TECHNICAL REPORT

Health communication and its role in the prevention and control of communicable diseases in Europe

Current evidence, practice and future developments

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Abbreviations and acronyms

CB	Competent Bodies
ECDC	European Centre for Disease Prevention and Control
ECDC–HCF	European Centre for Disease Prevention and Control – Health Communication Forum
EEA	European Economic Area
EU	European Union
HIV/AIDS	Human immunodeficiency virus/acquired immune deficiency syndrome
HPRC	Health Promotion Research Centre
ISMA	International Social Marketing Association
NGO	Non-governmental organisation
NUIG	National University of Ireland Galway
STI	Sexually transmitted infections
UK	United Kingdom
WHO	World Health Organization

Executive summary

Introduction

Health communication is integral to the effective public health response to the continuing threat posed by communicable diseases in European Union (EU) and European Economic Area (EEA) Member States. Public health practitioners, programme managers and policymakers need to be aware of what is known about the strengths, weaknesses and costs of health communication interventions aimed at the prevention and control of communicable diseases so that impacts can be enhanced and opportunities maximised for strengthening evidence-informed action.

The overall aim of the Translating Health Communication research project was to support the optimal use and development of health communication activities for the prevention and control of communicable diseases in EU and EEA countries. This project consisted initially of two main strands of work: primary information gathering and synthesis of evidence. The multiple outputs from these two strands were further analysed through a SWOC (strengths, weaknesses, opportunities, challenges) analysis. Subsequently the results were developed via an online expert consultation process. Finally, all key project findings were considered against a Public Health Capacity Development Framework [1]. This final project component identifies the future strategic actions required for strengthening capacity in Europe to develop evidence-informed health communication for communicable diseases. Thus, a process of knowledge generation and translation was instigated such as that described in the Knowledge-to-Action Framework [2]. This three-year research project funded by the European Centre for Disease Prevention and Control (ECDC) was undertaken by a Research Consortium of Universities[1].

Primary information gathering

One of the initial research strands comprised of primary information gathering which included an e-survey and telephone interviews with 109 key stakeholders and achieved representation from each of the 30 EU and EEA countries [3]. The data from these research activities informed a subsequent expert consultation aimed at identifying the perceived priorities for the efficacious use of health communication by public health bodies for communicable diseases [4].

Evidence reviews

The second research strand comprised a series of evidence reviews: three rapid reviews of reviews of evidence, four literature reviews, and two systematic literature reviews. The topic areas of these reviews were:

- A rapid evidence review of interventions for improving health literacy [5].
- A rapid evidence review of health advocacy for communicable diseases [6].
- Evidence review: social marketing for the prevention and control of communicable disease [7].
- A literature review on health information-seeking behaviour on the web: a health consumer and health professional perspective [8].
- A literature review of trust and reputation management in communicable disease public health [9].
- Health communication campaign evaluation with regard to the prevention and control of communicable diseases in Europe [10].
- A literature review on effective risk communication for the prevention and control of communicable diseases in Europe [11].
- Systematic literature review of the evidence for effective national immunisation schedule promotional communications [12].
- Systematic literature review to examine the evidence for the effectiveness of interventions that use theories and models of behaviour change: towards the prevention and control of communicable diseases [13].

[1] Health Promotion Research Centre, National University of Ireland Galway, Ireland.

Institute for Social Marketing and Centre for Tobacco Control Research, University of Stirling, Scotland.

University of Navarra Clinic, Pamplona, Spain.

Research consolidation process

A consolidation process of all project outputs was devised to bring together, distil and develop further the multiple findings from the two strands of research undertaken. This process comprised an adapted and developed SWOT (strengths, weaknesses, opportunities and threats) analysis, with challenges replacing threats – SWOC [14].

Strengths and weaknesses

The strengths and weaknesses identified in the evidence reviews were assessed per review [5-13] against specific areas which were developed through an iterative process with participation from Research Consortium members and members of the projects Scientific Advisory Panel. This process resulted in the identification of areas, formulation of questions, against which each evidence review was assessed. The areas included: level of conceptualisation, any models or theories identified, tools to facilitate practical application, level and quality of supporting evidence, health and disease outcomes, and application into practice. The results of this analysis process are presented in the form of matrix tables.

The analysis process enabled the identification of significant strengths as well as gaps in the European evidence base currently available for health communication in the prevention and control of communicable diseases. For example, it is apparent that there is a limited evidence base focusing on communicable diseases in a European context, as most of the evidence originated from North America, and draws substantially on evidence from non-communicable diseases and other health issues. It is also evident that there is a lack of knowledge on how to use health communication to effectively engage and improve health outcomes for hard-to-reach groups. Overall, while there is a limited European evidence base for health communication and communicable diseases, there is also evidence indicating some, albeit limited, capacity across EU and EEA countries to support such activities.

Opportunities and challenges

The process undertaken to analyse opportunities and challenges from the information gathering research strand of the project replicated that of the analysis of strengths and weaknesses of the evidence reviews. The areas identified, against which the opportunities and challenges were assessed, were developed into questions which reflected the focus of the original information gathering process [3]. The areas identified included: structures for health communication, planning and finance, health communication for communicable versus non communicable diseases, types of health communication used, understanding of 'evidence', participation in development of health communication, channels used, examples, capacity for use, and evaluation activities. The results of this analysis process are presented in the form of matrix tables.

The analysis process resulted in the identification of both opportunities and challenges for practice. For example, it was evident that there is great variability between countries in the range and level of health communication activities undertaken. There are also various levels of capacity, both within and between countries, for the effective application of health communication for the prevention and control of communicable diseases. Gaps identified included: a lack of education and training; under-use of evaluation; and limited resources to develop, effectively use, and evaluate health communication in the prevention and control of communicable diseases.

Informing future directions through an online expert consultation

The findings of the SWOC analysis formed the basis of a further level of stakeholder consultation [15]. The aim of the consultation was to identify, from stakeholders' perspectives, what would be useful and practical to enhance and support future capacity and strategic development of health communication in the prevention and control of communicable diseases. The consultation was undertaken via an online asynchronous, private email consultation/mailing list: the *ECDC-Health Communication Forum (ECDC-HCF)*. The questions posed covered the following domains: challenges, opportunities, feasibility, desirability and viability for the future development of health communication activities in EU/EEA countries over the next five years.

Overall, results validated previous research findings from the project [3], which indicated varying levels of capacity for health communication in the prevention and control of communicable diseases within and between countries. Insights concerning the potential for capacity development were identified which included: enhanced sharing, coordination, collaboration, communication with key target audiences and stakeholders, development of stronger partnerships, and future use of new media. In addition, the role of evidence as a foundation for effective health communication developments and as a basis for building public trust was recognised, highlighting the need for the evidence base in Europe to be strengthened.

Capacity development

Following the distillation process through the SWOC analysis and matrix development for all project outputs, including the online expert consultation, a capacity development framework was applied. This final phase of this research project used the dimensions of The *Review of Public Health Capacity in the EU* [1], a conceptual framework for mapping capacity development in public health against which the implications of the project findings were explicated. The dimensions are: organisational structures, partnerships, financial resources, leadership and governance, knowledge development, and workforce.

Organisational structures

Health communication activities will bring the most success if they are incorporated into health policies and strategies from the time at which they are being developed; this will require greater structure in planning health communication activities from policy to practice than currently exists. The role of trust and reputation management for communicable diseases health communication is increasingly being recognised as a strategic function requiring long-term planning and evaluation [9]. Health communication for non-communicable diseases may be a more developed field than health communication for communicable diseases. Priority should be given to the exploration of the transferability of knowledge in relation to health communication for non-communicable diseases to communicable diseases. Health literacy must be embedded in all population-level health initiatives at both a national and European level. The capacity for health communication for communicable diseases would be significantly improved by enhanced collaborative working and greater coordination at a European level.

Partnerships

Capacity-building partnerships are those that increase the capacity of the partnership members to work together [16]. Advantages of partnership working include 'sharing' expertise and experiences of the application of health communication in the prevention and control of communicable diseases. This in turn has the potential to: limit costs, facilitate transnational approaches, and ensure a commonality of health communication messages and strategies across Europe [3, 4]. Sustainable communication and partnerships with organisations involved in health communication for non-communicable diseases could facilitate establishing networks to explore the transferability of expertise, capacity, information, best practice, and lessons learned in health communication for non-communicable diseases to communicable diseases. The importance of partnerships with community groups reflects the new paradigm of citizen-centred health communication with the identification of the inclusion of citizen stakeholders as active partners in health communication endeavours aimed at the prevention and control of communicable diseases. A strong, linked professional network of communicators and experts within countries and across Europe would provide a useful resource to drive the strategic and consistent development of health communication for communicable diseases. Nevertheless, there are many challenges to the establishment and maintenance of productive partnerships for health communication for the prevention and control of communicable diseases in Europe, including the diversity of culture, health service systems, and language. However, the review of social marketing for the prevention and control of communicable diseases cited data that identified a promising trend in partnership working [7].

Financial resources

The stakeholder consultation identified that none of the countries that they represented has a specific budget for health communication [3]. Funding for health communication is allocated from national health budgets and/or government programmes and the extent of funding from the private and commercial sectors varied between countries. A greater use of economic evaluation will equip policymakers, health communication planners and analysts with the evidence to determine how best to distribute their budgets among the various health communication activities [3].

