

E-Com@Eu Programme Work Programme 3



CJM and Segmentation Report

Part Two: B Prototype Tools / Guides to

Guide to Segmentation in relation to Pandemic Influenza

October 2013

Strategic Social Marketing Ltd
Attabara, Conford, Hants,
GU307QW, UK
Tel 01428 751 475
www.strategic-social-marketing.org
Registered Company No : 6963216

Content

	Page
Social Marketing and Segmentation	3
Segmentation defining what it is	3 - 4
Key attributes of a sound segmentations	5
Links to Customer Journey Mapping	5 - 6
Examples of segmentations applied to Pandemic Flu intervention	6 - 7
Stages in constructing segmentations	8 - 18
Stage 1: Identifying potential target audiences	
Stage 2: Quantifying what we already know	
Stage 3: Assessing Available data	
Stage 4: Deciding what analysis is feasible with the available data	
A hypothetical segmentation solution	19
As the outbreak develop how does this affect the segmentation	22 - 26
Conclusion	26

Social Marketing and Segmentation

A key component of all successful Social Marketing interventions including those focused on pandemic events is the need for audience segmentation. Segmentation is based on the obvious recognition that people are different and that includes how they respond to information about health and other influences on their behaviour.

As resources for public health are finite ensuring that investment in interventions yield the greatest impact should be a priority for any programme. Grouping the audience into meaningful segments allows organisations to design efficient and effective strategies for communicating with total populations and specific harder to reach groups.

Segmentation defining what it is

Segmentation can be a powerful tool in understanding population groups and focusing resources where they are most needed. It is a process of looking at the audience or target group and seeking to identify distinct, manageable sub-groups (segments) that may have similar needs, attitudes, beliefs or behaviours. Those responsible for designing interventions to influence people in the commercial, not for profit and government sectors regularly segment people into groups to aid the targeting of support and influence. In policy development strategists talk about adults who are *working* and adults who are *unemployed*, *single mothers who smoke* and those who do not; and we subdivide these further by any number of social demographic characteristics including; social class, ethnicity, level of income, use of public services, and neighborhood type etc. are all used to target interventions. It is possible to segment populations based on quantitative or qualitative data. Some of the most useful segmentations start with looking at readily available quantitative data and then exploring the emerging segments with more in-depth qualitative research. When building segmentations it is important to draw knowledge from many fields including behavioural theory, statistics and public health science. There are a wide range of segmentation techniques: socio-demographic, geodemographic, behavioural, epidemiological, psychographic and attitudinal, service utilization, and social network analysis, to name a few. However, there will also be a measure of judgment from practitioners who will be responsible for applying the segment definitions to create targeted programmes and interventions. In the public health arena segmentation has tended to focus on the use of demographic (age, sex, class, etc.) geodemographic (type of neighborhood), and especially epidemiological data (mortality and morbidity). However, factoring in attitudinal and *psychographic data* to provide a rounder picture of the segments is a good starting point for developing tailored interventions. 'Psychographic' variables describe the individual in terms of their overall approach to life, including personality traits, values, beliefs, and preferences.

As Table 1 shows, they all draw on a pool of common factors. Not all these factors will be relevant to pandemic flu but subsets within each domain will have relevance.

Table 1

Behaviour/Current Status	Demographics	Geographic	Activities and Lifestyle	Attitudinal/Psychographic
Dependency / addiction issues How engrained is the behaviour – how long has it been sustained Frequency of behaviour e.g. Regular, occasional, hardly ever, experimenting stage Occasion – e.g. social smoker, smoke after meal, never smoke at work Stage of change: e.g. contemplating change or have tried to change and relapsed Health status Are they in serious debt? Have they just experience a major life event Use of services – how often? What for? Habits	Age / Life stage Gender Family size Income Social Class/Occupation Education Religion Ethnicity	Urban / rural Geodemographic Proximity to services Area deprivation Social Capital	How do they spend their money? Where do they socialise and what do they do What do they read, watch and listen to and what engages them most	Needs, desires, aspirations Beliefs and values Personality type Self esteem , self efficacy, locus of control Key influences in their life – parent, peers, partner, religion, and the media, role models Attitudes towards the issues in question, the service, the product, the organisation, the government, health professionals' e.g. contemplating or tried and relapsed attitudes towards services (NHS, local councils etc), customer satisfaction

Target audiences can be segmented using some of these categories into groups that share common beliefs, attitudes and behaviours. Interventions are directly tailored to specific audience segments rather than relying on 'blanket' 'spray and pray' approaches

When segmenting populations, the aim should be to define a small number of groups so that:

- All members of a particular group are as similar to each other as possible; and
- They are as different from the other groups as possible.

- It is important for social marketers to know what differentiates one group from another; but, what is more important are the similarities between people in a particular group. These make it possible to create clusters of people and target our interventions at priority groups.

Key attributes of a sound segmentations:¹

- Segmentations should build on current knowledge
- Should get us a step closer to knowing our audience.
- Provide a common language for understanding peoples motivations and behaviours
- **Utility/Applicability** – the segments should exist in the real world rather than be just statistical constructs; the segment descriptions should make sense to the people who have to apply them; and the segmentation should add value and greater sophistication when developing and targeting interventions
- **Replicability** – practitioners should be able to identify or recreate the segments in their own research.
- **Stability** – the segmentation definitions should be fairly stable but the size of the segments may change over time as people move in and out of segments.
- The segmentation should create **a focus for our time and resources**
- Segmentations should **not be too complicated** – some of the most powerful segmentations are the simplest
- The segmentation should **not be the final word but should allow room for new insight.**

Most segmentations within the public health sector use **‘quantitative’** (measurable) data (e.g. surveys, epidemiological data, or hospital-episode data). However, there are some good examples of **‘qualitative’** segmentations (based on people’s views, needs, and behaviours) which have drawn on in-depth interviews and focus groups to produce typologies of particular groups.

Although qualitative segments cannot provide accurate estimates of the size of each segment, they do provide a rich description of the various groups and types. The qualitative segments can be sized subsequently using quantitative survey research.

Links to Customer Journey Mapping

The type of segmentation that is applied will depend on what the public health practitioner is trying to achieve. Irrespective of the approach used, the resulting segmentation should be

¹ D. McVey and L. Walsh “Generating insight and building segmentations – moving beyond simple targeting” Chapter 7 in *Social Marketing and Public Health: Theory and practice*. Editors : French, Blair-Stevens, McVey and Merritt. OUP 2009

clear and actionable and should help the public health team visualize the people they are trying to reach in a way that is both accurate and easy to communicate. A good strategic segmentation of all relevant subgroups that maps behaviour, service use, and attitudes can provide public health teams with a much clearer understanding of priority groups and be a valuable asset to planning and resource allocation.

Segmentation starts with the citizen and how they can be helped and encouraged to behave in a healthy way instead of focusing on the actual behaviour that the public health practitioner wants them to adopt or maintain. Messages, products, or health services should be designed or redesigned around the priority segments' needs, beliefs, attitudes, and behaviours. If executed well, this will produce more satisfied citizens and a more efficient delivery of interventions.

Segmentations do not last forever; subgroups of the population are continuously developing and changing what they know, believe, and feel about issues. Segmentations that are developed need updating as media, services, and attitudes change. However, a well-constructed segmentation, which visualizes citizens with clarity and insight, should assist public health organizations and their delivery partners target better interventions and monitor results for a number of years.

