Step-by-step Guide for REPLACE 2 Partners to REPLACE Behaviour Change Approach

Draft (do not quote)

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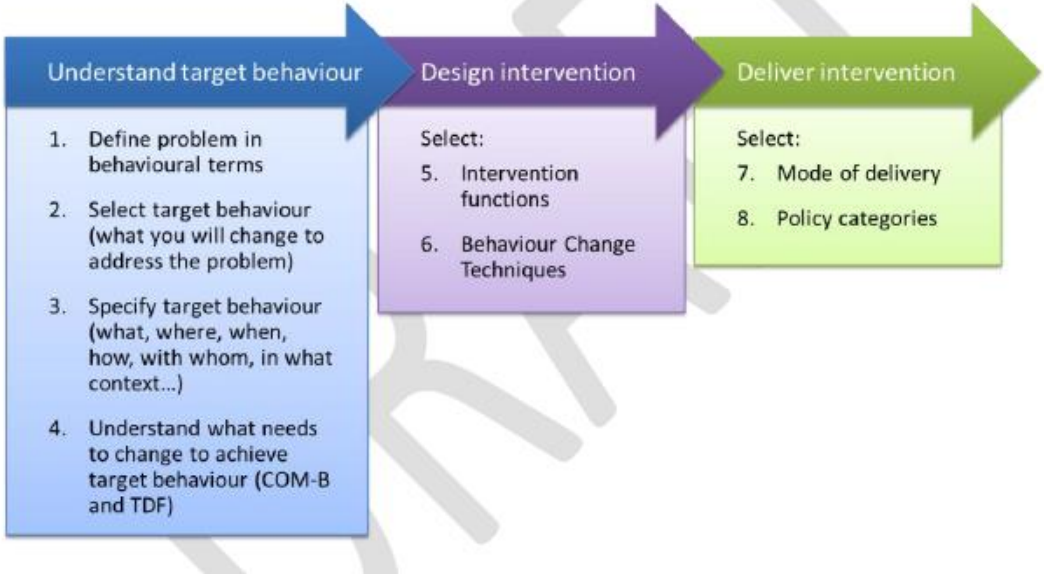
NB: The approach draws on the latest behaviour change wheel (BCW) guide by **Prof Susan Michie, Lou Atkins and Prof Robert West at University College London**. Their work is still confidential and in draft format, so partners need to keep this approach **confidential** and not share or cite this outside of the REPLACE 2 group. We have officially registered our use of the BCW guide with them so they are aware of our activities.

Introduction

Below (labelled figure 1) is the latest version of the diagram of the step-by-step Behaviour Change Wheel approach that Michie et al provide in their guide, and I will take you through this process in this guide but also where relevant add suggested additions to fit our particular project.

As explained to REPLACE 2 partners at the kick-off week workshop in April 2013, parts of the Michie et al BCW approach neatly overlap with the original REPLACE framework. They add more detail and can support us in thinking through what activities we will carry out and how.

Figure 1. Behaviour change intervention development process



The original REPLACE framework is illustrated in figure 2 below. Element 1 of the REPLACE framework precedes the Michie et al BCW approach. We must identify some motivated and hopefully influential FGM affected community members who are

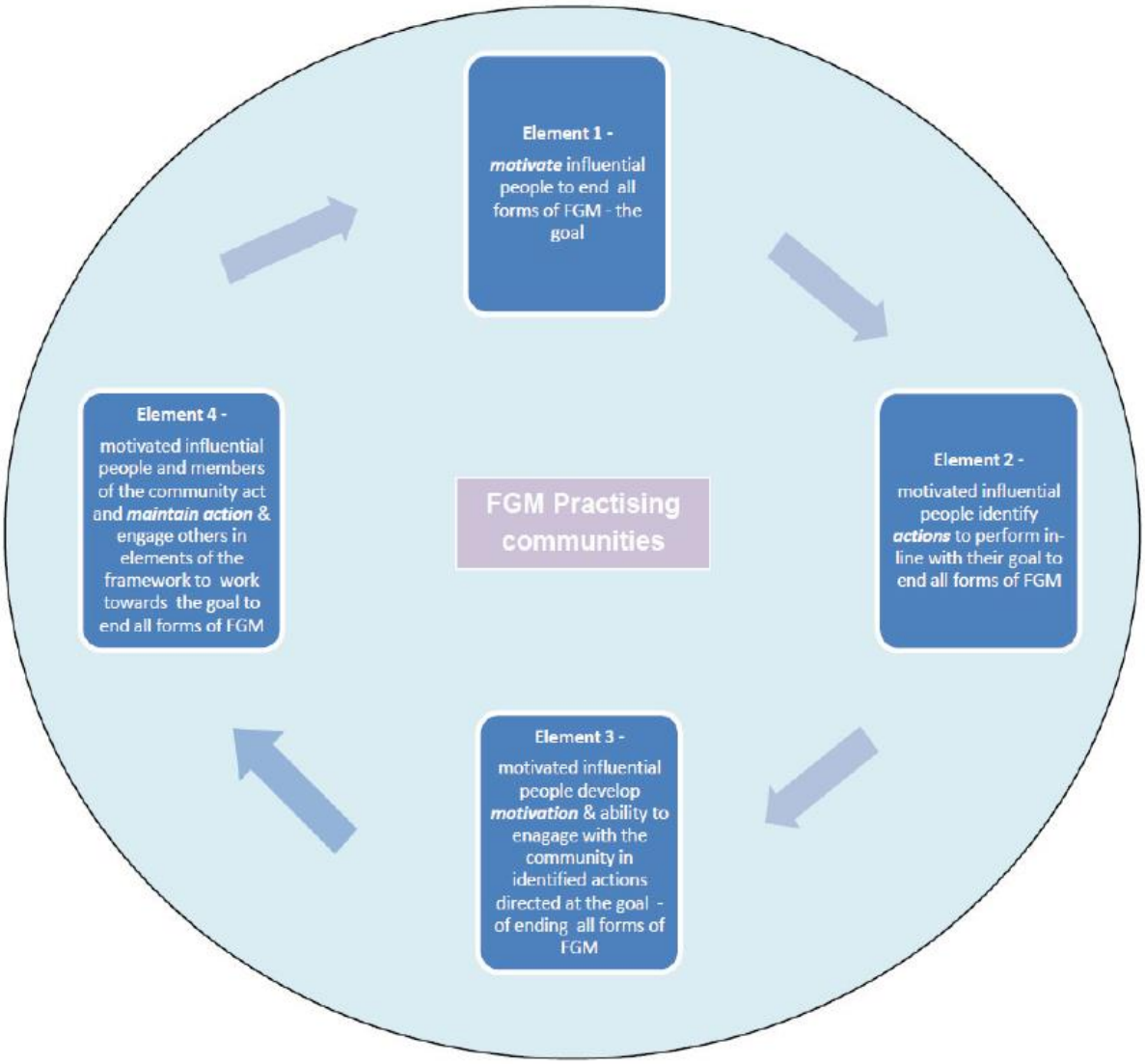
already motivated to want FGM to end in their community, or who are at least open to the idea of change and working with us.