Leadership and governance

The consultations identified that there was a lack of clarity about where responsibility for health communication rested both nationally and at a European level. During the consultations, the stakeholders reported their opinions that the development of formal structures within public health authorities or Ministries of Health would enhance and support the future development of health communication in the prevention and control of communicable diseases over the next five years. Except in relation to health advocacy [6], there was little evidence across the reviews of health communication interventions targeting disadvantaged or hard-to-reach groups [5, 7, 12] and thereby working to reduce health inequalities. It is clearly imperative for leaders, governments and organisations to be mindful of the impact of future health communication activities on minority and disadvantaged groups and implement strategies designed to reduce health inequalities. Stakeholders suggested a need for an international or

European agency, such as ECDC, to provide leadership for health communication including by assisting countries to develop their own national health communication strategies and plans [3].

Knowledge development

There is generally a lack of evidence relating to health communication for communicable diseases within the European context. Nine evidence reviews were undertaken for this research project and these found that while there was a degree of conceptual agreement evolving about the concepts of health literacy [5], health advocacy [6], the promotion of immunisation uptake [12], and behaviour change [13], there was a more limited consensus and/or understanding about the concepts relating to social marketing [7], health information seeking [8], risk communication [11], campaign evaluations [10], and trust and reputation management [9].

Comprehensive knowledge exists in the form of toolkits and guides to developing, implementing and evaluating health communication activities [for example, 17-19]. Resources such as these could usefully inform the development of a strategy for health communication activities for communicable diseases and provide a template for the development of initiatives. Evaluation is particularly underdeveloped in the broader context of health communication and is scant in relation to health communication for the prevention and control of communicable diseases. Integral to the development of more formal evaluation is progress in identifying the indicators of success for health communication activities. The current status of health communication campaign evaluation demonstrates the need for capacity building within and across EU/EEA countries [10].

Workforce

Health communication competencies may be defined as the combination of the essential knowledge, abilities, skills and values necessary for the practice of health communication (adapted from [20]). It is clear that the complexities and the multidisciplinary nature of health communication involve a vast range of skills drawing from a number of disciplines including health, education, public health, health promotion, social marketing and information technology. Overall, stakeholders considered that education and training focused on health communication in the prevention and control of communicable diseases is currently underdeveloped across Member States [3]. Stakeholders identified that structured health communication training was required and suggested that European-level organisations should coordinate and facilitate such training.

Conclusions

Health communication for the prevention and control of communicable diseases is underdeveloped in EU and EEA countries. The research activity for health communication in communicable diseases in the European context is in a nascent stage of development. The lack of systematic evaluation of health communication for communicable diseases has resulted in a limited evidence base which could give rise to inefficient use of resources.

Nevertheless, a body of evidence is emerging in relation to health communication, and some of it pertains to health communication for communicable diseases but much relates to non-communicable diseases. This evidence represents a resource that can be mined to establish its relevance and transferability to health communication for communicable diseases in the European context.

The potential for capacity development for health communication in communicable diseases in Europe is manifest. European and international agencies and organisations such as ECDC and the WHO were identified in the stakeholder consultations as having a critical role to play in supporting the future development of health communication in the field of communicable diseases prevention and control. Such organisations could provide the leadership and coordination required to advance the field of health communication for communicable diseases in a coordinated and strategic way.

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Introduction

Health communication, which is defined as 'the study and use of communication strategies to inform and influence individual and community decisions that enhance health' [1] is a core strategy for public health improvement. Health communication can take many forms, both written and verbal, and can be directed toward individuals, communities or entire nations. In addition, health communication is an integral component of health promotion, health protection, disease prevention and treatment and is recognised as a core competency in public health and health promotion practice, playing a pivotal role in achieving public health objectives.

Health communication initiatives must use the most effective and efficient strategies for the promotion, protection and maintenance of health through the use of the best available evidence at practice and policy level. Public health practitioners, programme managers and policymakers need to be aware of what is known about the strengths, weaknesses and costs of health communication interventions aimed at the prevention and control of communicable diseases so that impacts can be enhanced and opportunities maximised for strengthening evidence-informed action.

Health communication activities are increasingly being used to support the prevention and control of communicable diseases; however, the extent and nature of the use of these activities for communicable diseases across the EU and EEA countries were not previously known. Without such knowledge and without clarity as to the strengths and weaknesses inherent in current practice, health communication's contribution to the promotion of the public's health is restricted. An examination of the strengths and weaknesses of health communication activities in the context of national, European and international evidence provides a useful basis from which to generate knowledge to inform capacity development in this key area of public health.

In 2009, the European Centre for Disease Prevention and Control (ECDC) commissioned a consortium of universities to undertake the Translating Health Communication Research Project. The aim of the project was to enhance the optimal use and development of health communication for the prevention and control of communicable diseases in the thirty countries that comprise the European Union (EU) and European Economic Area (EEA).

Synopses of the four specific objectives for the project at its inception are as follows:

- To collect information on the status of implementation of health communication activities, focusing on communicable diseases in the EU/EEA countries.
- To make available information and examples of national public health information campaigns and public literacy programmes on communicable diseases from EU/EEA countries.
- To bring together stakeholders interested in health communication research focusing on communicable diseases via expert meetings, seminars and online forums.
- To facilitate the dissemination of the Translating Health Communication Project's activities and evidence to promote good practices and innovations focusing on communicable diseases (adapted from [2]).

A range of research activities were undertaken and completed during this three-year project, comprising both a synthesis of evidence [3-11] and primary information gathering [12]. The multiple research activities were designed to develop successively, with earlier research activities informing and supporting subsequent activities. This resulted in an explication of the state of current practice, consolidation of existing evidence, and an identification of future directions for the development of health communication for the prevention and control of communicable diseases. Thus, a process of knowledge generation and translation was instigated.

The aim of knowledge translation processes, frameworks and models is to maximise the benefits of research for health improvement by reducing the 'know–do' gap between knowledge creation and its application to policy and practice [13, 14]. These two components – knowledge creation and subsequent action – form the basis of the Knowledge-to-Action Framework [14]. In this construction, the two components each contain several phases. The knowledge creation component consists of three phases: knowledge inquiry, knowledge synthesis, and knowledge tools/products. Knowledge is increasingly distilled as it is funnelled through these phases. The action component comprises: problem identification; identifying appropriate knowledge; applying knowledge to the local context; assessing barriers to knowledge use; developing, tailoring and implementing interventions; monitoring the knowledge; evaluating outcomes; and sustaining the knowledge use. These two components and the phases within them interact dynamically throughout the knowledge translation process. Research activities in this project equate to phases in this Knowledge-to-Action process. Initial knowledge inquiry through primary information gathering activities was carried out to address Objective 1 of the project. Simultaneously a series of evidence reviews were undertaken synthesising current knowledge, addressing Objectives 2 and 3.

In this introduction, information gathering and the synthesis of evidence are described in more detail. This is followed by an overview of a further knowledge consolidation process through a Strengths, Weaknesses Opportunities and Challenges (SWOC) [15] analysis of the current knowledge base. An online consultation with expert stakeholders to identify future actions to enhance the effective use of health communication for the

prevention and control of communicable diseases is introduced, highlighting Objective 3. This research is intended to inform and support policymakers, practitioners and organisations involved in practice and the future development of this area for the European public health agenda.

Primary information gathering

Primary information gathering took place throughout the three years of the research project and was designed as an iterative, multi-method research process. The initial consultation comprised an e-survey and telephone interviews with key stakeholders in each of the 30 EU and EEA countries which sought to identify and map current use and application of health communication activities for the prevention and control of communicable diseases across these countries [12]. A total of 65 participants completed the e-survey and 44 completed the telephone interviews. The data from these consultations informed a subsequent expert consultation which was undertaken to identify the perceived priorities for the efficacious use of health communication by public health bodies for communicable diseases [16]. A total of 25 participants took part in this expert consultation. The results of these research activities are reported in an aggregated report [12]. In addition, examples of health communication activities identified by key stakeholders during this phase were compiled, researched and distilled electronically to form a database for health professionals, researchers and academics working in the area [17].

Synthesis of evidence

This component of the research project comprised of a series of evidence reviews: three rapid reviews of reviews of evidence, four literature reviews, and two systematic literature reviews.

The topic areas of these reviews were:

- A rapid evidence review of interventions for improving health literacy [3].
- A rapid evidence review of health advocacy for communicable diseases [4].
- Evidence review: social marketing for the prevention and control of communicable disease [5].
- A literature review on health information-seeking behaviour on the web: a health consumer and health professional perspective [6].
- A literature review of trust and reputation management in communicable disease public health [7].
- Health communication campaign evaluation with regard to the prevention and control of communicable diseases in Europe [8].
- A literature review on effective risk communication for the prevention and control of communicable diseases in Europe [9].
- Systematic literature review of the evidence for effective national immunisation schedule promotional communications [10].
- Systematic literature review to examine the evidence for the effectiveness of interventions that use theories and models of behaviour change: towards the prevention and control of communicable diseases [11].

The key findings from the consultations [12, 18] together with those from the evidence reviews [3-11] were consolidated through an analysis of strengths, weaknesses, opportunities and challenges (SWOC) to provide insights for the future developments of effective health communication [15]. The results of this analysis also formed the basis of a further level of stakeholder consultation.

An online email discussion with 12 public health and health communication experts across various EU and EEA countries was undertaken in 2012 [18]. This consultation comprised a private online electronic mailing list and an interactive supportive website which was labelled the *ECDC-Health Communication Forum (ECDC-HCF)*. The purpose of this consultation was to explore expert opinion about what is required to facilitate, enhance and support the future development of health communication in the prevention and control of communicable diseases across the EU and EEA countries over the next five years [18].