Examples of segmentations applied to Pandemic Flu intervention

In the three countries, England, Italy, and Hungary that SSM reviewed as part of work programme 6 for the E-Com programme, there was little evidence of segmentation beyond identifying high priority groups (Older people, Chronically Ill, Pregnancy, Children, and Health Care workers). However, recent research literature provides some insight into the use of segmentation generally in public health.

A recent review by Quinn et al.² looking at Social Marketing intervention across a number of issues concluded that the least described or mentioned aspects of the Social Marketing process were pretesting and audience segmentation. Another review looking specifically at the use of Social Marketing techniques (including segmentation) in the prevention and control of communicable diseases³ noted that segmentation is closely related to formative research and without information about the formative research process, the reviews could not discuss segmentation strategies. A review by Mah et al (2008)⁴ looking at 20 years of Social Marketing Analysis of Hand Hygiene Promotion concluded that more than half of the studies included in the review described audience segmentation strategies based on formative research and **but that segmentation was mainly by age and academic level**, see Box 1.

Applying segmentation techniques to Pandemic Flu

Reviewing a number of countries' pandemic flu interventions, the evidence of planned segmentation of populations and audience is limited. There are a number of possible reasons for this:

² Quinn GP, Ellery J, Thomas KB, Marshall R. Developing a common language for using social marketing: an analysis of public health literature. *Health Marketing Quarterly* 2010;27(4):334–353.

³ Evidence review: social marketing for the prevention and control of communicable disease. Insights into health communication. www.ecdc.europa.eu: MacDonald L, Cairns G, Angus K, Stead M. Evidence review: social marketing for the prevention and control of communicable disease. Stockholm: ECDC; 2012.)

⁴ Mah MW, Tam YC, Deshpande S. Social marketing analysis of 20 years of hand hygiene promotion. *Infection Control and Hospital Epidemiology* 2008;29(3):262–270.

1. The pandemic progressed so quickly from WHO phase 1 to phase 4 that there was little time to conduct any audience research or segmentation analysis to develop more sophisticated communication strategies.
2. To invest resources in separate strategies for different segments or target groups requires evidence that these targeted strategies would produce a return of the investment. Some communication experts believe evidence for such claims is not strong.
3. For pandemics which have the potential to infect all groups very quickly the case for immediate mass population approaches outweighs the argument for targeting particular segments.

These arguments are valid but research indicates that different demographic and attitudinal groups respond differently to the same message or intervention.

One of the basic tenets of Social Marketing is that tailoring interventions based on an insight into the beliefs and behaviours of specific sub groups (or segments) will be more likely to deliver the desired impact on behaviour.

This is the case whether that be encouraging people to implement preventive behaviours such as using tissues and hand gel; calling a help line for antivirals; going to the family doctor for vaccination, or staying home from work whilst infected.

A possible segmentation of the general population for pandemic flu interventions.

Most interventions during the pandemic flu outbreak in 2009-2010 involved a mixture of three broad stands:

- **Hand and respiratory hygiene and social distancing**
- **Antiviral use**
- **Vaccination**

There was evidence in the many of the interventions of basic demographic segmentations based on risk groups.

BOX 1

Mah MW, Tam YC, Deshpande S. Social marketing analysis of 20 years of hand hygiene promotion

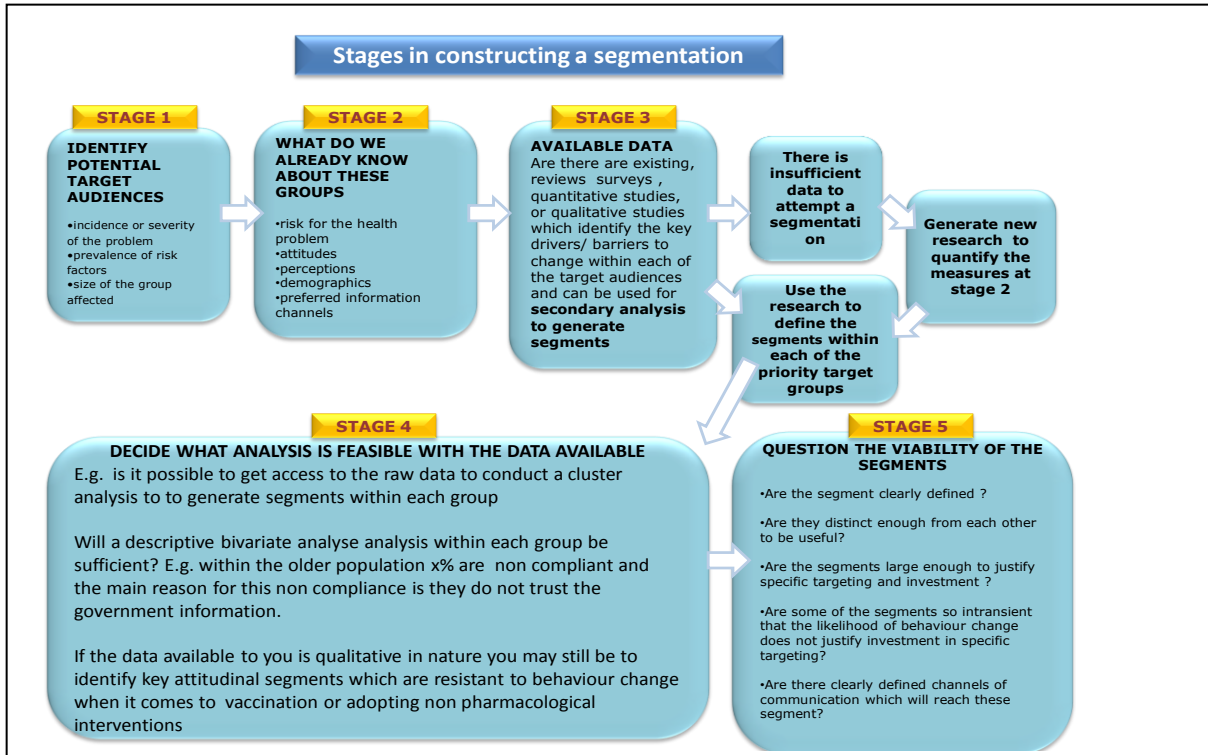
Summary of the use of Social Marketing Benchmark Criteria.

The interventions were assessed against social marketing benchmark criteria:

- 30% of included studies included formative audience research
- 9% used social or behavioural theories
- **51% used segmentation and audience targeting**
- 83% used components of the marketing mix
- 6% considered the influence of competing behaviours
- 13% cultivated relationships with the target audience
- 28% provided simple behavioural messages

Stages in constructing segmentations

Below is a suggested list of five stages to build a segmentation model



Stage 1: Identifying potential target audiences

The scientific evidence indicated that the impact of pandemic flu will have varying effects on certain demographic groups.

- Older groups
- People who are chronically ill
- Pregnant women
- Children (targeting parents of Children)
- Marginalised groups (Homeless , travellers, refugees, substance misusers)

Stage 2: Quantifying what we already know

Within each of these groups there will be a considerable number of people who will respond quickly to interventions to reduce their own risk of infection and limit the spread of infection from themselves to others but there will also be people who, for whatever reason , will not

respond with the required behavioural change. The reasons for compliance and non compliance will be based on attitudes, beliefs, social norms and capability of individuals to respond to messages and attain the behavioural goals.