Element 2 of the REPLACE framework maps onto the blue component of figure 1 above; where we work to 'Understand the target behaviour'.

Element 3 of the REPLACE framework maps onto the purple and green parts of figure 1 above where we look to 'design' and 'deliver' (and evaluate) an intervention.

Element 4 of the REPLACE framework comes afterwards where the effect of activities so far is hopefully, at the very least to engage and motivate others to want FGM to end. If the developed intervention had other aims and objectives then these should be evaluated as part of the process of designing and delivering the intervention.

Figure 2. The original REPLACE framework (2011)



Throughout the rest of this guide I will draw on ideas from the original REPLACE framework, the BCW behaviour change wheel approach and from community readiness theory (Edwards et al. 2000) in explaining how to develop thinking and ideas, and planning activities for delivering on the REPLACE 2 project.

Community engagement and community researcher recruitment

I will not provide detail here about how to engage with communities or recruit community based researchers, though I think that ultimately the revised toolkit which will be an output from REPLACE 2 should contain a whole section/chapter on this, and FSAN and FORWARD UK are likely to be major contributors to this work, as well as other partners adding their own experiences.

It is important to note that it is likely that only through a process of community engagement, and with the support of some members of the FGM affected communities, that any organisation will be able to progress and apply the REPLACE behaviour change approach.

Through this process, people motivated to end FGM in their community and people who are influential in their community can be engaged in the process that follows. This draws directly from Element 1 of the original REPLACE framework (see figure 2 above).

Figure 3. Stages of community readiness to change (taken from Edwards et al, 2000)

Stage	Description
No awareness	• Community members not conscious of the problem • Accepting of the issue as part of the way things are
Denial	• Some awareness amongst some community members • No motivation to act or belief that anything can be done
Vague awareness	• Some community members communicate in general terms about problem • Poor understanding and no motivation change things
Preplanning	• Clear recognition of the problem • Community leaders are motivated to take action • No clear understanding about what action to take.
Preparation	• Planning begins to take on focus and detail. • Data may be formally collected to use in planning • Decisions are made about what needs to be done • Resources are gathered and put to use. • Some community support
Initiation	• Activity or action may have started but is perceived as novel. • Leaders enthusiastic • Community support
Stabilisation	• General support remains • Some prevalence tracking going on, supported by an organised and experienced administration. • ongoing evaluation of efforts likely, and low motivation for change or progression.
Confirmation/ expansion	• Support has grown and authorities and policy-makers are likely to be on board. • Some evaluation is likely to have happened • New efforts initiated with plans to reach new and harder to access groups.
Professionalization	• Knowledge and understanding of problem is sophisticated • Administration are highly skilled • Community involvement is high and ongoing evaluation and adaptation is typical.

In addition, by engaging with some community members and your identified or potential community researchers it will be possible to start to identify at what stage that community is at on the issue of ending FGM (see figure 3 above). There is a guide to community readiness provided in the behaviour change folder on Google drive here. Page 10 onwards in this guide walks you through a very detailed process of accessing information from a small sample (4-6) of community researchers/members (key informants) and assessing that information to classify the community's readiness for change. I'd be interested in hearing partners' views on using this approach as it seems very in-depth and complex – perhaps unnecessarily so? In Edwards et al.'s (2000) paper on Community Readiness theory they certainly seem to refer to a less onerous approach that involves community members discussing together and deciding on where they think their community can currently be placed within the 9 stages (see figure 3 above).

This is something that can be discussed in partner meetings to try to reach a decision where there is any uncertainty about how to classify. In terms of slotting the identified readiness to change stage into the wider process of our behaviour change approach, it is about getting an idea of where the community is, so that we can ensure target actions or behaviours for intervention are relevant and reasonably well matched.

We will pick up the community readiness stage a little later....first Michie et al. want us to define the problem or issue we are trying to address!

Step 1 – Define the problem in behavioural terms

In order to define the problem we are trying to address, Michie et al suggest carrying out two tasks.

1) Set out in behavioural terms the problem you are trying to solve
2) Specify the individual, group or population involved

This is how I would do this based on an example provided by Michie et al and my understanding of what we are trying to achieve.

My suggested response
End the practice of all forms of FGM in all countries in the European Union (each partner might work specific to their nation, and may want to be specific about including 'sunna' and 'less severe' forms of FGM)

Partners may want to suggest or identify alternatives.....

Task 1: Write down the problem specifying context

Alternative responses from partners

Task 2: Identify the relevant individual, groups or populations involved in this problem

My suggested response
All members of FGM affected migrant communities residing in the EU (each partner might want to specify the particular community and the particular part of the EU that they are working in)

Task 2: Identify the relevant individual, groups or populations involved in this problem

Alternative responses from partners

Step 2 – Select the target behaviour

Because any type of human behaviour is complex and affected by many different factors and many different actions or behaviours of many people, it is important to think about all of the different behaviours that might influence or have an effect on whether FGM is carried out on any one particular girl or woman in an affected community.

Even for a relatively straightforward behaviour (Michie et al look at hand washing by staff in hospitals), there are a wide range of other behaviours and factors that may ultimately influence whether the behaviour is performed or not. Clearly FGM is far more complex than hand washing, so we must take time to think about all of the behaviours that we could possibly target that would move a community closer to the goal of ending FGM.

Michie et al suggest a further 2 tasks for this step.

1) Generate a candidate long list of behaviours that could bring about the desired outcome
2) Prioritise the behaviours by assigning three scores on the following criteria:

    a) Estimate **impact** of changing each behaviour on desired outcome (ending FGM) from 1 (minimal impact) to 5 (high impact)

    b) Estimate how **likely** is it the behaviour can be changed (or implemented in the case of the REPLACE 2 project) (1 unlikely) to 5 (highly likely) (in considering likelihood of change think about capability, opportunity and motivation to change)

    c) Consider how the behaviours are related to each other and estimate how likely is it each behaviour will, overall have a positive or negative impact on other, related behaviours -2 (negative impact) to +2 (positive impact) (**spillover**) (as shown in the example it might help to group behaviours)

Calculate an overall priority score by adding the impact, likelihood and spillover scores together (0= lowest priority –12=highest priority) and select the behaviour with the highest score.

In addition to the above scores, I think is important to also consider at this stage for each community you are planning on working with, the extent to which the behaviour is **matched to the readiness to change stage** we believe they are at. This could also be scored 1 (not well matched) to 5 (very well matched).

To illustrate how this might be done I have generated a "long" list of possible behaviours that could be targeted in an intervention (see figure 4 below). For the sake of being succinct and providing an example, this is not actually a very long list, and I would direct partners to think of as many possible behaviours, activities and actions as they can that may influence our overall behavioural goal of ending all forms of FGM in EU nations. You should get community researchers, volunteers or potential community researchers to help generate this long list with you where appropriate.