SWOC analysis

The process used to consolidate the findings and project outputs was provided by the adaption of an analytical tool to assess strengths, weaknesses, opportunities and threats, known as SWOT analysis. This application is more accurately referred to as a SWOC analysis, with the replacement of the identification of threats with challenges, which has been found to be more constructive to the process [19]. This general approach is more usually used in strategic planning at organisational level. However, a review of SWOT analysis reported in the academic literature over the last 10 years indicates the broad range of its use [19], including its adaptation and application in research. As an analytical tool, the SWOC enables the identification and clarification of key issues emerging from the project's outputs, providing a coherent conceptual framework from which to consolidate findings.
SWOC analysis is usually divided into the strengths and weaknesses in relation to the internal environment and opportunities and challenges posed by the external environment. By applying a SWOC analysis in this project [15],

the European evidence base for health communication was assessed by identifying the strengths and weaknesses that emerged from each of the nine evidence reviews [3-11]. Opportunities and challenges were identified in relation to the European practice context, as captured in the information gathering, including the expert consultations [12, 6, 18].

An organising framework was constructed through an iterative process resulting in the development of matrix templates[2] against which project outputs were assessed. Initially it was envisaged that one matrix would capture all key issues across all project outputs but through undertaking the process it became apparent that, due to the wide range of outputs, this approach was not possible.

Therefore, two separate matrix templates were developed to further analyse and present the findings from this SWOC analysis. The *strengths and weaknesses matrix* was developed in order to assess the strengths and weaknesses for each of the nine evidence reviews [3-11]. The main headings used in this matrix are clearly defined (see Appendix 2) and reflect the relevant key areas focused on across all of the reviews. Each of the reviews was assessed individually against this developed matrix template and are presented in separate tables in Chapter 1.

The challenges and opportunities matrix was developed in order to assess the opportunities and challenges identified from the review of the primary information gathering phase of the project [12, 16] and aims to reflect what is currently happening in practice. The development of this matrix template was informed by some of the headings used in the e-survey questionnaire and telephone interview protocols. The results of this process are presented in Chapter 2 with the results of the online expert consultation.

Informing future directions

In the final phase of this research project, the totality of all project findings were considered against the dimensions of a Public Health Capacity Development Framework [20]. Further funnelling the distilled knowledge generated towards the action component of the Knowledge-to-Action Framework for use in the policy and practice of health communication for the prevention and control of communicable diseases [13, 14]. The dimensions of the Public Health Capacity Development Framework applied include: organisational structures, partnerships, financial resources, leadership and governance, knowledge development, and workforce [20]. This provided the structure to discuss the most effective strategies for strengthening capacity and signposting the strategic way forward for health communication and communicable diseases at a national and pan-European level. This is presented in Chapter 3.

Report format

This report comprises three chapters, each of which includes the references and appendices specific to its contents.

Chapter 1 reports the findings of the synthesis of evidence research activities [3-11] distilled through a SWOC analysis [15] and presented in a series of matrix tables as strengths and weaknesses.

Chapter 2 presents the data collected through the series of primary information gathering activities [12, 16] and online email consultation [18].These are presented under the themes of key challenges and opportunities as identified by national and European experts in the field of public health and health communication. In addition, this chapter includes what experts in an online email consultation considered to be desirable, feasible and viable with regard to the development and use of health communication for the prevention and control of communicable diseases over the next five years, both within and across EU and EEA countries [18].

Chapter 3 draws on the data presented in Chapters 1 and 2 to consider the requirements for the strategic development of health communication for communicable diseases in EU and EEA countries in relation to a Public Health Capacity Development Framework.

Appendices include a glossary of terms which was developed specifically for this Translating Health Communication Project. The purpose of this glossary is to clarify key concepts and define terms used in order to promote conceptual coherence across all project outputs. In addition, the data collection activity with participants from across 30 EU and EEA countries was underpinned by these defined terms. Please see Appendix 1. Appendix 2 contains the matrix template used in Chapter 1, and the references cited in these matrices tables (1.1–1.9) are outlined in Appendix 3.

[2] The matrix development process was informed through internal consultation among the Research Consortium and the project's Scientific Advisory Panel. In particular we would like to thank Dr Larry Hershfield for sharing his knowledge and expertise and for his contribution to this matrix development process.

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Chapter 1
Strengths and weaknesses for health communication in the prevention and control of communicable diseases across the EU and EEA countries

Introduction

This chapter reports on the evidence review phases of the project [1-9]. A total of nine reviews [1-9] were undertaken to collate and synthesise current evidence in the area of health communication with particular relevance to the prevention and control of communicable diseases in the European context. Three types of review were undertaken: rapid review of reviews of evidence [1-3], literature reviews [4-7], and systematic literature reviews [8-9].

Rapid evidence reviews

Three rapid evidence reviews were undertaken.

- A rapid evidence review of interventions for improving health literacy [1].
- A rapid evidence review of health advocacy for communicable diseases [2].
- Evidence review: social marketing for the prevention and control of communicable disease [3].

Literature reviews

Four literature reviews were undertaken:

- A literature review on health information-seeking behaviour on the web: a health consumer and health professional perspective [4].
- A literature review of trust and reputation management in communicable disease public health [5].
- Health communication campaign evaluation with regard to the prevention and control of communicable diseases in Europe [6].
- A literature review on effective risk communication for the prevention and control of communicable diseases in Europe [7].

Systematic literature reviews

Two systematic literature reviews were undertaken:

- Systematic literature review of the evidence for effective national immunisation schedule promotional communications [8].
- Systematic literature review to examine the evidence for the effectiveness of interventions that use theories and models of behaviour change: towards the prevention and control of communicable diseases [9].

Methodology

Specific terms of reference were developed for all reviews. All reviews involved a search of the relevant databases using relevant, specified search terms, for English language literature and included both published and grey literature. For details of the specific search strategy pertaining to each review see the review reports [1-9].

The results of the reviews were subject to SWOC analysis (as described previously in the Introduction). The results are presented in the form of a matrix of the strengths and weakness of the evidence base for each of the topic areas. The series of reviews represents three distinct approaches ranging from more descriptive reviews of literature to more analytical systematic reviews. This is reflected in the matrices with some analysis presented in a more descriptive format while others are more analytical. Each of the reviews is presented in a separate matrix.

The main headings used in the matrices are clearly defined and reflect the relevant key areas across all of the reviews, thus providing a consistent framework against which to assess strengths and weaknesses. Please see Appendix 2 to view the strengths and weaknesses matrix template and the accompanying explanation of key domain categories. Also note that references used in the matrices tables (1.1.–1.9) in Chapter 1 are provided in Appendix 3.

Matrix Table 1.1: Strengths and weaknesses identified in the rapid evidence review of interventions for improving health literacy

A rapid evidence review: interventions for improving health literacy [1]	
Concept	**Is there a commonly agreed conceptualisation for health literacy?**
Strengths	• Health literacy has been defined as the degree to which individuals have the capacity to obtain, process and understand the basic health information and services needed to make appropriate health decisions [10]. • It is an evolving, multi-level concept. • Nutbeam (2000) suggests a three-level conceptualisation comprising functional literacy; communicative/iterative literacy and critical literacy [11].
Weaknesses	Only the functional level is used in practice or in research.
Models & theories	**Were there any models, theories or frameworks identified in the review?**
Strengths	A number of frameworks exist, including Coulter & Ellins' [12] classification of a typography which proposes four types of health literacy interventions: • written health information interventions; • alternative format interventions; • low literacy initiatives; and • targeted mass media campaigns.
Weaknesses	• Most interventions have a focus which is limited to the accessibility of written information and alternative formats for the provision of information. • There are no models or theories specific to communicable diseases.
Tools	**Did the review identify any tools that facilitate step by step practical application?**
Strengths	A number of validated measures exist. The most frequently used in studies reviewed were the: • Rapid Assessment of Literacy in Medicine (REALM) [13] and • Test of Functional Health Literacy in Adults (TOFHLA) [14]. These measures are not specific to communicable diseases.
Weaknesses	• The existing measures all operate at the functional level of literacy and are criticised for measuring literacy rather than health literacy. • No measure of communicative/iterative or critical literacy was identified. • There is no measure specific to communicable diseases.
Evidence	**What evidence was identified in the review and what was the quality of the evidence?**
Strengths	The interventions in the reviews included: randomised control trials, complex interventions, controlled and uncontrolled experimental designs. ***Quality*** Quality criteria were reported by authors in three of the five reviews. • In one review, five studies (of 15) met six or more of nine set criteria; five studies met three or fewer [15]. • Four out of five did so in another review [16]. • Half the studies achieved the 'good' benchmark in one review [17]. The criteria which were used included: • adequacy of study population • comparability of participants • validity of the literacy measurement • reliability of the literacy measurement • maintenance of comparable groups • appropriateness of the outcome measure • appropriateness of statistical analysis • control of confounders • eligibility criteria specified • outcome assessor blinded for all primary outcomes • point estimates and measure of variability given for all primary outcomes • intention-to-treat analysis • a priori sample size calculation • a participant flow diagram.
Weaknesses	The evidence in the reviews had a limited focus. Mixed evidence makes it difficult to draw conclusions. ***Quality*** • Two of the five reviews did not apply quality criteria to the included interventions [18, 19]. • There are no agreed or consistently applied quality criteria.

