Supplementary Files

Supplementary File 1: Stage 1 Evaluation Structured Interview Schedule

Supplementary File 2: Stage 2a, Semi Structured Interview Schedule, Clinical Processes

Supplementary File 3: Stage 2a, Semi Structured Interview Schedule Service Provision

Supplementary File 4: Co design guide for Focus Groups with hypothetical intervention mapping scenario

Supplementary File 1: Stage 1 Evaluation Structured Interview Schedule

Clinician Interviews – themes and questions

Theme	Questions
Experience of participating in the demonstration project	1. Please tell me about your involvement in the demonstration project 2. From your perspective, what was the purpose of the MDT? How clear was this to you at the beginning? 3. Do you feel the MDT altered over time? How? 4. What did you like about the MDTs? 5. What do you think should be done differently? 6. On a scale of 1-5 how satisfied were you with the MDTs? *(5 very satisfied, 4 satisfied, 3 neither satisfied nor dissatisfied, 2 dissatisfied, 1 very dissatisfied)* 7. What do you think is important to discuss during pre-test counselling? *8.* Did you receive a research report on any of your patients? How many? What type? *(1/2nothing reported, 3 VUS, 4b, 4a/ 5)* 9. Were you involved in returning results to patients? 9.1. If yes, How did you approach this? *Be aware may differ for diff types of result (nothing found, 3 VUS, 4a or 4b, 5).* 10. Thinking about the sorts of results you usually communicate to patients, was there anything different about returning this sort of result? 11. So if I were to ask you to rate the difficulty you'd say it was… *More difficult, the same as, less difficult* do you agree?'
Impact (What has the impact been? How have results impacted?)	12. What impact has participating in this project had on your (clinical) practice? 13. What impact has participating in this project had on your understanding of genomics?

Integration in future practice	14. Putting issues of funding aside, would you use/support the use of clinical genomic sequencing if it were available in (your) practice? If yes – when is there value in using it If unsure/ no – tell us more about this. 15. What do you anticipate the barriers to incorporating genomics into practice (*in your specialty*) might be and how could these be overcome? *(funding model, clinician time, support for clinicians to attend from clinical managers)* 16. If genomic sequencing were to be offered in routine clinical practice, how do you think decisions would be made about 16.1. when to use exome sequencing? 16.2. interpretation of results 16.3. which genes to analyse 17. What did you think about the approach Melbourne Genomics took of excluding genes for unrelated adult onset conditions to minimise incidental findings? Do you think patients should have the choice to receive information about variants that show a future risk of disease unrelated to their condition? 18. Given that new genes are being identified and VUS are being reclassified as more is known, who do you think should be responsible for initiating a re-analysis in the future?
Resources to support integration	19. For which of these stages do you think resources would be helpful? 20. What information would need to be included? 21. What other resources might be helpful? 22. What are the advantages/disadvantages of an online portal?
Final messages	23. From your involvement in the demonstration project, what are the 3 things you want your hospital to keep in mind as genomics is implemented in clinical practice? 24. Is there anything else you want to make sure the Alliance of organisations takes into account?

Supplementary File 2: Stage 2a, Semi Structured Interview Schedule, Clinical Processes

Could you tell me what your role is and how you have been involved with the use of genomics in the clinical setting?