Noncompliance - based on beliefs and attitudes

The reasons for non-compliance will vary by the behavioural change goals. For example, the reasons for non compliance with vaccination may be very different to the reasons for non compliance the social distancing measures. The segmentation approach will necessarily vary as a result. However, there may be considerable overlap in non compliance factors across a number of behavioural goals.

For example, possessing a belief that "I am not at risk" or "there is too much fuss being made about pandemic flu" or being someone who "takes most of their health information from non official sources" will not only influence their propensity to take up vaccination but may also influence their compliance with hygiene and social distancing measures.

Compliance with influenza vaccination and factors affecting the compliance

As part of the EU seventh framework the TELL ME project reviewed the specific communication needs of particular groups in the area of pandemic flu. The key factors were summarised as follows:

Target group	Compliance characteristic	Positive factors associated with compliance	Negatively factors associated with compliance
Health care workers	<ul style="list-style-type: none"> Compliance varied from very low (less than 10%) to around 40-50% Compliance varied widely between and within countries Compliance varies widely by professional category 	<ul style="list-style-type: none"> Self-protection Desire to avoid infecting patients Desire to protect family members Perceived safety of the vaccine Perceived efficacy of the vaccine Perceived seriousness of disease Perceived risk of the disease Perceived seriousness of complications from disease Access to vaccine Cost of vaccine 	<ul style="list-style-type: none"> Fear that vaccine could cause disease
Elderly	<ul style="list-style-type: none"> A trend towards increasing compliance rates among those over 65 years of age 	<ul style="list-style-type: none"> Number of visits to a physician during the year 	<ul style="list-style-type: none"> Disbelief in the efficacy and safety of the vaccine Fear of side-effects or influenza resulting from the vaccine
Chronically ill	<ul style="list-style-type: none"> Compliance is greater than for healthy people Compliance is increasing over the years Compliance in Europe is relatively low A wide difference in compliance of people with different diseases 	<ul style="list-style-type: none"> Number of physician visits and acceptance of their advice 	<ul style="list-style-type: none"> Fear of side effects Disbelief in vaccine efficacy

Pregnant women	<ul style="list-style-type: none"> Compliance tends to be better with seasonal influenza vaccines than with pandemic vaccine Compliance with seasonal influenza vaccination in the U.S. is increasing yearly 	<ul style="list-style-type: none"> Health care provider recommendation 	<ul style="list-style-type: none"> Lack of knowledge of the importance of vaccine and where to get it Concerns for the effects of vaccine on fetal and maternal health
Pediatric population	<ul style="list-style-type: none"> A big difference in compliance between different countries and over the years Compliance of chronically ill children is greater than that for healthy children Relatively high percentage of children getting only one dose of the vaccine 	<ul style="list-style-type: none"> Child's influenza vaccination in previous year Child's receipt of all recommended immunizations Child's uninterrupted health insurance coverage Mother's marital 	<ul style="list-style-type: none"> Using a family doctor rather than a pediatrician Parents belief that the vaccine was unneeded or that the child was getting too many shots Parents having a hard time obtaining the vaccine

Source: D1.3 Segmentation and Specific Communication Needs of Target Groups TELL ME project pages 19-20

Compliance with non-pharmacological interventions to prevent the spread of influenza

The TELL ME project also reviewed evidence on the efficacy of, and compliance with, non-pharmacological interventions to prevent the spread of influenza.

The WHO recommendations on measures to be adopted during the influenza pandemic alert period have included isolation of patients and quarantine of contacts and that during the

pandemic period, the focus should shift to delaying spread and reducing effects through population-based measures.

One of the key recommendations is that people with flu-like symptoms should stay at home. Depending on the severity of the pandemic, social distancing measures should be considered and non-essential domestic travel should be limited. Personal hygiene, such as hand washing and respiratory etiquette, are considered to be basic requirements. There is no clear-cut recommendation on the use of face masks.

There is little good quality scientific evidence on the efficacy or effectiveness of most non-pharmaceutical interventions to prevent the spread of influenza during pandemics. The recommendations are based on consensus among experts and include good hand hygiene and respiratory etiquette, surveillance and case reporting, and rapid viral diagnosis in all settings and during all pandemic phases. The recommendations also encourage patient and provider use of masks and other personal protective equipment as well as voluntary self-isolation of patients during all pandemic phases. The experts rejected other non-pharmaceutical interventions, including mask-use and other personal protective equipment for the general public, school and workplace closures early in an epidemic. Mandatory travel restrictions were rejected as likely to be ineffective, infeasible, or unacceptable to the public.

Factors that affect compliance with vaccination may also be applicable to non pharmacological measures. They include:

- Desire for self-protection
- Desire to avoid infecting patients
- Desire to avoid infecting family members
- Perceived seriousness of the disease
- Perceived risk of the disease
- Perceived seriousness of complications from the disease.

Stage 3: Assessing Available data

Using Existing data

Based on the available review data, which explores the knowledge, attitudes and beliefs of priority groups, it is possible to create a broad set of categories (or segments) of people who are more or less likely to respond to behaviour change messages. In the absence of any other data this will provide useful information about where resources should be targeted. However, if quantitative data is available, applying a more systematic approach will improve the accuracy of the segment definitions, the estimated size of each segment and hence the effectiveness of the targeting of planned interventions.

There may be existing sources of data in a country on the knowledge, attitudes, beliefs and practices that are relevant to pandemic flu. If this is the case, this data can be re-analyzed to generate segments. There are many approaches to analysing data to generate segments. It is important to have a plan of analysis which will meet the objectives for the segmentation.

For example, if a public health team wish to identify distinct segments within a subset of a population e.g. older people, one approach would be to select this group from the data set and define segments within this group. For example older people who are resistant to vaccinations or who do not feel at risk or who are unable to attend vaccination clinics compared to those that do get vaccinated.

Alternatively it is possible to decide to look at the whole adult population and identify a set of key characteristics of those who are not vaccinated which in turn will define the particular segments.

The more information you have on respondent's knowledge, attitudes, beliefs and behaviours, the more detailed segment definitions you will be able to construct. However, using **too many variables** to define segments can overcomplicate the definitions and result in the segments having little use for those designing interventions and campaigns. Only use variables which clearly have a strong influence on behavioural intentions or actual behaviour e.g. a sense of personal susceptibility, a belief in the severity of the disease, fear of side effects, trust in government information or access to vaccines and antiviral. How to select variables is explained later in Stage 4.

What data is available on European attitudes and behaviour in relation to pandemic flu?

The Directorate-General for Health and Consumers commissioned a survey that examines public opinion about influenza and pandemic H1N1 2009. The Flash Eurobarometer survey "FL287 – Influenza H1N1"

This survey covered the following issues:

- The intention to get vaccinated against seasonal influenza this year
- Awareness of pandemic H1N1 influenza (swine flu)
- Worries and beliefs about pandemic H1N1 2009
- Level of information about pandemic H1N1 2009
- Trust in sources of information about pandemic H1N1 2009
- Pandemic H1N1 2009 in the media
- Measures against pandemic H1N1 2009
- Opinions about the vaccination against H1N1 influenza

The survey's fieldwork was carried out between the 26th and 30th November 2009. Over 28,000 randomly selected citizens aged 15 years and over were interviewed across the 27 EU Member States, as well as in Norway, Switzerland and Iceland. The survey was conducted by telephone, with WebCATI (web-based computer assisted telephone interviewing). To correct for sampling disparities, a post-stratification weighting of the results was implemented, based on socio-demographic variables.