Health & communicable disease outcomes	**What evaluation outcomes were used?**
Strengths	***Communication effects*** Increased health knowledge, increased recall, increased comprehensions, satisfaction or helpfulness of the intervention. ***Behavioural and other changes*** • Changes in self-efficacy and/or confidence relating to health and/or health behaviour. • Changes in health professionals' behaviour and/or skills. • Health services utilisation.
Weaknesses	No identified indicators of success at the interactive or critical levels of health literacy. ***Communication effects*** Little focus on communicable diseases. ***Behavioural and other changes*** Little focus on communicable diseases.
Application	**What has been applied into practice in the area of health literacy for the prevention and control of communicable diseases?**
Strengths	• This evidence review identified five reviews with a total of 84 studies [15, 16, 17, 18, 19]. • The applications span a wide range of interventions including the use of audiotapes, health education/management interventions and easy-to-read printed materials. ***European*** An evolving body of North American evidence at functional literacy level with possible application to the European context. ***Focus*** • A range of health issues, most commonly cancer, asthma or diabetes. • A number of different target groups were involved in the intervention: adults, children, and health professionals.
Weaknesses	***European*** • There is a paucity of European evidence. In addition, many of the studies were mainly located in North America, thus reviews may only be generalised in a limited way to other contexts and health systems. • One review explicitly excluded developing countries [17]. ***Focus*** Little focus on communicable diseases with the exception of a small number of studies on medication adherence and HIV/AIDS. ***Targeting including hard-to-reach populations*** No focus on disadvantaged populations – some authors noted the exclusion of some disadvantaged populations [18]. No focus on reducing disparities [17].
The reference numbering system used in this table does not stem from the completed review, published in the technical report series as: D'Eath M, Barry MM, Sixsmith J. A rapid evidence review of interventions for improving health literacy. Stockholm: ECDC; 2012. The references cited in this matrix table and upcoming tables are listed in Appendix 3. Click here to access the completed review.	

Matrix table 1.2: Strengths and weaknesses identified in the rapid evidence review of health advocacy for communicable diseases

A rapid evidence review: health advocacy for communicable diseases [2]	
Concept	**Is there a commonly agreed conceptualisation for health advocacy?**
Strengths	• In the context of public health, advocacy strives to optimise health by addressing the environmental, social, political and economic factors that impact on health [20]. • Seeks to influence the policies and practices that create the conditions for change [20]. • The underlying principles include representation and empowerment of vulnerable people. There may be a strong focus on the social determinants of health. Advocacy is also used as a tool towards equity [21-24].
Weaknesses	• The word advocacy and its underlying concept do not translate directly into other languages [25, 22]. • It is a contextually specific definition.
Models & theories	**Were there any models, theories or frameworks identified in the review?**
Strengths	• A number exist – as an example, this review includes one relating to physical activity developed by Shilton [26]. • The existing models and theories, particularly those used for advocacy for non-communicable disease, may be applied to the context of communicable diseases.
Weaknesses	To date, little focus on developing models and theories specifically for communicable diseases.

Tools	**Did the review identify any tools that facilitate step by step practical application?**
Strengths	A number of advocacy toolkits and guides have been developed and applied by organisations including: • ACTION: advocacy to control TB internationally [27]. • International HIV/AIDS Alliance and the International Council of AIDS Service Organisations [28]. • The World Health Organisation: STOP the global epidemic of chronic disease. A practical guide to successful advocacy [29]. • International Diabetes Federation [30]. There is considerable overlap between the guides and toolkits. Commonly included in the toolkits are guides to: • public speaking • designing an advocacy campaign • generating media interest and • lobbying.
Weaknesses	No evidence of formal or systematic evaluation of health advocacy interventions was identified in this review.
Evidence	**What evidence was identified in the review and what was the quality of the evidence?**
Strengths	This evidence review identified one review of health advocacy initiatives: Freudenberg N, Bradley SP, Serrano M. Public health campaigns to change industry practices that damage health: an analysis of 12 case studies. Health Educ Behav. 2009 Apr;36(2):230-49 [31]. (This review is further referred to in this table as 'the review by Freudenberg et al. [31]'.) The review by Freudenberg et al. [31] found that: • most campaigns used multiple strategies; • most frequently used strategies: coalition building, media advocacy and public mobilisation; • many campaigns framed around freedom, rights, truth and honesty; social justice frame also used; • the social context was deemed 'critical' to campaign's success; • the campaigns 'opponents' used similar strategies in response. ***Quality*** Inclusion criteria applied in the review by Freudenberg et al. [31] required that evidence was available from at least 3 separate sources and two of these sources should be independent of the campaign. 25 campaigns met the criteria: • been directed at one of six selected industries – alcohol, automobile, firearms, food and beverages, pharmaceuticals and tobacco • designed to influence changes in corporate practices and • clearly identified defined and specific objectives in relation to health. Two campaigns from each of the six target industries were chosen, reviewed, analysed and coded with the aim to: • examine the interactions between advocacy campaigns and their industry targets; • explore the roles of government, researchers and media; and • identify those characteristics of campaigns that succeed in changing health-damaging practices [31].
Weaknesses	***Quality*** • The review by Freudenberg et al. [31] acknowledged that the lack of a standardised measure to assess effectiveness was a limitation. • The WHO best practice examples were not systematically evaluated but resulted from an invitation for submission of case studies of good practice [32]. • Evaluation of health advocacy initiatives has proved problematic. However, recent developments, particularly in the application of a theory of change, have strengthened the knowledge base [33, 34].
Health & communicable disease outcomes	**What evaluation outcomes were used?**
Strengths	***Communication effects*** • In the evidence review of advocacy the policy changes achieved included: labelling products containing trans fats, closing loopholes on gun advertising, stopping patient channel drug advertising. • In the best practice examples and other initiatives, effects included: improving TB-related knowledge and awareness, improving client-provider relations and reducing the stigma of TB and HIV/AIDS. ***Behavioural and other changes*** • No interventions in the review by Freudenberg et al. [31] concerned these changes. • In the best practice examples and other initiatives, effects included an increase in the number of Roma accessing TB diagnostic services in Romania and a reduction in the treatment default intervention among TB and HIV/AIDS patients in the Ukraine [35].

Weaknesses	***Communication effects*** • None of the interventions in the review by Freudenberg et al. [31] concerned communicable diseases. • In the best practice examples and other initiatives, a lack of systematic evaluation reduces the evidential value of reported effects. ***Behavioural and other changes*** • None of the interventions in the review by Freudenberg et al. [31] concerned communicable diseases. • In the best practice examples and other initiatives, a lack of systematic evaluation reduces the evidential value of reported effects.
Application	**What has been applied into practice in the area of health advocacy for the prevention and control of communicable diseases?**
Strengths	• A number of examples of initiatives and of best practice have been published including by: the World Health Organization [32], the World Health Organization's Regional Office for Europe, the European Centre for Disease Prevention and Control, and ACTION: Advocacy to Control Tuberculosis Internationally [27]. • WHO has published a comprehensive collection of 16 examples of good practice with advocacy, communication and social mobilisation interventions for TB control [36]. ***European*** • The toolkits and guides could have an international application. • Some initiatives had a European focus including the European Immunisation Week. The WHO best practice examples included initiatives in Moldova, Romania and the Ukraine [32, 35]. ***Focus*** • The interventions included in the review of health advocacy initiatives were focused on changing the health-damaging practices related to alcohol, automobiles, firearms, food and beverages, pharmaceuticals and tobacco corporations. • For the purpose of this review, the best practice examples and other initiatives that focussed on the communicable diseases of HIV/AIDs, TB and measles were included. ***Targeting including hard-to-reach populations*** In the WHO best practice examples and other initiatives, hard-to-reach groups were targeted including Roma, injecting drug users, and people living with HIV/AIDS.
Weaknesses	***European*** The review by Freudenberg et al. [31] of health advocacy interventions was from North America. No evidence review of health advocacy interventions has been carried out in Europe. The transferability of the North American findings needs to be determined. ***Focus*** No evidence review of health advocacy interventions in communicable diseases in Europe was found. ***Targeting including hard-to-reach populations*** • Hard-to-reach groups are rarely included, and the more stigmatised populations may be excluded although they are often targeted by industries promoting dangerous products. • The European Immunisation Week 2009 utilised the internet and social media. The impact of a specific video of that year's campaign was limited as it may not have been seen by those without internet access.
The reference numbering system used in this table does not stem from the completed review, published in the technical report series as: D'Eath M, Barry MM, Sixsmith J. A rapid evidence review of health advocacy for communicable diseases. Stockholm: ECDC; 2014. Available from: http://www.ecdc.europa.eu/en/publications/Publications/Health-advocacy-technical-report-January-2014.pdf The references cited in this matrix table and upcoming tables are listed in Appendix 3.	

Matrix table 1.3: Strengths and weaknesses identified in the evidence review: social marketing for the prevention and control of communicable diseases

Evidence review: social marketing for the prevention and control of communicable disease [3]	
Concept	**Is there commonly agreed conceptualisation for social marketing?**
Strengths	Social marketing comprises a set of constructs and definitional criteria that have been empirically tested and for which there is strong consensus amongst experts in the field [37-40].
Weaknesses	There is evidence of lack of conceptual clarity amongst interested practitioners in Europe which leads to incorrect interpretation of promotional marketing as social marketing and over-emphasis on messaging [41].
Models & theories	**Were there any models, theories or frameworks identified in the review?**
Strengths	A number of the many models and theories used to inform and shape social marketing interventions were identified in the review [42-44,] and could be used to inform future development.
Weaknesses	• The evidence captured in the review did not demonstrate direct association between improved intervention outcomes and any specific theory or model [43]. • Limited reporting of the application of models and theories in European settings.