Figure 4. Example long list of behaviours that could be the target of an intervention

Context 1: Going to existing community meetings/events and:

- Communicating about wanting FGM to end in the community and why (exact content of arguments to be presented need to be targeted to particular community belief systems)
- Talking about 'change' in the community with a focus on how this can be positive
- Talking about health issues that affect the community and the support that is needed to address those issues
- Talking openly about negative experiences of FGM

Context 2: Organising specific community events with the purpose of:

- Communicating about wanting FGM to end in the community and why (exact content of arguments to be presented need to be targeted to particular community belief systems)
- Talking about 'change' in the community with a focus on how this can be positive
- Talking about health issues that affect the community and the support that is needed to address those issues
- Talking openly about negative experiences of FGM
- Mothers/women talking to their daughters about other ways to stay respected and safe when FGM has not been performed

Context 3: Arranging to meet with peers/friends with the purpose of:

- Communicating about wanting FGM to end in the community and why (exact content of arguments to be presented need to be targeted to particular community belief systems)

- Talking about 'change' in the community with a focus on how this can be positive
- Talking about health issues that affect the community and the support that is needed to address those issues
- Talking openly about negative experiences of FGM
- Mothers/women talking to their daughters about other ways to stay respected and safe when FGM has not been performed

Context 4: In the context of suspecting that one's own child or relative is in danger of having FGM performed on them:

- Teaching the child/relative in question actions they could take to prevent FGM happening if it looks imminent (e.g. how to make contact with a particular service/organisation/trusted person to get help)

Context 5: In the context of becoming aware that a girl known to a community member is about to be taken abroad for FGM or have it performed locally:

- Communicating with relatives important to the decision-making process that you feel it shouldn't happen
- Showing relatives abroad Government produced information about illegality of the procedure in EU country of residence (where available)
- Identifying other possible actions that may prevent the FGM happening and carrying some or all of these out

In addition to generating a long list through simple idea generation with community researchers or community volunteers, it is useful to consider the types of intervention strategies and behaviours that Edwards et al (2000) provide as examples from their research and experience mapped to community readiness stage. Figure 5 below is taken from their paper, and may provide some additional ideas, particularly ones that might be more likely to suit the community's readiness to change.

Figure 5. Behaviours that could be the targets for intervention, matched to the 9 stages of readiness to change; from Edwards et al. (2000) – example relates to the issue of <u>domestic violence</u>

1. No Awareness
Goal: Raise Awareness of the Issue

- One-on-one visits with community leaders and members.
- Visit existing and established small groups to inform them of the issue.
- Make one on one phone calls to friends and potential supporters.

2. Denial
Goal: Raise Awareness That the Problem or Issue Exists in the Community

- Continue one-on-one visits and encourage those you've talked with to assist.
- Discuss descriptive local incidents related to the issue.
- Approach and engage local education/health outreach programs to assist in the
- effort with flyers, posters, or brochures.
- Begin to point out media articles that describe local critical incidents.
- Prepare and submit articles for church bulletins, local newsletters, club newsletters, etc.
- Present information to community groups.
- Sample media message: "Is child abuse somebody else's business? Domestic violence affects children."

3. Vague Awareness
Goal: Raise Awareness that the Community Can Do Something

- Present information at local community events and to unrelated community groups.
- Post flyers, posters, and billboards.
- Begin to initiate your own events (pot lucks, potlatches, etc.) to present information on the issue.
- Conduct informal local surveys/interviews with community people by phone or door to door.
- Publish newspaper editorials and articles with general information, but relate information to local situation.
- Sample media message: "Our community can change their world" (with photos of children).

4. Preplanning
Goal: Raise Awareness with Concrete Ideas to Combat Condition

- Introduce information about the issue through presentations and media.
- Visit and develop support from community leaders in the cause.
- Review existing efforts in community (curriculum, programs, activities, etc.) to determine who benefits and what the degree of success has been.
- Conduct local focus groups to discuss issues and develop strategies.
- Increase media exposure through radio and public service announcements.

5. Preparation
Goal: Gather Existing Information to Help Plan Strategies

- Conduct school drug and alcohol surveys with general violence prevalence questions.
- Conduct community surveys.
- Sponsor a community picnic to initiate the effort.
- Present in-depth local statistics.
- Determine and publicize the costs of the problem to the community.
- Conduct public forums to develop strategies.
- Utilize key leaders and influential people to speak to groups and to participate in local radio and television shows.

6. Initiation
Goal: Provide Community Specific Information

- Conduct in-service training for professionals and para-professionals.
- Plan publicity efforts associated with start-up of program or activity.
- Attend meetings to provide updates on progress of the effort.
- Conduct consumer interviews to identify service gaps and improve existing services.
- Begin library or internet search for resources and/or funding.

7. Stabilization
Goal: Stabilize Efforts/Program

- Plan community events to maintain support for the issue.
- Conduct training for community professionals.
- Conduct training for community members.
- Introduce program evaluation through training and newspaper articles.
- Conduct quarterly meetings to review progress and modify strategies.
- Hold special recognition events for local supporters or volunteers.
- Prepare and submit newspaper articles detailing progress and future plans.
- Begin networking between service providers and community systems.

8. Confirmation/Expansion
Goal: Expand and Enhance Service

- Formalize the networking with Qualified Service Agreements.
- Prepare a Community Risk Assessment Profile.
- Publish a localized Program Services Directory.
- Maintain a comprehensive database.
- Develop a local speakers bureau.
- Begin to initiate policy change through support of local city officials.

- Conduct media outreach on specific data and trends related to the issue.

9. Professionalization

Goal: Maintain Momentum and Continue Growth

- Engage local business community and solicit financial support from them.
- Diversify funding resources.
- Continue more advanced training of professional and para-professionals.
- Continue re-assessment of issue and progress made.
- Utilize external evaluation and use feedback for program modification.

What might also be useful in generating this list is thinking through with community members and researchers if they are available to you, the way in which the practice of FGM tends to happen within the community you are working with in the new EU context. What steps or stages are there? Who tends to be involved in a decision to have FGM done or not? Are there assumptions that it will be carried out or is the process more explicitly discussed and debated? What discussions occur and with who? This might help break the process down into many more sections or possible contexts than I have thought of above (see figure 4), and identify possible times, places and ways to take action. It would also be useful to try to draw out this information in narrative interviews with community members later on.

Even though it is likely to be very difficult for us to design interventions that support people in taking action in the later stages of the process of a planned incident of FGM for the current REPLACE 2 project, it would be very useful for future work to have the full process documented or estimated in some way. We can build on and develop our understanding of this as this project develops, and it could inform future work.

In figure 6 below, I will now demonstrate how the scoring system might be applied to help make a decision about which behaviours to target in our work with the identified community or communities.

You will need to have identified at which stage of readiness to change the particular community is at, and if you are working with more than one community and they seem to be at different stages of readiness to change, the process may need to be repeated for each community. For the example below, I will imagine that the community we are aiming to work with (or section of it), are at the ***'vague awareness'*** stage. This stage is characterised according to Edwards et al (2002) as comprising largely of community members who communicate in general terms about the problem, but have a poor understanding and no motivation to change things.

In FGM terms, this may mean that most community members are aware that some people oppose FGM and have heard about some of the cited issues such as health consequences and that it is illegal in their EU country of residence, but may not fully view this as a problem that needs to be addressed or as something that needs to change in their community and are certainly not motivated to act to change things.