The data provides a useful and unique) cross country comparison. The Summary report is available at http://ec.europa.eu/public_opinion/flash/fl_287_sum_en.pdf and provides a top line analysis for whole of the EU. Datasets are also available by specific countries with approximately 1000 people interviewed in each member state.

Looking at the top line findings on the key questions is a good place to start to determine which variables to include in the segmentation.

The questions were chosen because they were deemed important measures to assess the population's opinions and behaviours but also to assess the extent of the barrier to infection control and vaccination which have been documented in other public health research

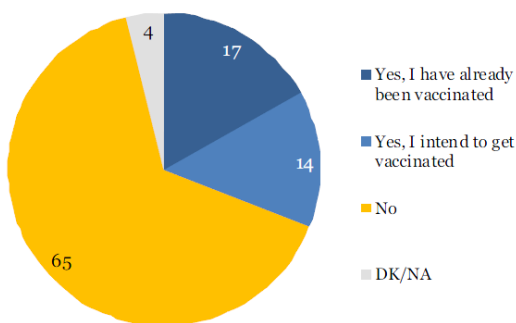
The measure below can be summarised into 4 categories:

- Knowledge and beliefs about the pandemic, infection control and vaccination
- Risk and susceptibility
- Trust in government and other information sources
- Behaviour / behavioural intentions (hygiene and vaccination)

Looking at the spread of responses within each question indicates that most questions work in differentiating respondents. For example, on the issue of "concern" there are reasonable sample sizes of people who were *concerned* (approx. 40%) compared to those who were not *concerned* (approx 60%). Hence this variable should yield sufficient numbers in each category for analysis. However, you should note that this figure is a European average. When looking at individual country data the profile of responses may be very different.

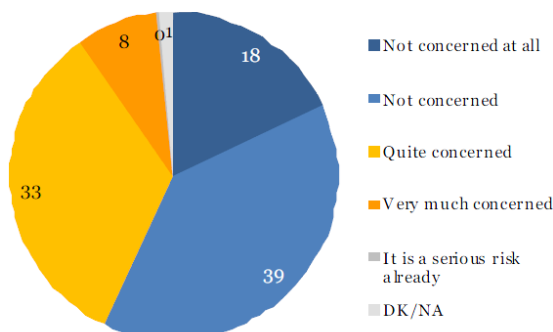
If you find that say 10% of the population say "yes" to a question and 90% say "no" then the response to this question is approaching saturation and is unlikely to be useful in a segmentation analysis.

Intent to get vaccinated against seasonal influenza this year



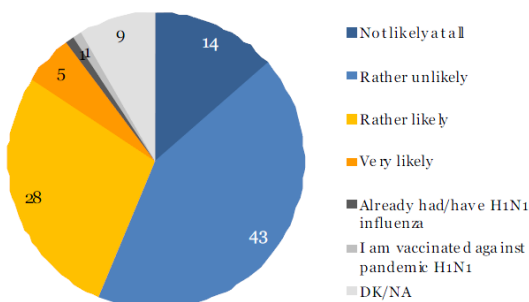
Q1. Do you intend to get vaccinated against seasonal influenza this year?
Base: all respondents, % EU27

Concern that the pandemic H1N1 2009 may develop into a serious risk



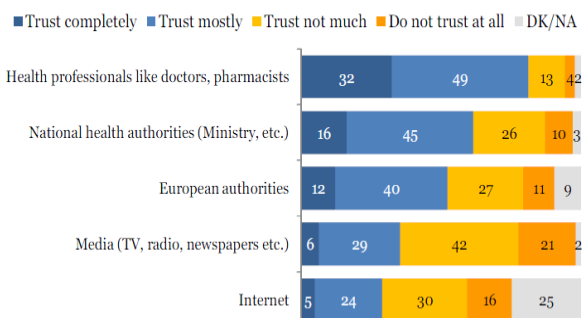
Q3. How concerned are you that the pandemic/swine (H1N1) flu may develop into a serious risk in [OUR COUNTRY]?
Base: all respondents, % EU27

Likelihood of personally catching influenza H1N1



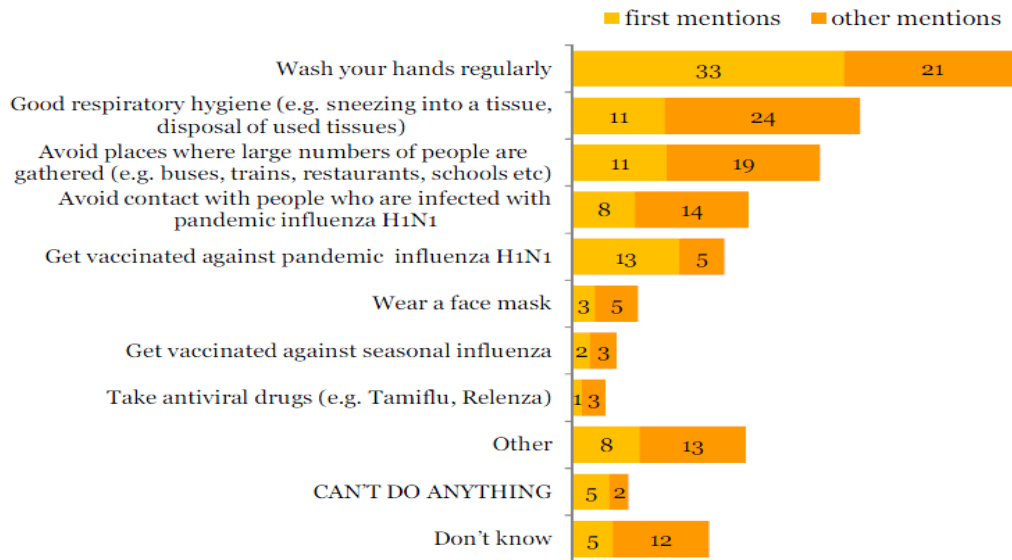
Q4. How likely do you think it is that you, personally, will catch pandemic (H1N1) flu?
Base: all respondents, % EU27

Trust in information sources for the pandemic H1N1 2009



Q10. How much do you trust each of the following sources to inform you about the pandemic (H1N1) flu?
Base: all respondents, % EU27

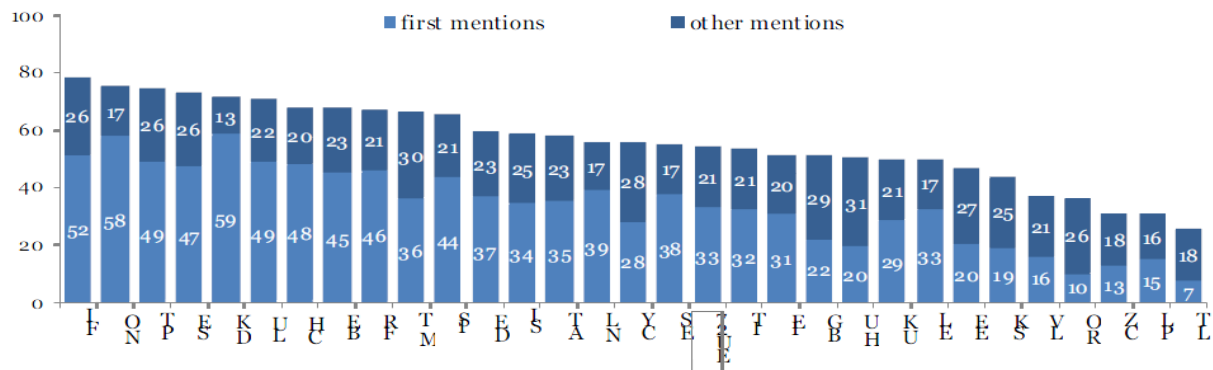
What can people do to protect themselves against the pandemic influenza H1N1?