Tools	**Did the review identify any tools that facilitate step by step practical application?**
Strengths	The use of common social marketing tools, especially formative research [41, 44, 45, 46], competitive analysis [43, 44], segmentation and targeting [41, 43], and the application of the marketing mix [42-44,] were all described in the evidence reviewed.
Weaknesses	• The evidence captured in the review did not demonstrate direct association between improved outcomes and the application of any specific tools [42, 43]. • Too much focus on promotion and lack of application of other marketing mix tools (i.e. place, product, price) in most interventions is apparent [42].
Evidence	**What evidence was identified in the review and of what quality?**
Strengths	• Five international systematic reviews were identified, all conforming to recognised systematic review methodology [41-44, 47]. • Three European individual studies were identified that provided detailed and robust evidence of impact [45, 46, 48].
Weaknesses	Some evidence of the impacts of socially marketed interventions may not have been captured because the term social marketing is not always used to describe interventions based on social marketing principles (for example, consumer orientation and a clearly stated behavioural change objective) [41].
Health & communicable disease outcomes	**What evaluation outcomes were used?**
Strengths	***Communication effects*** Knowledge and attitude change [44, 46, 49], social and cultural change [42, 46], acceptability of intervention to stakeholders [46]. ***Behavioural and other changes*** • Strong evidence of social marketing intervention resulting in increased compliance with hand hygiene amongst healthcare workers [43]. • Convincing evidence of social marketing interventions to improve hand hygiene resulting in reduced transmission of healthcare-associated infections [45, 46].
Weaknesses	***Behavioural and other changes*** Few interventions measured or reported impact on health status of target audiences.
Application	**What has been applied in the practice of social marketing for the prevention and control of communicable diseases?**
Strengths	***Focus*** Internationally, social marketing has been demonstrated to have applicability in interventions for the prevention/control of HIV, in sexual health interventions, and in hand hygiene interventions [42-44, 47]. ***European*** Social marketing has been successfully applied in hand hygiene and sexual health interventions in Europe [45, 46, 48].
Weaknesses	***Focus*** No evidence was identified that indicates that social marketing has been used for the prevention/control of other communicable diseases. ***European*** There is limited evidence of the widespread application of social marketing to the prevention and control of communicable diseases in Europe. ***Targeting including hard-to-reach populations*** Social marketing does not appear to have been applied to the prevention and control of communicable diseases among disadvantaged and hard to reach groups.
The reference numbering system used in this table does not stem from the completed review, published in the technical report series as: MacDonald L, Cairns G, Angus K, Stead M. Evidence review: social marketing for the prevention and control of communicable disease. Stockholm: ECDC; 2012. The references cited in this matrix table and upcoming tables are listed in Appendix 3. Click here to access the completed review.	

Matrix table 1.4: Strengths and weaknesses identified in the literature review on health information-seeking behaviour on the web: a health consumer and health professional perspective

Literature review: health information-seeking behaviour on the web: a health consumer and health professional perspective [4]	
Concept	**Is there a commonly agreed conceptualisation for health information-seeking behaviour on the web?**
Strengths	Broad definitions exist of online 'health consumers' [50] and 'health seekers' [51].
Weaknesses	Lack of a definition that encapsulates the specific concept of health-seeking behaviour on the web.
Models & theories	**Were there any models, theories or frameworks identified in the review?**
Strengths	The literature pertaining to the topic spans a number of disciplines including: communication science, medicine, health promotion, social marketing, psychology and information technology from which theories, models and frameworks could be developed.
Weaknesses	No such models, theories or frameworks were identified generally or in relation to communicable diseases specifically.

Tools	**Did the review identify any tools that facilitate step by step practical application?**
Strengths	No such tools were identified.
Weaknesses	The literature shows little uniformity in the methods used to research health consumers' information-seeking on the internet.
Evidence	**What evidence was identified in the review and was it of high quality?**
Strengths	There is descriptive evidence about: • Internet accessibility and usage patterns [52-62]. • The online health consumer profile [52, 57, 63-68]. • Online sources of information [51, 57, 63, 69]. • Credibility issues for consumers and professionals [70]. • The top five most important trust makers for health websites [71]. • Internet use by health professionals [72-77]. • The barriers faced by health professionals in their use of the internet [55, 70, 73, 74, 78-81]. • The challenges that a better informed health consumers presents to the patient-practitioner relationships [73, 78, 82-84]. • The importance of addressing literacy concerns when developing online materials was identified [64]. ***Quality*** Although there is no explicit assessment of the quality of the evidence in the review, most of the studies which have been included were subject to peer review prior to their publication.
Weaknesses	• All the evidence is descriptive survey evidence. • There is a general lack of studies focusing on health information-seeking behaviour on the internet for health professionals and citizens in the context of communicable disease. ***Quality*** There is little consistency between the subject matter of the research undertaken and the methodologies and terminologies used in relation to internet use by health professionals.
Health & communicable disease outcomes	**What evaluation outcomes were used?**
Strengths	***Communication effects*** • Internet use among patients is redefining the patient/physician relationship as patients become 'active consumers of health information' [82]. • Online information seekers generally feel more reassured having consulted health information sites [51, 52, 62, 68]. • One survey showed that newly diagnosed patients used online information to prompt questions or look for a second opinion [67]. • Surveys suggest that patients' trust in their physicians may be increasing as patients' rely on doctors to interpret the information they access online [85] and that most people choose health professionals as their preferred source of information [63]. Health professionals may recommend credible websites to patients [83] and may provide printed information from websites [73]. ***Behavioural and other changes*** • One survey showed that 29% of respondents used online information to decide whether or not to consult a doctor and a percentage of these used the internet in conjunction with a doctor's appointment [62]. • Information-seeking from the internet may result in better informed patients thereby improving health outcomes by enhancing adherence [84]. It may also improve patients' self-efficacy [82] and empowers their decision-making about their health [86].
Weaknesses	***Communication effects*** • Health professionals are at risk from information overload [70, 80] and have difficulty filtering and identifying the most credible information [70, 77, 80]. • The information needs of health professionals are not homogenous [80] and physician preferences vary according to speciality and tasks [55]. • If a trusting relationship is to develop between patients and health professionals, it is required that health professionals acknowledge that patients seek information online [82]. ***Behavioural and other changes*** The review contains no evidence in this regard.
Application	**What has been applied into practice in the area of health information-seeking behaviour on the web for the prevention and control of communicable diseases?**
Strengths	***European*** • Data exists on internet connection and broadband connectivity in the EU. • The WHO conducted an e-Health cross-country survey of seven European countries [52]. ***Focus*** The survey data has focussed on the general public (including US national samples [63, 87]), newly diagnosed patients, men and women living with HIV/AIDS and health professionals [72-77].
Weaknesses	Much of the extant research is survey based and descriptive. There is little evidence of application in practice or the use of interventions for building on the survey data. ***European*** • There is an inequality of access to the internet between countries in the EU [53] which may result in increased health inequalities. • Most of the evidence and research is from North America. ***Focus*** There is little focus in the literature on specific health topics in general and communicable diseases in particular.

	Targeting including hard-to-reach populations Only one study focussed on health information-seeking behaviour among hard-to-reach populations; people living with HIV/AIDS [88].
The reference numbering system used in this table does not stem from the completed review, published in the technical report series as: Higgins O, Sixsmith J, Barry MM, Domegan C. A literature review on health information-seeking behaviour on the web: a health consumer and health professional perspective. Stockholm: ECDC; 2011. The references cited in this matrix table and upcoming tables are listed in Appendix 3. Click here to access the completed review.	

Matrix table 1.5: Strengths and weaknesses identified in the literature review of trust and reputation management in communicable disease public health

Literature review: a literature review of trust and reputation management in communicable disease public health [5]	
Concept	**Is there commonly agreed conceptualisation for trust and reputation management?**
Strengths	Conceptualisation of trust and reputation management in the public health communicable disease literature focuses on its strategic function and impact; to date, broad-based theoretical or explanatory conceptualisation is in an emergent phase.
Weaknesses	Not well understood holistically in communicable disease public health; tendency to narrow concept to specific communication functions and frameworks for planning and action.
Models & theories	**Were there any models, theories or frameworks identified in the review?**
Strengths	• Crisis and Emergency Risk Communication (CERC): a theoretical framework for research and practice [89] • Risk communication [90-92] • Crisis communication [90] • Science communication [93]
Weaknesses	Theory base and their application in public health of: stakeholder relationship management; media behaviour and relations; multiple relevant theories in public relations; and branding largely absent from extant evidence base.
Tools	**Did the review identify any tools that facilitate step by step practical application?**
Strengths	• WHO Outbreak Communication Guidelines [94] • Health Protection Network: Communicating with the public about health risks [95] • Social marketing identified as potentially effective planning tool [90, 96]
Weaknesses	• Identified tools are not holistic; they address only select organisational functions that contribute to trust and reputational capital. • Social marketing frameworks as a planning tool are not fully tested.
Evidence	**What evidence was identified in the review and of what quality?**
Strengths	A body of case studies and retrospective analysis is beginning to accumulate; 30% of identified literature reported empirically tested evidence.
Weaknesses	Overall, theory and evidence-informed applications of trust and reputation management for communicable disease health communication has been subject to rather limited research and analysis to date, especially in Europe.
Health & communicable disease outcomes	**What evaluation outcomes were used?**
Strength	***Communication effects*** Public trust of institutional advice and competency [97-99]; awareness of risk and appropriate protective action [99-101]; media content and tone [102]; awareness of brand identity [103]. ***Behavioural and other changes*** Behaviour change to reduce influenza transmission (increased hand washing, surface cleaning, avoidance behaviours etc.) [101].
Weakness	***Communication effects*** Paucity of baseline measures of organisational reputational capital or public trust. ***Behavioural and other changes*** Very limited evidence on behavioural and other changes.
Application	**What has been applied into practice in trust and reputation management for the prevention and control of communicable disease?**
Strengths	***Focus*** • Primary research and commentaries addressing the impact of discreet, event-specific communication particularly crisis communication, and to a lesser extent risk communication [97, 99,102, 104-113]. • SARS [99, 102, 105-112], influenza [91, 96, 98, 100, 101, 113-117,], bioterrorism (anthrax and smallpox) [97, 104, 118], vaccination hesitancy [119, 120]. ***European*** Evidence from three European countries identified in the review: UK [95, 101, 103, 113, 117, 119, 121-124,]; Norway [100]; Italy [125]. ***Targeting including hard-to-reach populations*** Some applicable evidence on overcoming cultural barriers for effective targeting of hard-to-reach populations [91].