In the example in figure 6 I have just selected a few behaviours to illustrate the point. If you've identified a much larger range of possible target behaviours to consider as possible candidates then they will all need to be included and considered against one another. The behaviour highlighted in yellow comes out with the highest score in this instance.

Figure 6. Prioritising behaviours to target in intervention work with FGM affected communities – example applied to community at vague awareness stage of readiness to change

Potential target behaviours	Impact of this behaviour on end goal of ending FGM (1-5)	Likelihood that behaviour can be changed/ implemented (1-5)	Spillover – how much does this behaviour influence the others (-2 to +2)	How linked is it to stage of community readiness to change? (1-5)	TOTAL SCORE
Going to existing community meetings/events and communicating about wanting FGM to end in the community and why (exact content of arguments to be presented need to be targeted to particular community belief systems)	2	4	2	5	13
Organising specific community events with the purpose of talking about 'change' in the community with a focus on how this can be positive	1	5	1	5	12
Arranging to meet with peers/friends with the purpose of talking openly about negative experiences of FGM	2	4	2	4	12
In the context of suspecting that one's own child or relative is in danger of having FGM performed on them teaching the child/relative in question actions they could take to prevent FGM happening if it looks imminent (e.g. how to make contact with a particular service/organisation/trusted person to get help)	3	3	-1 (quite an isolated action – may have limited impact on other behaviours listed here)	1	6
In the context of becoming aware that a girl known to a community member is about to be taken abroad for FGM or have it performed locally communicating with relatives important to the decision-making process that you feel it shouldn't happen	3	3	-1 (quite an isolated action – may have limited impact on other behaviours listed here)	1	6

Target behaviour = Going to existing community meetings/events and communicating about wanting FGM to end in the community and why (exact content of arguments to be presented need to be targeted to particular community belief systems)

Step 3 – Specify the target behaviour

Michie et al suggest it is now important to specify the behaviour in as much detail as possible. To do this we need to think about the following:

- *Who* needs to perform the behaviour?
- *What do they need to do* differently to achieve the desired change?
- *When* do they need to do it?
- *Where* do they need to do it?
- *How often* do they need to do it?
- *With whom* do they need to do it?
- In *what context* do they need to do it?

I have provided suggested specification against the selected target behaviour in figure 7 below. You do not need to specify the behaviour in exactly the same way, but should use local information and knowledge and input from community researchers to think about what is possible and what would be the best ways of the target behaviour being implemented to target the goal of ending FGM within that community.

Target behaviour	Going to existing community meetings/events and communicating about wanting FGM to end in the community and why (exact content of arguments to be presented need to be targeted to particular community belief systems).
Who needs to perform the behaviour?	Community members identified through community engagement as being willing to start to do this.
What do they need to do differently to achieve desired change?	Start going to existing community meetings/events having organised to speak about wanting FGM to end in their community, having prepared key arguments/discussion points targeted at the relevant belief systems linked to the continuation of the practice in that community.
When do they need to do it?	At identified scheduled community events
Where do they need to do it?	At identified scheduled community events
How often do they need to do it?	Once a month? This would need thinking about carefully depending on schedules of events, who attends them etc – you wouldn't just want to repeat the same thing to the same people.....
With whom do they need to do it?	With another community identified member or community leader
In what context do they need to do it?	Within the context of existing community events

Figure 7. Example specification of the target behaviour

Step 4 – Understand what needs to change to achieve the target behaviour

This part of the guide is where the new REPLACE 2 partners (Gabinet, APF and CESIE) will be doing things differently from the original REPLACE partners (FSAN and FORWARD UK), since Gabinet, APF and CESIE have funding to conduct new data collection with the communities they decide to work with. FSAN and FORWARD UK will need to apply the following ideas to their chosen target behaviour(s) and intervention development without the luxury of collecting lots of new data. They will need to use what we learnt from REPLACE1 about the Somali and Sudanese communities and their practice of FGM, plus what they know from their vast experience anyway of working with these communities, and what they can learn from discussion and planning with colleagues in delivering the project. The framework set out below though, should help still in structuring their thinking and planning.

Michie et al see this as a crucial part of developing a behaviour change intervention. They say:

'What we mean by 'understanding' the target behaviour is to identify what needs to change either in the person and/or the environment in order to achieve the target behaviour.

Devoting time and effort to understanding the target behaviour is a critical and often overlooked step in intervention design. The more accurate this analysis of the target behaviour, the 'behavioural diagnosis', the more likely it is that the intervention will change the behaviour in the desired direction.

Behaviour change interventions may fail because the wrong assumptions have been made about what needs to change. An example of this from driving behaviour was the assumption that the reason novice drivers have so many crashes is that, even after passing their driving test, they lack the skills needed to avoid them. This led to advanced driver courses which it was hoped would mitigate the problem. In fact, it turned out that the problem is not so much lack of skill but of motivation. Drivers were motivated to drive in ways that increases the risk of crashing, particularly driving too fast and not paying sufficient care and attention. Therefore, a different kind of intervention is required, one that makes novice drivers prioritise driving more slowly and taking more care'.

Partners will remember that during kick-off week, I introduced two theoretical 'tools' to them from Michie et al's work. These were the COM-B model and the theory domains framework (TDF). These can be used to understand which factors are most influential in whether or not a particular behaviour will be performed or not.

From Michie et al's draft BCW guide:

The COM-B model (Michie et al., 2011)

The COM-B model is a simple, theoretically-based model and useful starting point for understanding behaviour in the context it occurs. The central tenet of the model is that for any behaviour to occur three components need to be present:

> *1) There must be the **capability** to do it: e.g. the person or people concerned must have the physical strength, knowledge, skills, mental resources to perform the behaviour;*

*2) There must be the **opportunity** for the behaviour to occur in terms of a conducive physical and social environment: e.g. physically accessible, affordable, enough time, socially acceptable;*

*3) There must be the **motivation**: i.e. they must be more highly motivated to do the behaviour than not to, or to engage in a competing behaviour (Figure 4).*

Each of these components can be divided into two types. Capability can be either physical (in the case of physical skills, physical strength, etc.) or psychological (in the case of psychological resources and skills, knowledge, capacity for understanding etc.). In the case of opportunity, it is possible to distinguish between what is afforded by the physical environment (resources, locations, physical barriers, etc.) and the social environment (concepts available in language, exposure to ideas, etc.). For motivation, reflective (involving self-conscious planning, analysis and decision-making) and automatic processes (involving emotional reactions, drives and habits) play a role.

I have sent this link around before but there is an open access article on the BCW approach which also describes the COM-B (see p4 of the article).

http://www.implementationscience.com/content/pdf/1748-5908-6-42.pdf

If people are lacking one of the three components then the identified behaviour will not occur. If we want community members to who want FGM to end in their community to act out the target behaviour we have identified *Going to existing community meetings/events and communicating about wanting FGM to end in the community and why* then we have to work with them to make sure they are capable, motivated and have the opportunity to do so (see figure 8 below).