Q7. In general, what can people do to protect themselves against the pandemic H1N1 flu?

Base: all respondents, % EU27

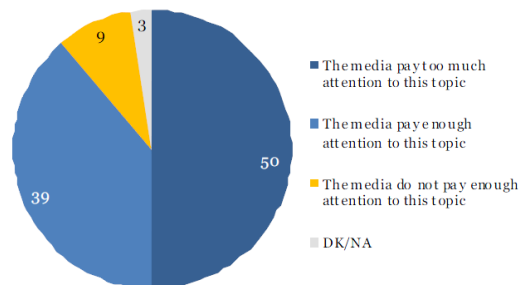
Prevention: Wash your hands regularly



Q7. In general, what can people do to protect themselves against the pandemic H1N1 flu?

Base: all respondents, % by country

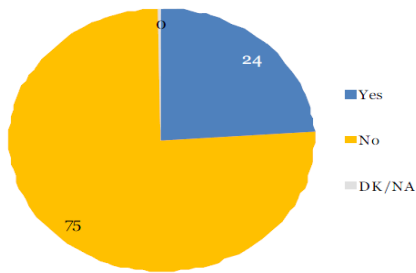
Pandemic H1N1 2009 in the media



Q11. In your opinion, do the media in [OUR COUNTRY] pay too much, enough, or not enough attention to the pandemic (H1N1) flu?

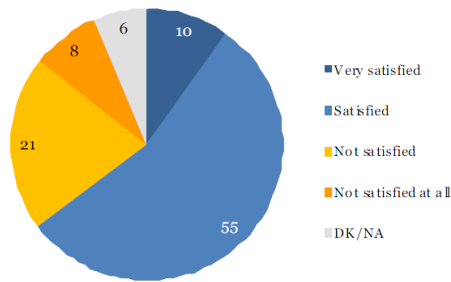
Base: all respondents, % EU27

Behavioural changes to protect against pandemic H1N1 2009



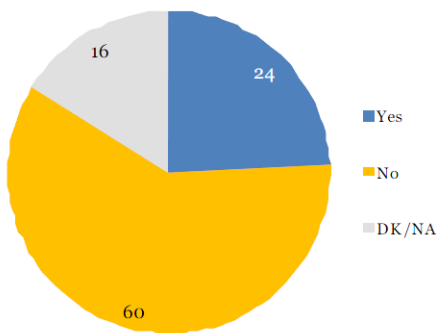
Q8. Have you changed your behaviour to protect yourself against pandemic (H1N1) flu?
Base: all respondents, % EU27

Satisfaction with taken preventive measures against pandemic H1N1 2009



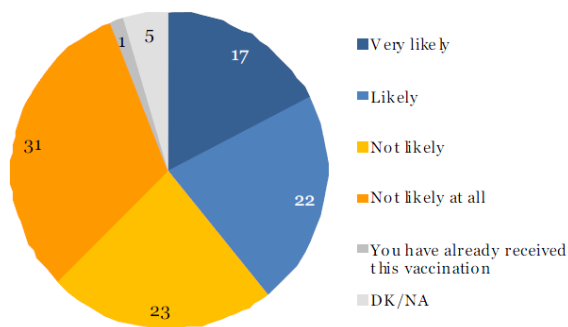
Q12. Based on what you know, how satisfied are you with the preventive measures that authorities in [OUR COUNTRY] have taken so far against pandemic (H1N1) flu?
Base: all respondents, % EU27

Seasonal influenza vaccination provide protection against the H1N1 influenza



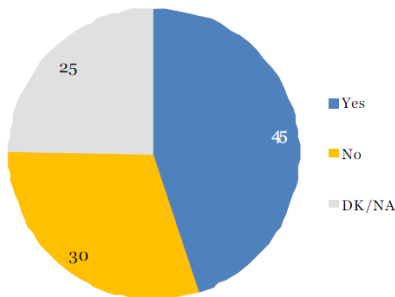
Q14. Do you think that the seasonal flu vaccination will provide protection against the H1N1 flu?
Base: all respondents, % EU27

Likelihood of getting vaccinated against the pandemic H1N1 2009



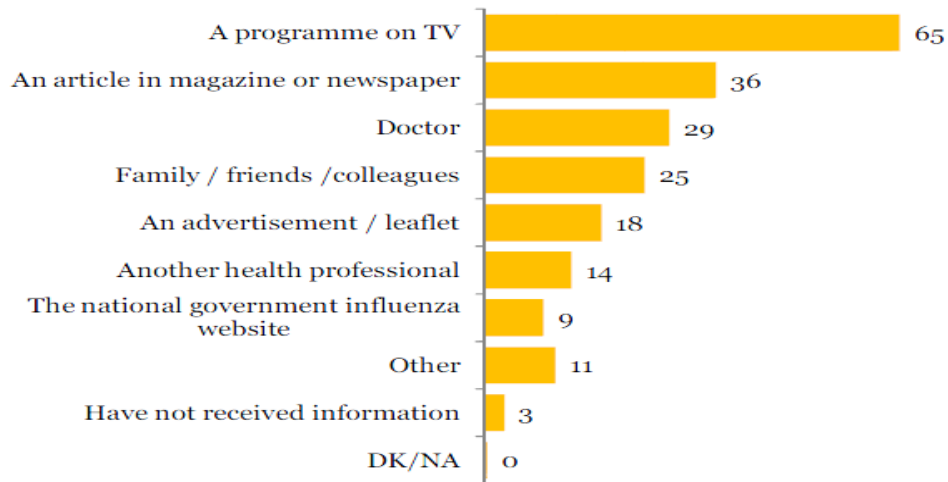
Q16. If the vaccine were available to you, how likely would you be to get vaccinated against the pandemic (H1N1) flu?
Base: all respondents, % EU27

Will pandemic H1N1 2009 vaccine be effective and safe?