Weaknesses	***Focus*** Very little attention has been paid by the academic and professional practice communities to specific communication activities that may be useful for long-term trust and reputation management. Paucity of literature on activities that can support this, such as issues management, science communication, branding, social marketing and stakeholder relations. Evidence addresses very limited spectrum of communicable diseases. ***European*** Majority of primary research and commentaries from outside Europe (Asia and North America). ***Targeting including hard-to-reach populations*** No population-specific evidence identified.
The reference numbering system used in this table does not stem from the completed review, published in the technical report series as: Cairns G, MacDonald L, de Andrade M, Angus K. A literature review of trust and reputation management in communicable disease public health. Stockholm: ECDC; 2011. The references cited in this matrix table and upcoming tables are listed in Appendix 3. Click here to access the completed review.	

Matrix table 1.6: Strengths and weaknesses identified in the literature review on health communication campaign evaluation with regard to the prevention and control of communicable diseases in Europe

Literature review: health communication campaign evaluation with regard to the prevention and control of communicable diseases in Europe [6]	
Concept	**Is there a commonly agreed conceptualisation for campaign evaluation?**
Strengths	Evaluation is comprehensively defined [126]. Valente described evaluation as 'the systematic application of research procedures to understand the conceptualisation, design, implementation and utility of interventions' [126].
Weaknesses	• Lack of a clear definition which encompasses the varying forms and intensities of campaigns. • Ambiguity in use of labels to describe a campaign [127].
Models & theories	**Were there any models, theories or frameworks identified in the review?**
Strengths	A number of existing frameworks that can help guide communication evaluation practice were identified and include: • Audience-Channel-Message-Evaluation (ACME) framework for health communication campaigns [128]. • The National Cancer Institute (USA) – Cyclical stages of the health communication process [129]. • The Reach, Effectiveness, Adoption, Implementation and Maintenance (RE-AIM) framework [130, 131]. • Communication outcomes on four levels, namely the individual, the network, the organisation and the societal level [132].
Weaknesses	• Existing evaluation principles are based on values; however as values are context specific and can vary greatly between cultures, transferring standards from one culture/country to another may bring additional challenges within the European context [133]. • Lack of understanding of the interplay between evaluation principles within and between models and theories and appreciation of the significance of this interplay within an integrated framework [128].
Tools	**Did the review identify any tools that facilitate step by step practical application?**
Strengths	A number of tools were identified in the review which included: • Svoronos and Mate: driver diagram tool [134]. • World Health Organization: set of standardised outcome measures [135]. • Centers for Disease Prevention and Control: framework for programme evaluation in public health [136, 137].
Weaknesses	Limited tools to assist researchers in the process of conducting evaluations in specific contexts, for example, within resource-limited countries [134].
Evidence	**What evidence was identified in the review and what was the quality of the evidence?**
Strengths	***Quality*** Evidence on health communication campaign evaluation for communicable diseases was identified and included: • systematic and exploratory reviews [138-143]; • European examples; and • a variety of individual study designs. Broad principles of campaign design, implementation and evaluation have been developed and are available to public health professionals and researchers [144-147].

Weaknesses	***Quality*** • Lack of high-quality campaign evaluation studies with regard to communicable diseases in Europe. • Some identified restrictions include limited utilisation of: theoretical underpinning for campaigns, theory based evaluations, guiding evaluation principles, rigorous methodology and standardisation of evaluation designs, formative and process evaluation and lack of detailed reporting of methodologies used within the European setting. • The scope of the health communication methodologies used varied greatly. • Lack of exploration of unintended campaign effects and cost effectiveness. • Lack of control of potential external influences to outcome measures prior to campaign implementation. • Limited use of control or comparison groups and large sample sizes. • High use of self-reporting outcomes and levels of bias in the evidence.
Health & communicable disease outcomes	**What evaluation outcomes were used?**
Strengths	***Behavioural and other changes*** Some health outcomes to reduce morbidity and mortality, were utilised which included: • vaccination uptake; • uptake of HIV/STI testing; • condom use; and • behaviour (e.g. hand washing).
Weaknesses	***Communication effects*** • The review highlighted inconsistency in the indicators used to evaluate health communication campaigns. • Many of the indicators used were indirect indicators such as campaign exposure, knowledge, attitudes and beliefs. • Many of the outcomes are self-reported. • Limited use of a common set of standardised outcome measures [132, 135].
Application	**What has been applied into practice in the area of campaign evaluation for the prevention and control of communicable diseases?**
Strengths	***European*** A wide range of examples of evaluation studies of health communication campaigns for prevention and control of communicable diseases in Europe have been developed and implemented. ***Focus*** The identified European examples of practice were focused on a broad range of communicable disease topics such as: HIV/AIDS, STI and safe sex; hand hygiene; influenza (vaccination) and antibiotic use. Others included: chlamydia, hepatitis C, food safety and diphtheria [140-143, 148-187]. ***Targeting including hard-to-reach populations*** • The identified European examples mainly targeted healthcare workers, the general public, and young adults. Other targeted groups included adults, people living with HIV/AIDS, homosexual adults, older adults, injecting drug users, parents, and general practitioners. • Impact and outcome evaluation were utilised within the identified European evidence of practice.
Weaknesses	***European*** • From the 43 identified examples it appears there is limited utilisation of existing theories, principles and frameworks for communication evaluation in the EU setting. • It would appear that there is limited capacity in campaign evaluation research within Europe. ***Targeting including hard-to-reach populations*** Only two examples explicitly stated that it targeted hard-to-reach groups [166, 185].
The reference numbering system used in this table does not stem from the completed review, published in the technical report series as: Fox KA, Sixsmith J, Barry MM. Health communication campaign evaluation with regard to the prevention and control of communicable diseases in Europe. Stockholm: ECDC; 2014. [In press.] The references cited in this matrix table and upcoming tables are listed in Appendix 3.	

Matrix table 1.7: Strengths and weaknesses identified in the literature review on effective risk communication for the prevention and control of communicable diseases in Europe

Literature review: effective risk communication for the prevention and control of communicable diseases in Europe [7]	
Concept	**Is there a commonly agreed conceptualisation for risk communication?**
Strengths	Risk communication is well conceptualised in a number of disciplines.
Weaknesses	• Blurred definitions, dispersed across various disciplines and an overlap between risk and crisis/emergency communication. • Emphasis in the literature on risk communication in the context of emergency or crisis events. • Risk communication on communicable disease is still emerging.
Models & theories	**Were there any models, theories or frameworks identified in the review?**

Strengths	The literature on risk communication theories is rich and prolific across many disciplines, particularly perception of risk theories. Four theoretical models of risk communication [188]: • Risk perception model • Mental noise • Negative dominance • Trust determination. In addition, there are social constructionist approaches – emphasising social and cultural factors [189, 190].
Weaknesses	• Few integrative risk communication theoretical frameworks that bridge diverse disciplinary traditions [191]. • Limited understanding of the complicated roles of psychological, social and cultural influences on risk perception [192-195].
Tools	**Did the review identify any tools that facilitate step by step practical application?**
Strengths	The review revealed guidelines and tools to facilitate effective risk communication on the prevention and control of communicable diseases, which included some of the following: • The Crisis Emergency and Risk Communication (CERC) tool developed by the US Centers for Disease Control and Prevention [196, 197] • WHO's 2005 *Outbreak communication guidelines* [198] • The US Department of Health and Human Services' document *Communication in crisis: risk communication guidelines for public officials* [199, 200] • The crisis and emergency risk communication toolkit, published by the California Department of Health Services [200, 201] • A report of the WHO Expert Consultation on Outbreak Communication: *Singapore outbreak communication: best practices for communicating with the public during an outbreak* [202, 203] • *Communicating about risks to public health: Pointers to good practice*, by Bennett at London's Department of Health [203, 204] • The Washington, DC-based Federal Communicators Network's *Communicators guide for federal, state, regional, and local communicators* [203, 205] • *Guidelines on science and health communication*, a collaboration of the Social Issues Research Centre, Royal Society and Royal Institution of Great Britain [206].
Weaknesses	• Resources focus on crisis rather than strategic pre-crisis communication. • Existing resources need to be updated to meet new and developing needs such as web-based and social networking communication and extended to build capacities and resilience of hard-to-reach groups and enhance competencies of health professionals [207, 208]. • Lack of emphasis on integrating models of long-term behavioural change into risk communication tools, models and guidelines [209, 210].
Evidence	**What evidence was identified in the review and what is the quality of the evidence?**
Strengths	Four review papers assist in bringing together the key guidance documents which have informed much of risk communication policy and application over the past two decades: • Jardine et al.'s 2003 publication *Risk management frameworks for human health and environmental risks* [211]. • Glik's 2007 review, *Risk communication for public health emergencies* [200]. • The Health Protection Network of Scotland's guidance document *Communicating with the public about health risks*, published in 2008 [203]. • Abraham's recent (2011) review, *Lessons from the pandemic: The need for new tools for risk and outbreak communication* [209]. ***Quality*** • A number of the same best practices elements of effective risk communication were identified in all of the first three review papers. • Mix of quantitative and qualitative studies was evident in the literature. • Several well-established quantitative methodologies were identified: risk factor analysis, risk and dynamic modelling [212], and qualitative methodologies such as focus groups and interviews.
Weaknesses	***Quality*** • The majority of the guidance documents were focused on emergency crisis situations and are of varying depth and quality. • Only two of the same documents were identified more than once across the first three reviews. • Lack of rigorous empirical evidence and evaluation research on 'event-specific risk communication efforts' relies more on guidance documents, case study descriptions and theoretical insights from broader literature on risk communication. • Limited translation/communication of research findings to end users, particularly policymakers [212]. • Lack of empirical studies on the application of risk communication principles and theories. • Lack of evaluation studies of the effectiveness of risk communication in practice. • Lack of quantitative research that account for the nonlinear dynamics of communicable diseases and the underlying drivers of communicable disease risks [212]. • Lack of studies on ideological, political and ethical implications of risk communication [213-215]. • Lack of evidence on how to use risk communication to build public trust. • Limited research into the general health beliefs, particularly amongst hard-to-reach communities.
Health & communicable disease outcomes	**What evaluation outcomes were used?**