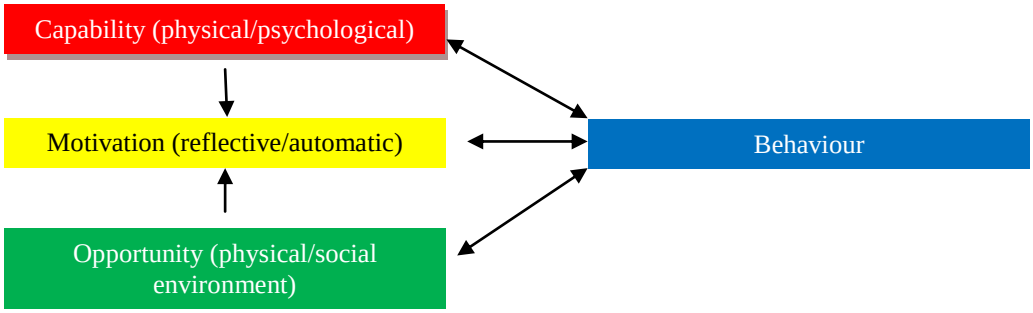


Figure 8. Representation of the COM-B model

So according to Michie et al., we can ask the following questions in relation to our target behaviour to help us identify which COM-B components may need to be the focus of an intervention aiming to support that behaviour. Remember these relate to the target behaviour NOT the overall goal of ending FGM.

Physical capability = Would the target behaviour be more likely to occur if there were an improvement in physical development or psychomotor skills?

Psychological capability = Would the target behaviour be more likely to occur if there were greater knowledge or understanding, improved cognitive skills or capacity, more mental energy, or greater capacity for self-regulation?

Reflective motivation = Would the target behaviour be more likely to occur if the individuals involved held more positive evaluations of the desired behaviour or stronger or more definite conscious intentions to engage in the behaviour; or they held these beliefs or intentions more consistently at appropriate times?

Automatic motivation = Would the target behaviour be more likely to occur if the individuals experienced stronger feelings of wanting or needing to engage in the desired behaviour, or experience stronger impulses to engage in that behaviour or inhibitions relating to competing behaviours; or that the wants, needs, impulses and inhibitions were experienced more consistently at appropriate times?

Physical opportunity = Would the target behaviour be more likely to occur if there was greater access to objects, services and locations that enable or facilitate the behaviour, or cues and reminders that prompt the behaviour?

Social opportunity = Would the target behaviour be more likely to occur if the culture, subculture, family or peer network included interactions and use of language that afforded the behaviour and helped to foster ways of thinking that promoted the behaviour?

Michie et al. provide an example case study in their guide which is based on the work of one of my current PhD students, Kristina Curtis, based at the University of Warwick. She is applying the BCW approach to her PhD work which involves developing a smart phone app to support families in managing their eating behaviour. This is an intervention targeted at addressing the childhood obesity problem, and the app is being produced for Warwickshire Public Health.

Development of a weight management app for parents of overweight children.

Aim:*To understand behaviours related to weight management in parents of overweight children as part of the development of a weight management mobile app.*

Method:*Focus groups were conducted with parents of overweight children referred to a weight management programme. Questions were framed using components of the COM-B model and parents were asked about what would need to change in order to achieve the following target behaviours:*

1. *Swapping unhealthy snacks for fruit or veg*

2. *Providing the appropriate portion sizes*

The focus groups were audio recorded and transcribed so statements could be coded using the COM-B model.

Results: *When asked about swapping unhealthy snacks for fruit or veg, parents considered they had the capability and opportunity to do this. However, they cited* ***feelings of guilt*** *and pressure from their children as a barrier to swapping unhealthy for healthy snacks. This was coded as 'automatic motivation' as the barrier is an* ***emotional reaction*** *to performing the behaviour. Participants, whilst motivated and having the opportunity to provide appropriate portion sizes, said they were* ***unsure what appropriate portion sizes were****. This was coded as 'psychological capability' as parents* ***did not have the relevant knowledge****.*

Understanding these target behaviours within the framework of COM-B provides the first steps in selecting appropriate intervention strategies to bring about the desired change.

My suggestion is that partners begin to get a handle on what they think the most important components to focus on in designing their intervention are with the COM-B. Which of the six components do they think would contribute to community members being able to start to perform the target behaviour? Is it all 6 or just a small selection? Then, the theory or theoretical domains framework (TDF) can help to think about factors in more detail.

This is what Michie et al say about the TDF in the BCW guide:

Theoretical Domains Framework (Michie et al., 2005; Cane et al., 2012)
The Theoretical Domains Framework (TDF; (Michieet al., 2005;Caneet al., 2012) is a set of 14 domains of theoretical constructs. The TDF was developed in response to implementation scientists feeling overwhelmed by the number of theories of behaviour and behaviour change that could potentially be used to inform intervention studies and not knowing where to start in selecting and applying them. The TDF was developed in a collaboration between psychologists and implementation researchers to provide an integrative framework of a synthesis of the key theoretical constructs used in relevant theories. The framework comprises the following domains: knowledge; skills; memory, attention and decision processes; behavioural regulation; social/professional role and identity; beliefs about capabilities; optimism; beliefs about consequences; intentions; goals; reinforcement; emotion; environmental context and resources; and social influences. Table 3 gives definitions of these domains and example questions for use in interviews or focus groups in collecting data to inform the behavioural analysis and the intervention). Dozens of studies have used the TDF to understand behaviours and design interventions. The following have been used specifically to improve implementation of guidelines in a variety of health settings (Francis et al., 2012). These include: smoking cessation by midwives (Beertock et al., 2012) and dental providers (Amemori et al., 2011); acute low back pain in primary care (French et al., 2012); transfusion prescribing (Francis et al., 2009); hand hygiene (Dyson et al., 2011); mental health (Michie et al., 2007); GP prescribing for upper-respiratory tract infections (Treweek et al., 2011).

If it is not feasible to assess all 14 domains, COM-B analysis can give an indication of which domains to select in conducting more detailed diagnostic interviews.

I have uploaded a word document that shows how the Com-B and TDF map onto one another in Google Drive here

The Cane et al (2012) article as referred to above can be accessed here

The optimal approach to understanding the target behaviour is to use the TDF to guide interviews, focus groups or structured discussion with as many relevant stakeholders as possible to see which domains are relevant to carrying out the target behaviour

We covered the TDF to some extent in our kick-off week workshop as well and we have already prepared an example of the TDF applied to an interview schedule to gather data relevant to a possible target behaviour aimed at the goal of ending FGM. Click on the link below to be taken to the appropriate document on our Google drive site for REPLACE2:

https://docs.google.com/file/d/0B0WlkH8nEH4-RzdSY1hrR0o4dFk/edit?usp=sharing

This document is only intended to be a starting point and should be adapted and developed as needed. It can be used to ask generic questions about FGM within the affected community as well as specific questions about the target behaviour for

intervention development. Thus we will find out about the facilitators of the behaviour targeted at the goal of ending FGM and an insight into the cultural beliefs, and barriers and facilitators of change in relation to FGM that exist.