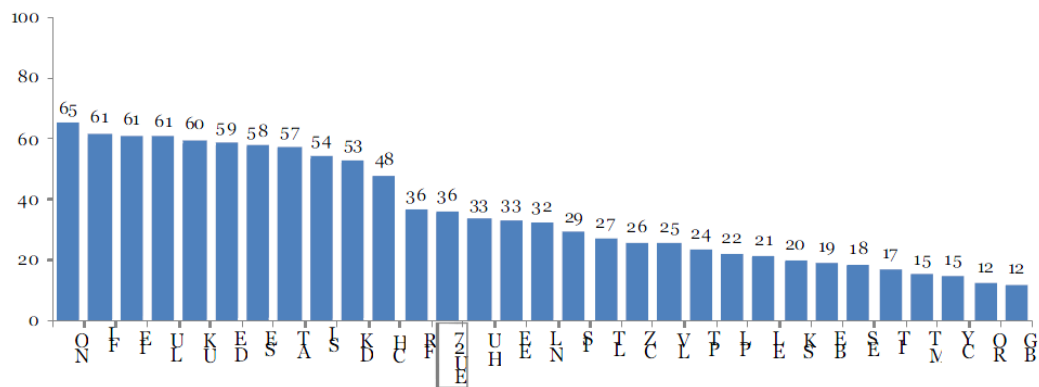
Q18. Do you believe the pandemic (H1N1) flu vaccine will be effective and safe or not?
Base: all respondents, % EU27

Source of information about the H1N1 influenza vaccine



Q15. From whom or where have you received information about the H1N1 vaccine?
Base: all respondents, % EU27

Source : **An article in magazine or newspaper**



Q15. From whom or where have you received information about the H1N1 vaccine?
Base: all respondents, % by country

Stage 4: Deciding what analysis is feasible with the available data.

The Eurobarometer is a general population dataset so in addition to the variables described above there will be a number of demographic variables, age, gender, social class and other socio economic variables.

Analysis - Exploring the data

NOTE:

Some of the analysis steps described employ basic statistical techniques. If you require help with interpreting the output from such analysis you should ask a statistician who will be able to interpret the tests of association and correlation.

Step One - Eyeball the data

Analyse the pandemic flu questions by key demographics and look for variations, particularly variations by the key target groups e.g. the older populations and those who are chronically ill. For example, you may discover that greater proportions of older people feel greater susceptibility and acknowledge the seriousness of the disease but also feel that seasonal vaccinations will protect them against the flu. Clearly this group will need to be made aware that seasonal vaccine does not protect against pandemic flu. However, there may be a smaller but significant group of older people who do not feel at risk, who do trust health professionals and have no intention of getting vaccinated. This group will need a very different intervention to move them to a stage where you can persuade them to get vaccinated. Just by looking at simple bivariate relationships between attitudes, patterns and distinct groupings begin to emerge.

Step Two - Construct a correlation matrix

Look for significant relationships between certain attitudes. For example, are people who believe that the vaccine is unsafe, also less likely to trust government and health professionals? And are they less concerned about the pandemic? The easiest way to examine the relationships between different attitudes and the relationship between attitudes and demographics is to generate a **correlation matrix** which includes all these variables.

The matrix will give an immediate sense of which attitudes are most strongly correlated and which attitudes vary by age and sex and social grade - or whatever other demographics variables you have in the data set which you believe will be useful.

NOTE:

The Eurobarometer is a general population survey. The proportion of health care workers (an important target group for pandemic influenza interventions) within a general population sample will be small and may not permit any further analysis. Data on health care workers attitudes which will permit segmentation analysis will have to be gleaned from other sources but the same process of analysis described in this section of the guide will apply.

Having explored the relationships in the correlation matrix you will have identified which attitudes are significantly correlated with each other and which attitudes are more closely correlated with intentions to change behaviour.

CORRELATION MATRIX - The statistical correlation analysis will populate each cell		Knowledge and beliefs			Trust			Risk and susceptibility		Intentions and behaviour change			Demographics and state of health
		What can you do to protect yourself against pandemic flu	Seasonal influenza vaccine provide protection	Will the vaccine be effective and safe	Trust in the information sources for pandemic flu	Media treatment of pandemic flu	Satisfaction with the preventative measures taken	Likelihood of personally catching pandemic flu	Concern that pandemic flu may develop into a serious risk	Intention to get vaccinated against seasonal flu	Likelihood of getting vaccinated against pandemic flu	Have you changed your behaviour to protect against pandemic flu	
Knowledge and beliefs	What can you do to protect yourself against pandemic flu	1											
	Seasonal influenza vaccine provide protection		1										
	Will the vaccine be effective and safe			1									
Trust	Trust in the information sources for pandemic flu				1								
	Media treatment of pandemic flu					1							
	Satisfaction with the preventative measures taken						1						
Risk and susceptibility	Likelihood of personally catching pandemic flu							1					
	Concern that pandemic flu may develop into a serious risk								1				
Intentions and behaviour change	Intention to get vaccinated against seasonal flu									1			
	Likelihood of getting vaccinated against pandemic flu										1		
	Have you changed your behaviour to protect against pandemic flu											1	
Demographics and state of health	Age, Gender, Social Grade, chronic illness, access to media etc												1

Step Three - Simple Statistical Modeling

In addition to exploring the bivariate relationships between variables, a useful added step is to build a simple **logistical regression model**.

The output variable (the "dependent" variable) should be a behaviour variable or a behavioural intention i.e. intention to get vaccinated or to adopt behaviour changes to minimise the chance of infection. The input variables (the "independent" variables) should be selected demographics, attitudes and belief statements that have a statistically significant correlation with the behavioural /behavioural intentions. The correlation matrix will provide information on which variables to include in the model. The logistic model will provide information on the **relative impact** on behaviour and behavioural intentions of each of the demographic, attitudes and beliefs put into the model.

In addition a **factor analysis** could be performed on the attitude and belief questions to reduce the set of statement to a manageable set of domains e.g. "trust in - and satisfaction with - government response ", "no sense of personal risk or susceptibility ".

Step Four - Cluster analysis

Based on the findings from steps 1 to 4 you should select the variables to include in the segmentation analysis. The most common statistical programme for a segmentation analysis is a cluster analysis. **Cluster analysis or clustering** is the task of grouping a set of respondents in such a way that respondents in the same group (called cluster) are more similar (in some sense or another) to each other than to those in other groups. The resulting "clusters" are the segments.

There are several approaches to this final stage. For example, you can select the attitude, belief and demographic variables which have a significant impact on behaviour / behavioural

intentions or select the demographics, attitudes, beliefs *and behaviour variables* and include all of these in the clustering programme.

There are a number of conditions that have to be set prior to running a cluster programme. e.g. should it be centroid based, distribution – based, or density based⁵. Do you want to specify the number of clusters (segments) generated in advance, in which case you should apply a K- means algorithm⁶.

NOTE:

If you do not have sufficient statistical training enlist the help of a statistician who can help with this stage of the analysis and advise what the best approach would be in preparing the data, executing the cluster programme and interpreting the outputs.

With cluster analysis it is best to test several approaches, examine the cluster (segments) that are generated and make a decision on which approach will yield the most useful segmentation.

Whatever programme or approach you employ always keep in mind that the final cluster groups have to be useable. For example, a good test is to ask the following two questions:

Are the segments, which are a selection of variables describing particular groups, easily interpreted and recognisable populations to you, the stakeholders, the campaigners or health workers who will interact with them?

Are there too many segments?

There should not be too many segments generated. Some segmentations generate 10 and sometimes 20 different segments. For a single issue intervention such as pandemic flu this is too many segments to deal with effectively in planning an intervention. A maximum of 5 segments per target group under study will usefully provide enough differentiation between segments whilst maintaining a reasonable segment size for targeting.