Strength	***Communication effects*** It has been identified that the principle of involving the public in matters of risk is one of the crucial distinctions of risk communication, in theory and practice, from a larger literature on crisis communication [216].
Weakness	***Communication effects*** • The review does not report any reference to assessment of public engagement in matters of risk. • Risk communication messages often fail to reach the intended communities, including those people most at risk of the disease [217-219]. • Stigma and fear can be generated in minority populations in response to risk communication messages [217-219]. ***Behavioural and other changes*** There is a lack of evidence-informed evaluations of risk communication on communicable diseases in the literature [220].
Application	**What has been applied into practice in the area of risk communication for the prevention and control of communicable diseases?**
Strengths	• Singapore's handling of the 2003 sudden acute respiratory syndrome (SARS) epidemic is regarded as an example of best practice in risk communication [202, 221, 222]. • There is a developing body of evidence with regard to risk communication, for example the SARS (2003) and Influenza H1N1 (2009) epidemics. • There are European examples of best practice in enhancing the quality of communicable disease surveillance to inform risk communication; simplified reporting, improved completeness and increased timelines [223-226]. ***European*** Practical application of risk communication studies were mostly identified from Europe and North America, with some also from south-east Asia. ***Focus*** The greatest number of identified studies were found on the topics of: risk communication theories, guidelines and risk perceptions. Other examples included public health responses to the threat of anthrax and other emergencies linked to bioterrorism, risk communication related to HIV/AIDS, tuberculosis, West Nile virus, SARS and H1N1 influenza; vaccine risk communication, particularly the controversies surrounding the measles-mumps-rubella vaccine in the UK and general pandemic preparedness and risk communication.
Weaknesses	• Focus is on emergency and outbreak situations rather than strategic risk communication. • Despite the advice in the guidance documents, and the availability of various planning tools for pre-crisis event risk communication and readiness efforts, studies show that public health, governments and research communities, still need to concentrate on advanced planning [227-230]. • The research community lacked preparation to conduct studies before, during and immediately after the outbreak of a communicable disease [229]. • Lack of testing of risk communication principles under simulated conditions of time pressures/stresses and with different populations [213, 231-232]. • Lack of collaboration of international and national health organisations with community-level health providers. • Insufficient focus in risk communication policy, guidance and research on how to build and maintain trust with the public before, during and after outbreaks of communicable diseases. • Building and maintaining trust with the public is essential for effective risk communication but difficult to achieve in practice due to limited practical guidelines. ***Targeting including hard-to-reach populations*** Studies show that during communicable disease outbreaks, minority populations are found to be disproportionally affected [217-219], however the review identified a paucity of studies addressing hard-to-reach groups.
The reference numbering system used in this table does not stem from the completed review, published in the technical report series as: Infanti J, Sixsmith J, Barry MM, Núñez-Córdoba J, Oroviogoicoechea-Ortega C, Guillén-Grima F. A literature review on effective risk communication for the prevention and control of communicable diseases in Europe. Stockholm: ECDC; 2013. Click here to access the completed review. The references cited in this matrix table and upcoming tables are listed in Appendix 3.	

Matrix table 1.8: Strengths and weaknesses identified in the systematic literature review of the evidence for effective national immunisation schedule promotional communications

Systematic literature review : evidence for effective national immunisation schedule promotional communications [8]	
Concept	**Is there commonly agreed conceptualisation of communication for the promotion of immunisation?**
Strengths	There are a range of communication theories that are applicable to the concept of pro-immunisation communication [233-238].
Weaknesses	The review concluded that few interventions explicitly considered underlying conceptual assumptions of pro-immunisation communication. Many appeared to be tacitly based on information deficit models/assumptions.
Models & theories	**Were there any models, theories or frameworks identified in the review?**
Strengths	• A small number of promotional interventions aimed at lay populations used prospect theory, Leventhal's common sense model of lay illness representation, the health belief model, the theory of

	planned behaviour [239-243]. • A number of education and training interventions for healthcare workers with objectives based on information deficit models were identified [for example, see 244-250].
Weaknesses	• Absence of explicitly stated theoretical underpinning in most interventions captured by the review. • Implicit information deficit model apparent in promotions for all target audiences including those where the evidence indicates this may be ineffective (e.g. vaccine-hesitant persons) [for example see 238, 251-255].
Tools	**Did the review identify any tools that facilitate step by step practical application?**
Strengths	• A very wide range of mass communication and personalised promotional communication tools applied and evaluated across a diverse range of channels, materials and dissemination methods and agents were identified in the review [for example see 244-245, 256]. • The review also identified a range of training and education tools that were described and evaluated for effectiveness [239, 244-250, 257-260].
Weaknesses	Many interventions combined tools but reported evaluations did not isolate and measure contribution of individual elements.
Evidence	**What evidence was identified in the review and of what quality?**
Strengths	The review included thirty three studies of promotional communication interventions for immunisation [239-250, 256-277]. The evidence pool provides evidence for a range of promotional communication practices that can improve knowledge of, attitudes towards, and uptake of immunisation [244-246, 256, 263-264, 266]. ***Quality*** • Fifteen of the thirty three evaluation studies captured in the review were rated as high-quality studies [244-245, 248-250, 259, 261-263, 265-267, 272-274] • Seven high-quality studies reported convincing evidence of positive effect [244-246, 256, 263-264, 266]
Weaknesses	***Quality*** Limited conclusions can be drawn from the review on most effective practice. This is due to the heterogeneity of interventions and evaluation methods, and the small number of studies assessed as high quality and reporting convincing evidence of positive effect.
Health & communicable disease outcomes	**What evaluation outcomes were used?**
Strengths	***Communication effects*** • Changes in knowledge [242-243, 249, 260, 269, 274, 276] • Attitudinal measures including: intentions to immunise, perceived effectiveness of immunisation, subjective norms/normative beliefs regarding risk, perceptions regarding behavioural control [240-243, 271, 274, 278] ***Behavioural and other changes*** Changes in immunisation uptake [239, 244-246, 256-258, 261-266, 272-273]
Weaknesses	***Communication effects*** Reliance on individual-level effect measures and very limited evidence on population-level changes, including studies where large scale population-level change was the objective [see for example 258, 273, 276]. ***Behavioural and other changes*** None of the studies included in the review provided data on the impact of promotional communication on health status of the target audience(s).
Application	**What has been applied into practice in the area of national immunisation schedule promotional communication?**
Strengths	***Focus*** Of the thirty three studies included in the review, 22 reported on interventions to promote influenza immunisation [239,244-250, 257, 259, 261, 262-271], and 11 reported on interventions to promote immunisations for other vaccine-preventable diseases [240-243, 258, 260, 272-276]. ***European*** The studies reported on interventions across twelve European countries. ***Targeting including hard-to-reach populations*** The majority of studies included in the review targeted healthcare workers [239, 244 -250, 256-260, 262, 264, 267] and/or patient risk groups such as the elderly [244-245, 250, 259, 261, 263, 265-266, 268-269, 273].
Weaknesses	***Focus*** Limited evaluations of promotional communication for childhood vaccine-preventable diseases were captured in the review [240, 258, 260, 272-276]. ***Target*** Limited evidence on interventions targeting parents and young people [240-243, 258, 260, 272-276]. ***Targeting including hard-to-reach populations*** No evidence identified on vaccine promotions for hard-to-reach groups.
The reference numbering system used in this table does not stem from the completed review, published in the technical report series as: Cairns G, MacDonald L, Angus K, Walker L, Cairns-Haylor T, Bowdler T. Systematic literature review of the evidence for effective national immunisation schedule promotional communications. Stockholm: ECDC; 2012. The references cited in this matrix table and upcoming tables are listed in Appendix 3. Click here to access the completed review.	

