



Interview topic guide

Thank you for agreeing to participate in this interview. The general aim of the study is to help us understand more about the uptake of RAS. We are interested to hear what you think are the barriers and facilitators to introducing/scaling up RAS in the NHS and what issues are important to you in relation to RAS services. I have a number of questions I'm going to ask you – some questions may be more relevant to you depending on your role. We are interested in your experiences and views so there are no right or wrong answers. All information collected will be strictly confidential. Our chat today will be recorded. The audio recordings will only be used for transcribing and analysing data.

How does that sound?

Do you have any questions for me before we start?

Do I have your consent to get started?

Before we begin talking specifically about RAS, I would like to get some background information about yourself:

What is your age?

Please indicate your gender.

What is your ethnicity?

Question (background Qs designed to elicit RAS experience to date)	Probe(s)
1. What is your current role?	
2. Can you please start by explaining how familiar you are with RAS and your current level of expertise on the topic?	At what point did you or your team decide to use RAS and for what reason? [CFIR Planning ¹] [if they have experience] How many years of experience do you have with (using) RAS? [surgeons] How many RAS procedures have you conducted?
3. [If no experience to date]: Do you wish to adopt RAS?	Why or why not?

¹ Consolidated Framework for Implementation Research (CFIR)
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4. [If no experience to date]: Have you experienced any issues with the uptake of RAS in the past?		What happened?
Target framework domain/construct	Question (specific Qs related to perspectives of RAS)	Probe(s)
CFIR Evidence of strength and quality, TDF ² Knowledge	5. Can you comment on the evidence related to RAS?	Evidence from your own research? Practice guidelines? Published literature? Co-workers? Other settings? What do you think of the evidence?
TDF Skills	6. What range of skills do you think are required to deliver RAS effectively?	Both in terms of technical skills to deliver RAS but also leadership, management, tendency towards innovation, agility What type of training would be helpful?
TDF Beliefs about Consequences	7. In your opinion, what are the benefits of delivering RAS within the NHS?	To yourself, to the patients, colleagues, healthcare organisation, NHS – positive and negative, long/short-term. What about the benefits of not delivering RAS?
TDF Beliefs about Consequences	8. What are the drawbacks of introducing RAS in the NHS?	To yourself, to the patients, colleagues, healthcare organisation, NHS – positive and negative, long/short-term. What about the drawbacks of not introducing RAS to your organisation?
TDF Intentions and Goals, CFIR Other Personal Attributes	9. Can you describe what motivators are there for you personally in delivering RAS?	Has this changed since the introduction of RAS? If yes, what changed your motivation?

² Theoretical Domains Framework



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CFIR – relative advantage, TDF Goals	10. To what extent do you think that RAS should be a priority for the NHS at the moment?	
CFIR Tension for change, Patient needs and resources	11. Do you think it is really important to have a RAS service in your hospital? Why?	Is it worth it in terms of typical patient demographics, resources required?
TDF Environmental Context and Resources, CFIR Intervention Source, CFIR Structural Characteristics	12. [If RAS already implemented] Again, talking about your specific hospital, has it been relatively easy or difficult to implement RAS? Why? 13. [If not implemented already] What is it about your hospital that would make it easier or more difficult to implement RAS in your hospital? 14. How does your role/standing in the hospital influence how easy it is/would be to implement RAS?	Resource issues, organisational regulations, equipment, colleagues, the infrastructure of your organisation - social architecture (e.g. roles, hierarchy), age, maturity, size, or physical layout – how does this affect (or will affect) the provision of RAS?
CFIR External Policies and Incentives	[If RAS already implemented] 15. Have any external policies or recommendations influenced the decision to implement RAS locally?	Give examples
CFIR Culture, TDF Social Influences, CFIR Peer Pressure,	16. To what extent have the views of others or what you have seen happening in other hospitals affect your uptake of RAS?	Do you think their opinions (would) influence the uptake of RAS? How do you think your organisation's culture (general beliefs, values, assumptions that people embrace) will affect (or does affect) the provision of RAS? Can

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CFIR Readiness for Implementation – Leadership Engagement	<p>17. Thinking of other hospitals, in your view, who are the winners and who are the losers in the uptake of RAS?</p> <p>18. How open is your hospital to introducing new innovations like RAS?</p>	<p>you describe an example that highlights this? Example: any generational differences in opinions of RAS? Has this affected your views of RAS?</p>
CFIR Patient Needs & Resources/Peer Pressure	19. How do you think patients will (or do) respond to the introduction of RAS in your hospital?	<p>Do you know how patients have responded to RAS in the past? Do you think RAS meets their needs? Have you heard stories about the experiences of patients who have undergone RAS? (from own hospital or other). Can you describe a specific story? Has this influenced your opinion of RAS?</p>
CFIR Cost	20. How do you think the cost associated with RAS systems affects the use/uptake of it?	
TDF Social Professional Role & Identity	<p>21. Do you think the delivery of RAS should be a standard part of your professional role?</p> <p>22. Do you think the wider uptake of RAS would change the nature of your role?</p>	If yes, in what way? How do you feel about this?
<p>TDF Memory, Attention and Decision Making</p> <p>TDF Environmental Context and Resources</p>	<p>23. Do you think RAS will change how you work? What about for the rest of the surgical team?</p> <p>24. [theatre staff] Do you think RAS changes your situation awareness in the operating room? How does this impact on decision making?</p>	<p>Changes in physical demands of surgery or mental demands (task complexity – link to question about communication requirements).</p> <p>Physical layout changes in the operating room, how do you think this would influence communication? How do you think RAS might change/does change the workflow within the operating theatre?</p>



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		Do you think these changes, in workload, (potentially) brought about by RAS would be/are applicable across specialities? Situation awareness – probe: Changes in visual and tactile feedback available to you – what impact does RAS have on this? How do you think this might affect patient outcomes?
TDF Emotions	25. How do you feel about having RAS in your centre? Do you think it affects your credibility? Does it make you feel good? Does it provoke fear? Does it give you concerns?	Are you apprehensive, confident, excited? Why do you feel that way?
Target framework domain/construct	Question (perceptions on the future direction of RAS)	Probe(s)
TDF Optimism	26. What do you think the future of RAS will look like?	Overall, do you expect RAS to be used (more frequently) in the future? Why?
CFIR Tension for change	27. Do you see a need for implementing RAS more widely, outside of your organisation? E.g. should there be a robot in every hospital?	
TDF Beliefs about Consequences	28. What potential concerns, if any, does the future of RAS raise for you? [that we haven't covered already]	
TDF Environmental Context and Resources	29. How do you think NHS circumstances, e.g. in terms of set up and response to COVID, might influence the provision of RAS in the future?	



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TDF Goals, CFIR Relative Advantage	30. In your view, where does investing in RAS sit in the hierarchy of developments that you think are required to improve surgery for the next decade?	
CFIR Complexity	31. Last question! What in your view would be required to move RAS from being in the nice-to-have bracket to the must-have? Is this level of change achievable? Is the effort worth it in your view?	

Any other issue you would like to raise?

Thank you for your time [reassure about confidentiality and contact information if any questions].