NOTE:

Sometimes the analysis process will not yield useable segments. Some of the segments may be so small that they do not justify specific targeting or the clusters that emerge from the analysis cannot be clearly described and do not make intuitive sense. Changing the parameters of the cluster analysis programme can help remedy these problems.

A hypothetical segmentation solution

To our knowledge no country has conducted a segmentation analysis of the Euro barometer surveys. In the absence of any example we will now set out a **hypothetical segmentation solution in relation to pandemic events**. let us begin by defining the universe for a segmentation. You could focus on one of the key target groups i.e. older people or you could look at the total adult population and see how that segments. For this hypothetical example we will look at the whole adult population from the Euro barometer population for the country in question.

⁵ Definitions of each of these properties can be found at http://en.wikipedia.org/wiki/Cluster_analysis

⁶ K- means clusters are explaining at http://en.wikipedia.org/wiki/Cluster_analysis

Steps 1 to 3 are performed and a set of variable/ domains are selected for input in the cluster programme.

Step 4 is performed and several cluster solutions are generated. The most intuitive and useable segment solution is selected.

The Hypothetical Outputs - Naming the segments

The cluster analysis output will list the segments (clusters) generated by the programme and will describe how each of the input variables (demographics, attitudes, belief, behaviours) load on that cluster. So, for example, **Segment 1** scores lower than average on a sense of personal risk, lower on trust in government, lower on intention but higher than average on knowledge. **Segment 2** however, scores higher than average on knowledge, a sense of personal risk, trust and intentions to change.

These are *hypothetical segments* but the analysis process described above will result in a number of segments each of which load more strongly on certain input factors such as knowledge and beliefs, risks and susceptibility, trust in institutions and doctors and any other factors you believe are important in predicting behaviour and behavioural intentions.

Looking at how each of the factors load for each segment will help define the overall description or segment name.

The hypothetical cluster analysis has allocated each respondent to one of four segments so analysis can be performed to look at the demographic profile of each segment- average age, gender split, social grade, access to media, what they read and anything else collected as part of the original Eurobarometer survey.

The segment descriptions will help with formulating the right intervention approaches required for each segment.

For example, looking at hypothetical **Segment 2 - "Informed Early Responders "**. This segment equates to 40% of the general population. They will respond to campaigns to change behaviour including vaccination. They need to be made aware that there is a pandemic coming, what to do and where to get vaccinated if required. They do not need any targeted interventions to address the barriers to engagement with the issue. They do not require a lot of persuading to get vaccinated or follow hygiene recommendations.

However, looking at hypothetical **Segment 1 - "The Older Deniers"**. This group are older (55+) and probably more vulnerable to infection but they do not see themselves at risk. They are aware of the government advice about how to protect them but they think the whole pandemic has been exaggerated and are less likely to trust the authorities and doctors, although they generally trust doctors more than government. These general attitudes result in them taking very few steps to prevent infection whether it is hygiene measures or vaccination. This group clearly needs some more targeted interventions that go beyond the general population information campaign messages. The exact nature of the interventions and messages that will be effective with this segment will require further exploration in a small number of focus groups. This will help you understand more about what drives these beliefs and attitudes and what is required to persuade and encourage this group to take action.

Finding the people to interview

Using a cluster analysis programme it is possible to create an *allocation algorithm* based on responses to key questions in the Euro barometer questionnaire which will allocate people to each of the 4 segments. The degree of accuracy in allocating people based will vary depending on how many questions you include. The higher the number of questions the greater the degree of accuracy. Accuracy levels of over 70% can be achieved with a few as 6 questions.

Alternatively you can use a reduced version of the Euro barometer questionnaire which includes the key questions on knowledge and beliefs, risk susceptibility, trust, behaviour and behavioural intentions and set a high threshold for the responses to ensure you select people that very clearly fit within the segments of interest.

Using such the algorithm or the standard questionnaire you will be able to recruit segments types to focus groups. Respondent recruited will be asked the questions and the algorithm will determine their segment type. The segments which require your attention e.g. *the older deniers* can be interviewed in depth or in focus groups to understand the drivers of the resistance to vaccination, lack of trust in government and explore the type of social marketing "exchanges" that should be included in government approaches and / or local interventions to motivate a change in behaviour.

SEGMENT 1
Older Deniers

(12% of the general population)

Older people 55+

Not currently ill, and more likely to be male (3: 1 male: female). No discernible social grade differences

Knowledge and beliefs

Aware of what you can do to protect your self but do not see it as a serious risk. They don't believe seasonal flu vaccination will give protection against pandemic flu and are more likely to think the pandemic vaccine is infective or unsafe

Risk and susceptibility

Do not feel at risk of catching pandemic flu.
Do not think there is a serious risk and tend to believe that the media pay too much attention to it.

Trust

They are less likely to trust information from the National Authorities and more likely to trust information from doctor – but are still less likely to trust doctors than other segments

Behaviour / behavioural intentions

They are least likely to get vaccinated and will do very little to protect themselves

SEGMENT 2
Informed Early Responders

(40% of the general populations)

All ages some ill, some not.

Marginally more likely to be women (4: 5 male: female).

No discernible social grade differences, more likely to have dependent children

Knowledge and beliefs

Aware of what you can do to protect yourself and tend to see it as a serious risk. They don't believe seasonal flu vaccination will give protection against pandemic flu and are also more likely to think that the pandemic vaccine is effective or unsafe

Risk and susceptibility

Do feel some risk of catching pandemic flu – especially if they are older or pregnant
They do think there is a serious risk and tend to believe that the media pay enough attention to it.

Trust

They tend to trust the information from the National Authorities and from doctors and HCW and so far are satisfied with the measures taken by the authorities

Behaviour / behavioural intentions

They are the most likely to say they have made behaviour changes to protect themselves are most likely to get vaccinated against pandemic flu if the medical advice recommends it for them

SEGMENT 3

***Informed- but don't
want/trust vaccination***

(30% of the general populations)

All ages some ill, some not.

No gender differences. No discernible social grade differences. Some with dependent children, some without

Knowledge and beliefs

Aware of what you can do to protect yourself and tend to see it as a serious risk. They don't believe seasonal flu vaccination will give protection against pandemic flu and are also more likely to think that the pandemic vaccine is infective or unsafe

Risk and susceptibility

Do feel some risk of catching pandemic flu – especially if they are older or pregnant
They do think there is a serious risk and tend to believe that the media pay too much attention to it.

Trust

They don't tend to trust the information from the National Authorities and from doctors and HCW

Behaviour / behavioural intentions

They are likely to say they have made behaviour changes to protect themselves (hygiene measures) but are less likely to get vaccinated against pandemic flu and (seasonable flu) if the medical advice recommends it for them

SEGMENT 4

***Worried, Uninformed and
not likely to act***

(18% of the general populations)

All ages but the majority are over 55. Some ill, but the majority are not currently ill.

Marginally more likely to be men. No discernible social grade differences

Knowledge and beliefs

They tend say pandemic flu poses a serious risk but not aware of what they can do to protect themselves. They know very little about vaccines (seasonal or pandemic vaccines) so cant make an informed a opinion about the safety or effectiveness.

Risk and susceptibility

They feel some risk of catching pandemic flu – especially if they are older or pregnant

They do think there is a risk to society but are in- informed because they don't keep up with current affairs or engage with the media coverage.

