.6%	14	28.6%
Imaging cardiologist	35	48.6%	16	69.6%	19	38.8%
Neurologist	47	65.3%	15	65.2%	32	65.3%
Haematologist	6	8.3%	1	4.3%	5	10.2%
Answered question	72	60.0%	23	85.2%	49	52.7%
Skipped question	48	40.0%	4	14.8%	44	47.3%

14. In your practice which additional tests are used to confirm the cryptogenic nature of the stroke?

Answer Options	All		Cardiologists		Non-cardiologists	
	Response Count	Response Percent	Response Count	Response Percent	Response Count	Response Percent
Carotid scan	108	97.3%	25	92.6%	83	98.8%
Holter monitor	99	89.2%	21	77.8%	78	92.9%
Cardiac MRI	5	4.5%	3	11.1%	2	2.4%
Cardiac CT	0	0.0%	0	0.0%	0	0.0%
Transthoracic Echocardiogram (TTE)	72	64.9%	17	63.0%	55	65.5%
TTE with bubble study	91	82.0%	22	81.5%	69	82.1%
Answered question	111	92.5%	27	100.0%	84	90.3%
Skipped question	9	7.5%	0	0.0%	9	9.7%

15. At which age cut-off would you consider PFO closure to be contra-indicated due to increased likelihood of non-paradoxical (PFO) aetiology?

Answer Options	All		Cardiologists		Non-cardiologists	
	Response Count	Response Percent	Response Count	Response Percent	Response Count	Response Percent
‡ Any age limit	71	62.8%	10	37.0%	61	70.9%
Age >50	24	21.2%	2	7.0%	22	26.0%
Age >55	32	28.3%	7	26.0%	25	29.0%
Age >60	15	13.3%	1	4.0%	14	16.0%
‡ No age limit	29	25.7%	14	52.0%	15	17.0%
‡ Other	13	11.5%	3	11.0%	10	12.0%
Answered question	113	94.2%	27	100.0%	86	92.5%
Skipped question	7	5.8%	0	0.0%	7	7.5%

P=0.001
for (‡) comparison

16. Which of the following would you consider exclusion criteria for cryptogenic stroke and subsequent consideration for PFO closure?

Answer Options	All		Cardiologists		Non-cardiologists	
	Response Count	Response Percent	Response Count	Response Percent	Response Count	Response Percent
Carotid stenosis >70%	96	85.7%	19	70.0%	77	91.0%
Hypercholesterolaemia	28	25.0%	10	37.0%	18	21.0%
Diabetes Mellitus	43	38.4%	12	44.0%	31	36.0%
Hypertension	41	36.6%	9	33.0%	32	38.0%
Atrial Fibrillation	97	86.6%	21	78.0%	76	89.0%
Calcific aortic valve disease	24	21.4%	10	37.0%	14	16.0%
Other	20	17.9%	7	26.0%	13	15.0%
Answered question	112	93.3%	27	100.0%	85	91.4%
Skipped question	8	6.7%	0	0.0%	8	8.6%

P=0.009
ns
ns

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17. Which of the following medical therapy do you routinely use post PFO closure for cryptogenic stroke?

Answer Options	All		Cardiologists		Non-cardiologists		
	Response Count	Response Percent	Response Count	Response Percent	Response Count	Response Percent	
Aspirin	56	50.0%	23	85.0%	33	39.0%	P<0.001
Warfarin	15	13.4%	2	7.0%	13	15.0%	ns
Clopidogrel	81	72.3%	22	81.0%	59	69.0%	ns
Novel oral anticoagulant	4	3.6%	1	4.0%	3	4.0%	ns
None	3	2.7%	0	0.0%	3	4.0%	ns
Other	6	5.4%	1	4.0%	5	6.0%	ns
Answered question	112	93.3%	27	100.0%	85	91.4%	
Skipped question	8	6.7%	0	0.0%	8	8.6%	

18. What duration is this therapy given for in your practice?

Answer Options	All		Cardiologists		Non-cardiologists		
	Response Count	Response Percent	Response Count	Response Percent	Response Count	Response Percent	
Limited period of time	67	63.2%	23	85.2%	44	55.7%	P=0.021
Life long	36	34.0%	4	14.8%	32	40.5%	
Other / variable	3	2.8%	0	0.0%	3	3.8%	
Answered question	106	88.3%	27	100.0%	79	84.9%	
Skipped question	14	11.7%	0	0.0%	14	15.1%	

19. Do you routinely see patients who have had PFO closure for follow-up?

Answer Options	All		Cardiologists		Non-cardiologists	
	Response Count	Response Percent	Response Count	Response Percent	Response Count	Response Percent
Yes	58	50.9%	20	74.1%	38	43.7%
No	56	49.1%	7	25.9%	49	56.3%
Answered question	114	95.0%	27	100.0%	87	93.5%
Skipped question	6	5.0%	0	0.0%	6	6.5%

20. If Yes at what point do you follow up your PFO device patients?

Answer Options	All		Cardiologists		Non-cardiologists	
	Response Count	Response Percent	Response Count	Response Percent	Response Count	Response Percent
1-3 months	29	45.3%	11	55.0%	18	40.9%
6 months	11	17.2%	2	10.0%	9	20.5%
12 months	5	7.8%	1	5.0%	4	9.1%
>1 year	6	9.4%	4	20.0%	2	4.5%
Other	13	20.3%	2	10.0%	11	25.0%
Answered question	64	53.3%	20	74.1%	44	47.3%
Skipped question	56	46.7%	7	25.9%	49	52.7%

21. In patients with stroke and PFO who don't meet criteria for device closure which of the following medications do you use?

Answer Options	All		Cardiologists		Non-cardiologists	
	Response Count	Response Percent	Response Count	Response Percent	Response Count	Response Percent
Aspirin	12	10.7%	5	18.5%	7	8.2%
Clopidogrel	71	63.4%	11	40.7%	60	70.6%
Novel oral anticoagulant	4	3.6%	2	7.4%	2	2.4%
Warfarin	20	17.9%	7	25.9%	13	15.3%
Other	5	4.5%	2	7.4%	3	3.5%
Answered question	112	93.3%	27	100.0%	85	91.4%
Skipped question	8	6.7%	0	0.0%	8	8.6%

22. How long do you continue this therapy?

Answer Options	All		Cardiologists		Non-cardiologists	
	Response Count	Response Percent	Response Count	Response Percent	Response Count	Response Percent
6 months	0	0.0%	0	0.0%	0	0.0%
1 year	2	1.8%	2	7.4%	0	0.0%
18 months	0	0.0%	0	0.0%	0	0.0%
Life long	105	93.8%	22	81.5%	83	97.6%
Other	5	4.5%	3	11.1%	2	2.4%
Answered question	112	93.3%	27	100.0%	85	91.4%
Skipped question	8	6.7%	0	0.0%	8	8.6%