Ensuring appropriate patients receive exome sequencing **(Emotion,** Reinforcement, Behavioural regulation)	**Domain**
What measures are in place to assure yourself that you are selecting the appropriate patients?	Behavioural regulation
Is there anything in place that makes this process work well routinely?	Reinforcement
What were your experiences of starting off offering testing - how did you become more proficient? What helped (or would have helped)? Have you always been comfortable offering genomic testing in your clinical practice? What changed your mind?	Skills, Beliefs about capabilities, Beliefs about consequences, Emotion
What are your experiences of managing expectation? How have you found this? What has made it easier?	Exploratory q from patient consultation Emotion
Test ordering and interpreting variants **(Emotion,** Reinforcement)	**Domain**
What do you see as your role in determining the pathogenicity of a variant and its clinical significance)? (Who's role is it, how do you feed in?) What would you (or did you) need to participate in the curation process (if you feel this is part of your role)?	Skills and knowledge
There is a large focus on multidisciplinary variant interpretation meetings as a way of interpreting results. What works/doesn't work? What interventions have been put in place to aid the way they work? How would you find variant interpretation if these didn't exist?	Reinforcement Emotion
Final decision making around variant classification – is there a standard process in place?	Reinforcement
Providing results to patients. (Communicating results) **(**Emotion, Goals, Optimism**, Reinforcement, Behavioural regulation)**	**Domain**
Have there been (are you aware of) any issues around communicating results back to patients? *No*: What has been put in place to ensure it worked well? *Yes*: What has been challenging? What needs to be put in place to overcome this?	Exploratory
Has a routine process been established? How do you manage this?	MAD, Behavioural regulation
When results are uncertain how do you feel about feeding this back to the patient? How would you support a less experienced doctor with this? What gives you confidence that this process is being handled well?	Emotion Optimism
Has a routine process been put in place for reanalysis of results? How do you feel about this?	Reinforcement Emotion
Incorporation into practice **(**Emotion, **Reinforcement)**	**Domain**
What do you feel should be put in place (if anything) to incorporate genomic testing into standard clinical practice? How could this be facilitated? (is there anything other than funding) that is needed? How do we support people to change (attitudes, behaviours, habits, skills)?	Reinforcement
Are you happy to play a role in mainstreaming genomics?	Emotion
What sort of role do you envisage?	Prof ID
How do you keep up with the evolving evidence base?	Skills, knowledge
Is your organisation supportive of adopting genomics in clinical practice? In what way?	Organisational Knowledge
Is there anybody (or any role) outside your organisation who is key to ensuring mainstreaming?	Prof role, environmental context
For others starting out now, what advice would you give – maybe what you did or wish you had known?	

Are there any other barriers, maybe one you have overcome, that we haven't discussed and you would like to share?

Supplementary File 3. Interview Schedule, Service Provision

Could you tell me what your role is and how you have been involved with the use of genomics in the clinical setting?

Pre-adoption: focus on factors *that could sway thinking* about adoption including amalgamation & dissemination of information
What got you interested in the idea of genomic testing being used in clinical practice?
Where do you look for information around the use of clinical genomics? And where would you look for more?
How do you go about deciding what information, about adopting genomics, into clinical practice has value? Are there any networks that you find more helpful than others?
Adoption: focus on factors that influence implementation and the *decision* to adopt
What was the key reason for deciding to adopt/invest genomics in this clinical setting?
What specific data did you need or would like to see, to support the decision to use genomics?
What have been the key factors to influence (fellow) physicians to participate in the use of genomic testing?
Implementation: focus on what facilitates implementation (including setting and systems)
What do you think makes it easier for some clinical areas to implement genomic testing?
What do you think makes it easier for some organisations to implement genomic testing?
How do you know if implementation has been successful?
In developing your (organisational) processes, what have you learnt about what can be changed and what is essential?
What have been the best strategies to enhance participation/engagement? (with clinicians and non clinical staff)
Sustainability: focus on getting into routine practice and spreading out into new areas
As a (clinical) leader how do you nurture those who are advocating for change in genomics?
What do you feel should be done (if anything) to facilitate the incorporation of genomic testing?
How do you keep up with the evolving evidence base?
How do you go about deciding what to disinvest in to bring in a new intervention
Do you feel you have a particular part to play in getting genomics incorporated into routine practice?
Who should facilitate mainstreaming?
What organisation and community influences would support greater sustainability?
How do you think genomic sequencing needs to be financed in the future to ensure sustainability?
What national and/or state networks can most effectively support sustainability?
What policies do you/would you find most helpful to support stable funding streams?
For others starting out now, what advice would you give – maybe what you did or wish you had known

Are there any other barriers, maybe one you have overcome, that we haven't discussed and you would like to share?