So to be absolutely clear, **new partners** Gabinet, APF and CESIE need to identify and specify the target behaviour or behaviours they want to address with their communities and then collect data using TDF framework/COM-B to identify what the most important predictors, facilitators and inhibitors of the target behaviour are.

The **old partners** FSAN and FORWARD UK need to do the same but using more informal methods based on existing data, knowledge of the communities, and informal discussion with community researchers and volunteers interested in the project.

Both approaches are valid applications of the BCW guide because it is intended to be a pragmatic tool for informing intervention design.

Michie et al. suggest that the qualitative data collected through focus groups (could be through other methods but we have chosen focus groups for new partners or more informal approaches for old partners) is analysed with the relevant COM-B and TDF components very much in mind – do we see evidence for each component influencing the target behaviour? Or is there no evidence for certain components? Sections of focus group transcript for new partners data can be coded up accordingly. It may help to record informal discussions that old partners have in order think through what needs to change in order to change or implement a new target behaviour. They suggest recording examples of evidence in tables like those illustrated in figure 9 below.

To illustrate what this might look like I will provide some examples based on a the potential target behaviour that Marthine at FSAN suggested during kick-off week for Somali women in the Netherlands: *Talking to their daughters about how to protect themselves and preserve respect/dignity/chastity that has previously been perceived as provided through 'circumcision'.*

TIP: see definitions on pages 13 and 14 above of the COM-B components and what they relate to in terms of their influence on likelihood of behaviour. The women themselves would be useful to engage with about the barriers they face in doing this.

COM-B component	**Quote or paraphrase qualitative data**
Physical capability	No evidence for role of this component in influencing target behaviour
Psychological capability	Somali women have identified that they don't know how to go about doing this; they lack knowledge and skills
Reflective motivation	No evidence for role of this component amongst this group of women at least as they suggested it – they feel motivated to do it.
Automatic motivation	The women are likely to experience feelings of embarrassment, awkwardness or similar about talking about this type of communication .
Physical opportunity	There may well be helpful resources, support materials etc that could help provide physical opportunities to act here.
Social opportunity	Having greater cultural and social support for doing this would also be likely to help.

So, psychological capability, automatic motivation, and both physical and social opportunity may need to change in order that the Dutch Somali women can start to talk with their daughters about protecting themselves.

Task 1: Use the COM-B model to identify what needs to change in order to change the target behaviour. This may involve introducing or strengthening facilitators of the target behaviour and/or removing barriers to the target behaviour.

COM-B component	*Quote or paraphrase qualitative data*
Physical capability	
Psychological capability	
Reflective Motivation	
Automatic Motivation	
Physical Opportunity	
Social Opportunity	

Task 2: If a more detailed understanding of the behaviour is required, use the TDF to expand on the behavioural 'diagnosis'.

COM-B	*Domain*	*Quote or paraphrase qualitative data*
Psychological capability	Knowledge	
Physical capability Psychological capability	Skills	
Psychological capability	Memory, Attention and Decision Processes	
Psychological capability	Behavioural Regulation	
Reflective motivation	Social/Professional Role and Identity	
Reflective motivation	Beliefs about Capabilities	
Reflective motivation	Optimism	
Reflective motivation	Beliefs about Consequences	
Reflective motivation	Intentions	
Reflective motivation	Goals	
Automatic motivation	Reinforcement	
Automatic motivation	Emotion	
Physical opportunity	Environmental Context and Resources	
Social opportunity	Social influences	

Figure 9. Use of COM-B and TDF to identify what the intervention needs to target to bring about the desired change in community members' behaviour

It is possible then to use the TDF to further analyse which aspects of the four identified COM-B components might more specifically be targeted, and this will really help to understand the target behaviour. Detail given here on TDF for example (see COM-B and TDF document) and above in figure 9 shows that in order to address psychological capability you might need to think about knowledge, cognitive and interpersonal skills, memory, attention and decision-processes or behavioural regulation.

Those involved in analysing data and making decisions about all of this will need to familiarise themselves with these frameworks (COM-B and TDF) to be able to make these decisions about what needs to change to address/change the target

behaviours. They will be supported through engaging with and discussing things with the Coventry team (and in particular Stef Williams and Leanne Staniford while I'm on maternity leave).

NB – we now move from <u>understanding the target behaviour</u> to <u>designing the intervention</u>.

Step 5 – Identify intervention functions

Through systematic review Michie et al identified nine intervention functions that can be used in the design of an intervention. These are shown in figure 10 below with definitions and examples including examples of things that do not meet the definition for added clarification.

Intervention function	Definition	Example of intervention function	Not example of intervention function
Education	Increasing knowledge or understanding	Providing information to promote healthy eating	Providing cooking lessons *(this is training as the aim is to impart skill rather than increase knowledge)*
Persuasion	Using communication to induce positive or negative feelings or stimulate action	Using imagery to motivate increases in physical activity	Providing information on benefits of physical activity *(this is education as the aim is to increase knowledge about the impact of physical activity)*
Incentivisation	Creating an expectation of reward	Using prize draws to induce attempts to stop smoking	Using positive images of non-smokers to encourage smokers to quit *(this is persuasion as there is no direct reward)*
Coercion	Creating an expectation of punishment or cost	Raising the financial cost to reduce excessive alcohol consumption	Telling drinkers if they drink to excess they will be viewed negatively by their peers *(this is persuasion not coercion as there is no direct punishment or cost to the drinker)*
Training	Imparting skills	Advanced driver training to increase safe driving	A lecture about safe driving *(this is education as the aim is to impart knowledge, i.e. the what not the practical application of this knowledge, i.e. the how to that defines training)*
Restriction	Using rules to reduce the opportunity to engage in the target behaviour (or to increase the target behaviour by reducing the opportunity to engage in competing behaviours)	Prohibiting sales of solvents to people under 18 to reduce use for intoxication	Fines for the possession of solvents *(this is coercion as there is a cost for the undesirable behaviour)*

Figure 10. Definitions and examples of the 9 intervention functions (continued overleaf)

Intervention function	Definition	Example of intervention function	Not example of intervention function
Environmental restructuring	Changing the physical or social context	Providing on-screen prompts for GPs to ask about smoking behaviour	Creating a rewards system for GPs who ask about smoking behaviour *(this is incentivisation as there is a reward for the desirable behaviour)*
Modelling	Providing an example for people to aspire to or imitate	Using TV drama scenes involving safe-sex practices to increase condom use	Using TV advert to encourage condom use *(this is persuasion as the aim is to induce positive feelings towards condom use)*
Enablement	Increasing means/reducing barriers to increase capability (beyond education and training) or opportunity (beyond environmental restructuring)	Behavioural support for smoking cessation, medication for cognitive deficits, surgery to reduce obesity, prostheses to promote physical activity	Supporting GPs to recognise the symptoms ovarian cancer with an information pamphlet *(this would be considered education as the primary aim is to inform rather than support)*

Figure 10 continued. Definitions and examples of the 9 intervention functions

Figure 11 below shows how these intervention functions are linked to the COM-B and TDF, enabling you to identify appropriate intervention functions to use in the design of an intervention to bring about change in or implementation of the target behaviour you have selected with the community or sections of the community you are working with.