Trust

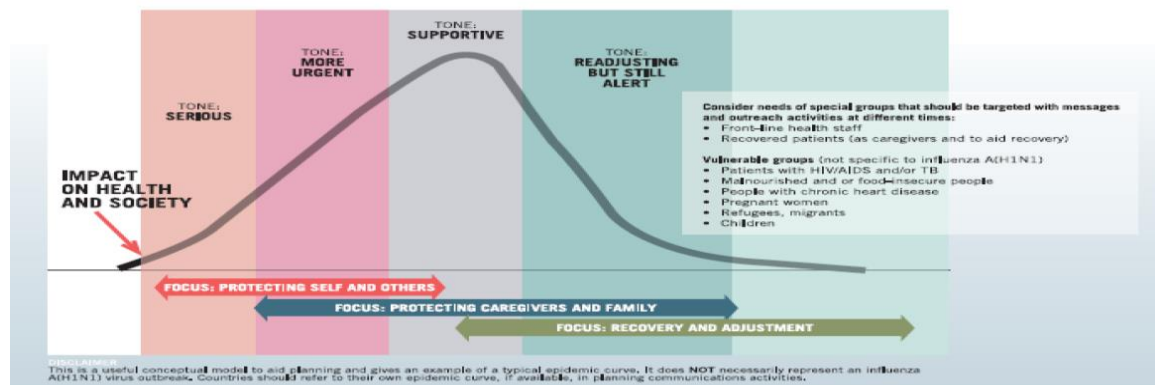
They tend not tend to trust the information from the National Authorities and from doctors and HCWs possibility because they don't come into contact with health services very often.

Behaviour / behavioural intentions

They are least likely to say they have made behaviour changes to protect themselves (hygiene measures) and are less likely to get vaccinated against pandemic flu and (seasonable flu) probably because they are unaware that it was on offer to them for free.

As the outbreak develop how does this affect the segmentation

How do populations respond to an evolving pandemic develop? A report by Strategic Social Marketing for the E-Com programme assessed communication approaches in the context of an evolving pandemic⁷. The diagram below taken from WHO and UNICEF guidance⁸ indicates the need for a shifting tone of communication during different phases of an Outbreak. Depending on the severity of the outbreak there would also need to be a change in the behavioural goals of a programme.



A review completed as part of the wider E-Com programme has reinforced the need for a flexible approach to communication over the phases of an outbreak. The review⁹ found that public perceptions and behaviours evolved during the course of the 2009 pandemic. In most countries, perceived severity and anxiety declined, but perceived vulnerability increased. High levels of perceived self-efficacy and intention to take preventive measures were observed. Improved hygienic practice and social distancing was practiced most commonly, but vaccination acceptance remained low in most countries. Marked regional differences were also noted.

A review by Bish and Michie¹⁰ has also highlighted that demographic and attitudinal factors can have a big influence on the adoption of protective behaviour during a pandemic. Being older, female and more educated, or non-white, is associated with a higher chance of adopting the behaviours. "There is evidence that greater levels of perceived susceptibility to and perceived severity of the diseases and greater belief in the effectiveness of recommended behaviours to protect against the disease are important predictors of behaviour. There is also evidence that greater levels of state anxiety (i.e. anxiety felt at that moment), and greater trust in authorities are associated with an increased chance of behaviour being carried out".

These findings point to the need to adapt behavioural influencing and communication programmes for specific groups of individuals, such as men, younger people, and the less

⁷ E-Com@Eu Programme Work Programme 3: Report on Behavioural Analysis, *From Communication to Behavioural Influence, an Overview of Approaches and Issues*: Jeff French, Strategic Social Marketing 2012

⁸ Behavioral interventions for reducing the transmission and impact of influenza A (H1N1) Virus Framework for Communication Strategies WHO /UNICEF 2009

⁹ Bults M, Beaujean D, Richardus J H, Voeten H. Perceptions and Behavioural Responses of the General Public during the 2009 Influenza A (H1N1) Pandemic: a systematic review (In Press) 2012.

¹⁰ Bish and Michie (2010) Demographic and Attitudinal Determinants of Protective Behaviours during a Pandemic: a review. *British Journal of Health Psychology*. DOI:10.1348/135910710X485826

well educated. The need to focus on perceptions of risk in communications as susceptibility is a key factor in decisions to act. In this respect a certain level of perceived susceptibility is required to get people to take action and therefore interventions aimed at increasing this sense of risk appear to be well founded. However, ethically, interventions designed to emphasise perceptions of risk should also be combined as Bish and Michie say with “advice as to how the perceived threat can be lessened; for example, by emphasising that risk can be reduced by carrying out the recommended protective actions and providing information about the efficacy of such measures in reducing risk”

Emotional Epidemiology

Based on analysis of the pandemic in Hungary, researchers described the "Emotional Epidemiology" of pandemic flu vaccination which details the unfolding public emotional reaction to events and news stories ¹¹

News	Emotions	Reactions
A new influenza virus with pandemic potential	Immediate fear of the unknown	When will there be a vaccine?
The novel disease establishes itself within society	Emotional tolerance is created. H1N1 infection waxed and waned over the summer	Patients grew less anxious
News about school outbreaks in autumn	Expectation from my patients that this swine flu problem should have been solved already	Patients instead grew suspicious
The new vaccine is available	“It’s not tested” “Everyone knows there are problems with the vaccine.” “I’m not putting that in my body.”	Reluctance, mistrust, opposition

¹¹ Ofri D. The Emotional Epidemiology of H1N1 Influenza Vaccination. The source article (10.1056/NEJMp0911047) was published on November 25, 2009, at NEJM.org.

Looking at these different but complimentary perspectives is necessary to develop sets of communications guidance with specific objectives related to each identifiable target group at each stage of an outbreak. These are valuable perspectives on how the developing pandemic affects the psychology and behaviour of populations.

The segments you define at the beginning of the pandemic will be subject to interventions which may result in them becoming more or less likely to change their behaviour to protect themselves and others. The value of the primary segmentation is that you will have a greater insight into why people are not engaged at the beginning of the outbreak and a much better understanding (from the quantitative and qualitative research) of how each of the segments change as the pandemic moves through the phases. This understanding will not only help with managing a current event but also provide useful understanding about probable reactions in subsequent events.

Conclusion

Segmentations which rely solely on demographic factors such as age, gender or region can add value to intervention targeting but do not harness the full potential that more attitudinal informed segmentations can offer in terms of understanding resistant groups and prioritizing audience effort.

Effective Social Marketing requires reliable insight into the behaviour of target audiences to help shape both the interventions and evaluation. Segmentations which go beyond basic demographic variables and encompass attitudinal drivers as well as physical, knowledge and emotional barriers to change contribute to the general body of insight and should help to generate a greater return on investment in terms of influencing the behaviour of targeted populations and subgroups.

This guide has provided a brief overview of the main segmentation approaches and stages and has also offered hypothetical example of a possible pandemic segmentation to illustrate the process of generating useable segments.

If you require further advice or guidance please contact us at:

Strategic Social Marketing Ltd
Attabara, Conford , Hants,
GU307QW, UK
Tel 01428 751 475

www.strategic-social-marketing.org
Registered Company No : 6963216