Supplementary File 4: Co design guide for Focus Groups

Clinical processes phase 1 focus group material 1

Clinical processes target behaviour/area from process map and audit data	Barriers in context*^+	TDF domain	Impact of barrier (high/moderate/low)	Ranking of barriers to target (1 being most important)
Target behaviour 1	Barrier from data synthesis	XXX		
	Barrier from data synthesis	XXX		
	Space for additional barrier			
	Space for additional barrier			

*emerged from process mapping interviews ^emerged from clinical process interviews +emerged from service provision interviews
NB: XXX indicate where data would be populated. See 'hypothetical scenario below to follow the flow of data collection to intervention design'

Clinical processes phase 2 focus group material

Clinical processes target behaviour/area from process map and audit data	Top barrier in context*^+	TDF domain	Suggested intervention strategies*^+	Behaviour change strategy represented	Likely impact of strategy (high/moderate/ low)	Likely feasibility of strategy (difficult/ possible)	Ranking of intervention strategy (1 being most favourable)
Target behaviour 1	XXX		Ideas from data synthesis	XXX			
			Ideas from data synthesis	XXX			
			Space for more ideas				
			Space for more ideas				

NB: XXX indicate where data would be populated. See 'hypothetical scenario below to follow the flow of data collection to intervention design'

EXAMPLE HYPOTHETICAL INTERVENTION MAPPING SCENARIO: CLINICIANS

Hypothetical flow from data collection to focus group

Target behaviour 1: Ensuring appropriate patients receive genomic testing

Interviews/Process map		**Focus Group**			
Indicative hypothetical quote	*Theme & TDF domain*	*Barrier*	*Enabler*	*BCT*	*Intervention*
"*Care is needed that you don't create an environment where you don't feel you have confidence as this transfers to the patients*" "*Having worked in the flagship you develop the 'patter' and ability to run the clinic*"	Clinicians gaining confidence in their ability to do genomic testing *TDF Domain* Belief about capabilities	• Lack of hands on experience • Unable to attend MDT meetings	• CG and GC support • Access to flagship experience	Environmental changes Social processes of encouragement, pressure or support Framing/reframing	Ensuring clinicians have an opportunity (e.g., by quarantining time to attend) to learn skills through participation in multidisciplinary processes in the flagships (or processes that eventually replace flagships). Framing of the multidisciplinary meetings as 'hands on' learning to encourage support and shared expertise.

Service provision phase 1 focus group material 1

Service provision/policy target behaviour/area	Barriers in context*^+	TSCi area	TDF domain	Impact of barrier (high/moderate/low)	Ranking of barriers to target (1 being most important)
Target behaviour X	Barrier from data synthesis		XXX		
	Barrier from data synthesis		XXX		
	Space for additional barrier				
	Space for additional barrier				

*emerged from process mapping interviews ^emerged from clinical process interviews +emerged from service provision interviews
NB: XXX indicate where data would be populated. See 'hypothetical scenario below to follow the flow of data collection to intervention design'

Service provision phase 2 focus group material

Service provision/policy target behaviour/area	Top barrier in context*^+	TDF domain	Suggested intervention strategies*^+	Behaviour change strategy represented	Likely impact of strategy (high/moderate/ low)	Likely feasibility of strategy (difficult/ possible)	Ranking of intervention strategy (1 being most favourable)
Target behaviour X	XXX		Ideas from data synthesis	XXX			
			Ideas from data synthesis	XXX			
			Space for more ideas				
			Space for more ideas				

NB: XXX indicate where data would be populated. See 'hypothetical scenario below to follow the flow of data collection to intervention design'

EXAMPLE HYPOTHETICAL INTERVENTION MAPPING SCENARIO: SERVICE PROVISION

Translation Phase 1: Preadoption

Interviews		**Focus Group**			
Indicative hypothetical quote	*Theme & TDF domain*	*Barrier*	*Enabler*	*BCT*	*Intervention*
"*Less academic hospitals see genomics as the future rather than current practice*"	Need for organisational knowledge *TDF Domains* Professional identity Environmental context and resources	• Understanding that genomics is only for research (or has clinical application) • Lack of integration of genomics into clinical practice	• Organisational reputation • Costs of genomics aligning with 'traditional' procedures	• Social reward • Framing/ reframing • Goal setting (outcome) • Goal setting (behaviour) • Information about social and environmental consequences	• Frame genomics as current best practice to hospital executive and clinicians • Articulate a goal and strategy for implementing genomics at the hospital • Provide information about genomics and benefits that patients at other hospitals have from using genomics
"*Cost is secondary, hospital X has genomics, so we want it too*"					