If you look back to the bottom of page 16 where I suggested in my COM-B analysis of the target behaviour of women communicating with their daughters about protecting themselves, I suggested that automatic motivation would be likely to pose a barrier to engaging in this behaviour. Further analysis of this with the TDF might lead you to identify 'emotion' as part of the problem (e.g. anxiety, embarrassment etc). If you look at figure 11 below, you will see t hat persuasion, incentivisation, coercion, modelling and enablement are all intervention functions that could be used to address this barrier or be targeted to support change/implementation of the target behaviour.

Michie et al. suggest that 'resources or logistic parameters' might limit the number of intervention functions you choose and which ones they are, but at least one should be chosen for each identified COM-B or TDF component that has been identified as important in understanding the target behaviour.

So in my COM-B analysis at the bottom of page 16 I identified 4 COM-B components and would need to therefore select at least one corresponding intervention function for each.

COM-B	TDF	Intervention functions
Physical capability	Physical skills	Training
Psychological capability	Knowledge	Education
	Cognitive and interpersonal skills	Training
	Memory, Attention and Decision Processes	Training Environmental restructuring Enablement
	Behavioural regulation	Education Training Modelling Enablement
Reflective motivation	Professional/Social Role & Identity	Education Persuasion Modelling
	Beliefs about Capabilities	Education Persuasion Modelling Enablement
	Optimism	Education Persuasion Modelling Enablement
	Beliefs about Consequences	Education Persuasion Modelling
	Intentions	Education Persuasion Incentivisation Coercion Modelling
	Goals	Education Persuasion Incentivisation Coercion Modelling
Automatic motivation	Reinforcement	Incentivisation Coercion Environmental restructuring
	Emotion	Persuasion Incentivisation Coercion Modelling Enablement
Physical opportunity	Environmental Context and Resources	Restriction Environmental restructuring Enablement
Social opportunity	Social Influences	Restriction Environmental restructuring Modelling Enablement

Figure 11. Intervention functions aligned with COM-B & TDF components

Step 6 – Develop the intervention by identifying behaviour change techniques (BCTs)

What is a behaviour change technique (BCT)?

A behaviour change technique (BCT) is the content of the intervention, it is the active ingredient, in its smallest possible component that can bring about behavioural change. They are observable, replicable and irreducible. I have uploaded the latest 93 item version of the taxonomy of BCTs and a paper relating to its development into the behaviour change file of the REPLACE2 Google Drive here.

Having already selected your intervention functions in step 5 above, you can now refer to figure 12 below to choose behaviour change techniques identified by experts as appropriate for those functions.

There are lots to choose from and you'll need to narrow them down according to some key criteria:

- Evidence – is there any evidence that this BCT will be effective in this situation and population? Given the novelty of this approach with FGM there may be no evidence, but there may be some relating to the target behaviour (e.g. effective communication interventions) that could be worth exploring. In addition, for 'providing information about health consequences', a BCT that aligns with education and persuasion as intervention functions, we know quite a lot about the ways in which interventions using this technique have faired in relation to FGM. It can work, but the target audience and t he specifics of the language used and the context must be carefully considered.
- Relevance – is it relevant to the local circumstances and what you're trying to achieve?
- Practicability – is it practical/feasible?
- Affordability – is it affordable?
- Acceptability – would it be acceptable and appropriate to the target audience?

Intervention function	Individual BCTs	Tick appropriate BCTs
Education	Feedback on the behaviour Feedback on the outcome(s) of the behaviour Biofeedback Self-monitoring of behaviour Self-monitoring of outcome of behaviour Cue signalling reward Satiation Prompts/cue Information about antecedents Re-attribution Behavioural experiments Information about social and environmental consequences Information about health consequences Information about emotional consequences Information about others' approval	
Persuasion	Feedback on the behaviour Feedback on the outcome(s) of the behaviour Biofeedback Re-attribution Focus on past success Verbal persuasion about capability Persuasive source Framing/reframing Identity associated with changed behaviour Identification of self as role model Information about social and environmental consequences Information about health consequences Information about emotional consequences Salience of consequences Information about others' approval Social comparison	
Incentivisation	Paradoxical instructions Feedback on the behaviour Feedback on the outcome(s) of the behaviour Biofeedback Self-monitoring of behaviour	

Figure 12. Intervention functions mapped to BCTs (continued overleaf)

Intervention function	Individual BCTs	Tick appropriate BCTs
	Self-monitoring of outcome of behaviour Monitoring of behaviour by others without evidence of feedback Monitoring outcome of behaviour by others without evidence of feedback Cue signalling reward Remove aversive stimulus Reward approximation Rewarding completion Situation-specify reward Reward incompatible behaviour Reduce reward frequency Reward alternate behaviour Remove punishment Social reward Material reward Material reward (outcome) Self-reward Non-specific reward Incentive Behavioural contract Commitment Discrepancy between current behaviour and goal Imaginary reward	
Coercion	Feedback on the behaviour Feedback on the outcome(s) of the behaviour Biofeedback Self-monitoring of behaviour Self-monitoring of outcome of behaviour Monitoring of behaviour by others without evidence of feedback Monitoring outcome of behaviour by others without evidence of feedback Remove access to the reward Punishment Behaviour cost Remove reward Future punishment Behavioural contract Commitment Discrepancy between current behaviour and goal Incompatible beliefs Anticipated regret Imaginary punishment	
Training	Feedback on the behaviour Feedback on the outcome(s) of the behaviour Biofeedback Self-monitoring of behaviour Self-monitoring of outcome of behaviour Behavioural practice/rehearsal	

Figure 12 continued. Intervention functions mapped to BCTs (cont.overleaf)

Intervention function	Individual BCTs	Tick appropriate BCTs
	Habit formation Habit reversal Graded tasks Behavioural experiments Instruction on how to perform a behaviour Mental rehearsal of successful performance Self-talk Self-reward	
Restriction		
Environmental restructuring	Cue signalling reward Remove access to the reward Remove aversive stimulus Satiation Exposure Associative learning Reduce prompt/cue Prompts/cue Adding objects to the environment Restructuring the physical environment Restructuring the social environment	
Modelling	Demonstration of the behaviour	
Enablement	Social support (unspecified) Social support (practical) Social support (emotional) Reduce negative emotions Conserve mental resources Pharmacological support Self-monitoring of behaviour Self-monitoring of outcome of behaviour Behaviour substitution Overcorrection Generalisation of a target behaviour Graded tasks Avoidance/reducing exposure to cues for the behaviour Adding objects to the environment Restructuring the physical environment Restructuring the social environment Distraction Body changes Behavioural experiments Mental rehearsal of successful performance Focus on past success Self-talk Verbal persuasion about capability Self-reward Goal setting (behaviour) Goal setting (outcome) Behavioural contract	

Figure 12 continued. Intervention functions mapped to BCTs (cont.overleaf)

Intervention function	Individual BCTs	Tick appropriate BCTs
	Commitment Action planning Review behaviour goal(s) Review outcome goal(s) Discrepancy between current behaviour and goal Problem solving Pros and cons Comparative imagining of future outcomes Valued self-identity Framing/reframing Incompatible beliefs Identity associated with changed behaviour Identification of self as role model Salience of consequences Monitoring of emotional consequences Anticipated regret Imaginary punishment Imaginary reward Vicarious consequences	

Figure 12 continued. Intervention functions mapped to BCTs

NB. Refer to full 93 item taxonomy on Google drive for more detail about each BCT.

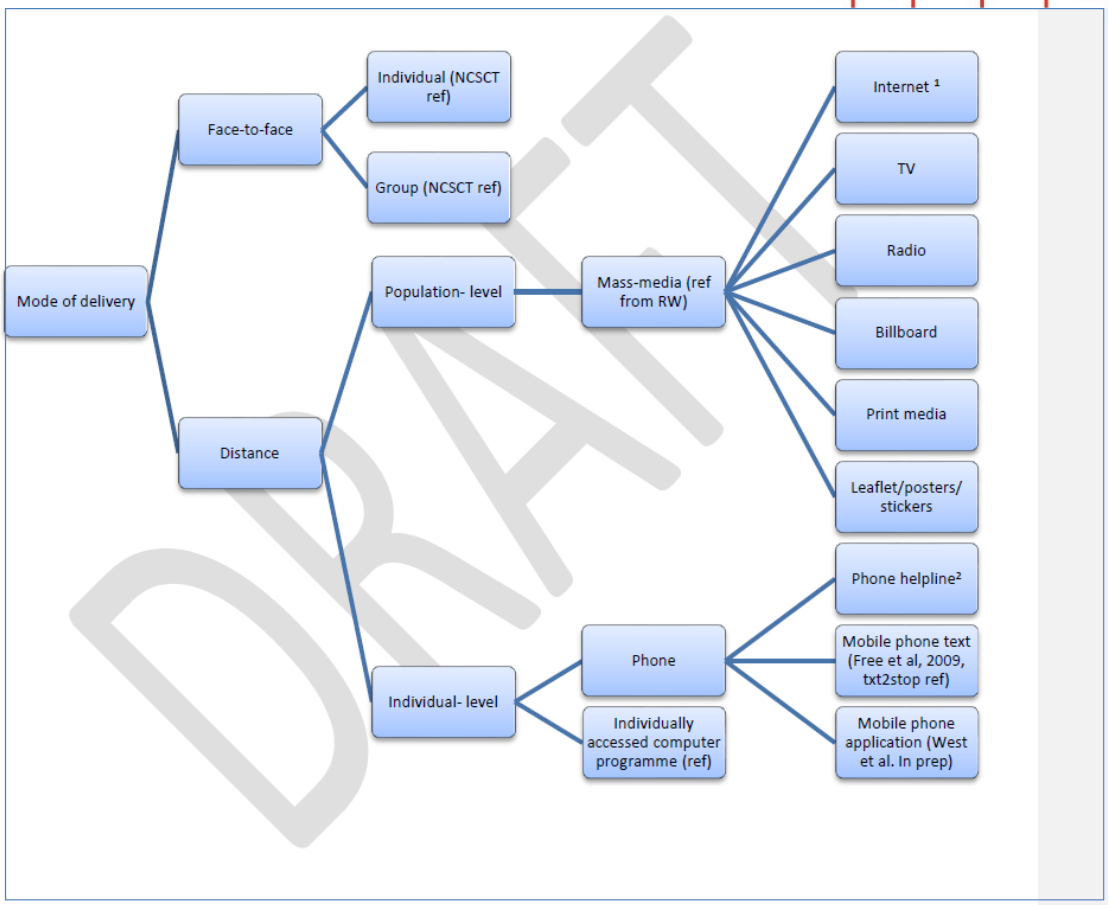
Step 7 – Select mode of delivery

A final thing to think about before getting down to the serious business of thinking about how to turn all of these decisions into an intervention is the mode of delivery. Sometimes, mode of delivery is chosen in advance, such as when my PhD student was asked to develop a smart phone app for weight management or when we've developed a Serious Game or website and web app to deliver an intervention. Mode of delivery can also influence the particular functions and BCTs that are possible to apply, so it's possible you may refine decisions in earlier steps based on the decision in this step.

Just as above key criteria to consider include:

- Efficacy–does it work as a mode of delivery?
- Local relevance –does it fit with local circumstance?
- Practicability –is it feasible to deliver?
- Affordability –can it be delivered within budget?
- Acceptability –is it engaging/does it fit with professional or political agendas?

Figure 13 below provides a decision-tree of possible modes of delivery.



1. (Brown *et al.*, 2012)
2. (Stead *et al.*, 2006)

Figure 13. possible modes of intervention delivery

In the project proposal for this work we talked about community workshop events for intervention delivery, and this is certainly one possibility, but it depends on what and who you want to target, and what you think will wok best.

NB. Michie et al include a step 8 which relates to selecting policy categories, but I think that this is not particularly helpful for our purposes at this stage, so I have left it out of this guide and instead simply provide some thoughts below on evaluation.

Partners, both old and new will need support and help in thinking about how to operationalize intervention functions and BCTs and modes of delivery into a viable intervention strategy or programme. Keeping things as simple as possible is always wise, and a certain amount of creativity is always involved in this stage of the process.

I would advise Stef and Leanne to consult other ARC HLI colleagues as there is a wide range of experience in the centre in intervention design.

Evaluation

Evaluation is critical to developing and implementing interventions, and needs to be planned at the same time as the content and mode of delivery.

There are many methodological approaches that can be employed, from simple metrics such as the number of people who attend an event/receive an intervention, pre and post intervention questionnaires, conducting interviews or other qualitative techniques, to full randomised controlled trials (RCTs).

The type of evaluation techniques employed will depend on what specifically you want to find out and what is feasible in the context of what you are aiming to do.

I would suggest that we will not be able to achieve anything anywhere near as ambitious as a RCT. What is likely to be more appropriate and feasible is taking pre and post measures of things you are aiming to target and change in the intervention, or gain qualitative feedback from those who have participated.

In designing questionnaire measures and interview/focus group schedules for evaluation, it will be important to consider the COM-B and TDF components that were identified as the targets for change and the target behaviour itself.

There are a range of standardised ways of measuring things like self-efficacy, attitudes, beliefs and so on that can be drawn on and you can measure behaviour (as in the target behaviour, not FGM) via self-report, and where possible by objective, observable methods.

Essentially, it is necessary to determine two main things:

1. Did the intervention strategy/programme bring about the changes it was designed to bring about?
2. What was people's experience like?

It's also often useful to know if the intervention was implemented exactly as planned, referred to as 'intervention fidelity', as this can account for not achieving anticipated outcomes.

FORWARD UK and FSAN will get to the delivery and evaluation part of the project earlier than APF, CESIE and Gabinet because they are not collecting new interview and focus group data.

All partners will require support in designing appropriate evaluation techniques and strategies and ensuring appropriate ethical approval is in place to carry this out. While I am on maternity leave Stef and Leanne will support this work also, but again can consult colleagues across ARC HLI with expertise in this area.