Matrix table 1.9: Strengths and weaknesses identified in the systematic literature review to examine the evidence for the effectiveness of interventions that use theories and models of behaviour change: towards the prevention and control communicable diseases

Systematic literature review: evidence for the effectiveness of interventions that use theories and models of behaviour change: towards the prevention and control of communicable diseases [9]	
Concept	**Is there commonly agreed conceptualisation for theories and models?**
Strengths	• Behavioural or social theories and models are considered an important tool in the design, planning and evaluation of effective behaviour change interventions and programmes [278-280]. • Behavioural and social theories have the potential to help identify what changes can take place, explain and support change dynamics, identify key influencers on outcomes, and select participants who are the most likely to benefit. The use of behavioural and social theories in health intervention planning and management also improve the prospects for replication, modification and scaling up of effective interventions, and improves the learning that can be derived from practice, whether successful or unsuccessful [281]. • It is recognised that there is no universal theory for behaviour change, and that multiple theories and models may have applicability according to context, variables of interest and scale of change desired [281]. More than one theory/model may be effectively applied to a specific behaviour change objective [281]. • A number of studies included in the review included more than one theory or model [282 - 298].
Weaknesses	Although it is recognised that models and theories at multiple levels (i.e. theories and models of individual, interpersonal, as well as community and group-level behaviours), are applicable and desirable, the mapping results from this review indicate this concept is not fully adopted at practice level.
Models & theories	**Were there any models, theories or frameworks identified in the review?**
Strengths	In all of the studies included in the review, the intervention was explicitly based on, or informed by a behaviour change theory or model. The evidence base highlighted and explored a wide range of relevant behaviour change theories/models: • Health belief model (n=26) • Social cognitive theory (social learning theory) (n=14) • Theory of planned behaviour (n=11) • Stages of change (transtheoretical) model (n=8) • Theory of reasoned action (n=6) • Diffusion of innovations (n=5) • PRECEDE-PROCEED planning framework (n=4) • Community organisation locality development model (n=1) • Precaution adoption process model (n=1) • Behavioural ecological model (n=1) • Integrated behavioural model (n=1) • Common sense model (n=1) • Transactional stress and coping model (n=1) • Social ecological model (n=1) (Summaries of all the theories and models identified are included in the review.) Large evidence pool for models and theories targeting individual's health related behaviours (n=54).
Weaknesses	• The applicability of the theory or model upon which evaluated interventions were based or informed by was not assessed in any of the studies included in the review. • The bias towards individual-level theories (n=54) results in a less comprehensive evidence pool of interpersonal health behaviour (n=15), community and group models of health behaviour (n=6), or theoretical frameworks for planning health promotion (n=6).
Tools	**Did the review identify any tools that facilitate step by step practical application?**
Strengths	A wide range of tools applied across a diverse range of channels and settings were identified in the review.
Weaknesses	• Most interventions relied exclusively on communication tools to put theories and models into practice. • Many interventions combined tools, but evaluations did not isolate and measure the contribution of individual tools/elements.
Evidence	**What evidence was identified in the review and of what quality?**
Strengths	• The review included sixty-one evaluations of interventions for the prevention/control of communicable disease that used a theory or model of behaviour change [282-343]. • The majority of studies included in the review were randomised controlled trials (n=32) and before-and-after studies (n=24). ***Quality*** Twenty-one of the sixty-one studies included in the review were rated as of high quality (i.e.≥75%) [282-283, 285, 288-290, 293-294, 297, 302, 307-308, 310, 316, 319-320, 325, 331, 333-335]. Mean quality rating was 68% overall.
Weaknesses	There is a lack of evidence on the cost-effectiveness of theory-based interventions, with only one study included in the review reporting on implementation costs [286]. **Quality** Six of the nine European studies included in the review were rated below the threshold for high quality [286, 292, 301, 327, 330, 337]. Only three of the nine European studies were rated as of high quality [282, 302, 331]. All three reported positive effects.

Health & communicable disease outcomes	**What evaluation outcomes were used?**
Strengths	***Behavioural and other changes*** • The evidence indicates that individual-level behaviour theories (Health Belief Model, Theory of Reasoned Action, and the Theory of Planned Behaviour), and interpersonal behaviour theories (Social Cognitive Theory and the Transactional Stress and Coping Model) were associated with positive outcomes [282, 288-290, 294, 302, 307-308, 319, 331, 334]. • Immunisation uptake was the most frequently targeted behaviour for change in the studies included in the review [284, 286-287, 291, 293, 296, 299-300, 302-304, 306, 312-314, 316-317, 322-323, 325-328, 330, 331]. • Improved hand hygiene was the second most commonly targeted behaviour for change in the studies included in the review [288, 290, 304, 306-307, 311, 315-316, 336-340]. • Several other behaviours were targeted for change in the studies included in the review: improving food preparation practices [295, 304, 332-333, 335-336]; addressing the sharing or reusing of drug injecting equipment [292, 295, 320, 328 -329]; improving medicine regimen adherence [283, 285, 305, 310-311]; reducing antibiotic use and prescribing [282, 289, 301, 306]; improving respiratory hygiene behaviours [295, 306, 311, 315]; reducing risky sexual behaviours [294-295, 320, 327]; uptake of health screening [297, 302, 323]; modifying injecting drug preparation practices [295, 321]; and avoiding tick bites/safe tick removal [298, 342].
Weaknesses	***Communication effects*** Included studies did not report sufficient detail on communication-based indicators of change to draw any inferences or conclusions on outcomes. ***Behavioural and other changes*** The studies included in the review highlight a need for more research on the nature and strength of association between behaviour and behavioural determinants. Many of the included individual-level and interpersonal-level theory based interventions targeted common intermediate variables but did not measure change. This represents a lost opportunity to pool evidence through meta-analysis or other methods to identify and measure treatment for, or effects size of, modifiable factors shared by the various theories and models (e.g. perceptions on self-efficacy, susceptibility to disease, severity of consequences, significant others behaviour).
Application	**What has been applied into practice regarding the use of theories and models of behaviour change?**
Strengths	***Focus*** The interventions included in the review targeted a number of communicable diseases assessed by ECDC criteria as relevant to Europe. These were categorised into six groups for the purposes of the review: • respiratory tract infections [282-290, 299-317] • vaccine-preventable diseases and invasive bacterial infections [284, 286-287, 290-291,299-302, 304, 306, 308-309, 312-314, 317- 319] • blood-borne diseases and STIs [292-297, 320-331] • foodborne diseases, waterborne diseases and zoonoses [288, 296, 304, 307, 315, 332-336] • antimicrobial resistance and healthcare-associated infections [337-340] • emerging and vector-borne diseases [298, 341-342] N.B. Behaviour change interventions only aimed at preventing or controlling HIV/AIDS, and those only targeting risky sexual behaviours were excluded from the review as they have been the specific focus of a number of other systematic reviews published recently. ***European*** Fifteen per cent (n=9) of intervention studies captured by the review were from European settings [282, 286, 292, 301-302, 327, 330-331, 337]. ***Targeting including hard-to-reach populations*** • A wide range of target audiences, in particular a large body of evidence reporting on health professionals (n= 16) [282, 285-286, 289-290, 299-300, 302, 308, 312, 314, 317-318, 324, 337-340]. • Several studies included in the review targeted hard-to-reach groups, such as injecting drug users [292, 294-295, 320-321, 329], immigrants [297, 342] and homeless people [310].
Weaknesses	***European*** There is an imbalance with relatively less evidence for lay persons (e.g. parents, adolescents, children) than for health professionals (as intermediaries to reach lay persons or as end users in their own right) as target audiences.
The reference numbering system used in this table does not stem from the completed review, published in the technical report series as: Angus K, Cairns G, Purves R, Bryce S, MacDonald L, Gordon R. Systematic literature review to examine the evidence for the effectiveness of interventions that use theories and models of behaviour change: towards the prevention and control of communicable diseases. Stockholm: ECDC; 2013. Available from: http://www.ecdc.europa.eu/en/publications/publications/health-communication-behaviour-change-literature-review.pdf The references cited in this matrix table are listed in Appendix 3.	

Conclusion

This chapter consolidates the complex and interdependent strengths and weaknesses in the evidence for health communication in the prevention and control of communicable diseases. The synthesis of evidence [1-9] highlights the most significant strengths and gaps in the European evidence base currently available for health communication in the prevention and control of communicable diseases.

While there were many strengths and weaknesses evident, overall, it is apparent that there is a limited evidence base focusing on prevention and control of communicable diseases in a European context. Much of the evidence originated from North America and draws substantially on evidence from non-communicable diseases and other health issues. Therefore, the transferability of this knowledge, learning, expertise, and best practice should be explored in order to develop capacity. Within the limited evidence base identified, it emerged that with regard to communicable diseases, health communication was most often applied in the areas of HIV/AIDS, STI and sexual health, influenza, vaccine-preventable diseases and antimicrobial resistance/healthcare-associated infections (hand hygiene). However, it is also evident that there is a lack of knowledge on how to use health communications to effectively engage and improve health outcomes for hard-to-reach groups [1-9], even though they carry the most significant burden of disease, have the poorest access to services and are found to be disproportionally affected during communicable disease outbreaks [7]. Future health communication needs to be inclusive and focus on reducing disparities and inequalities across EU/EEA countries.

The reviews also indicated that within the current evidence base, there was: methodological variability, a lack of rigorous evaluation, inconsistent reporting, and lack of empirical studies and use of standardised measures, heterogeneity of interventions and evaluations. These limitations highlight the need for enhanced development and support of health communication research capacity in Europe. This is required in order to facilitate the development of a high-quality robust evidence base.

Overall, while there is a limited European evidence base for health communication and communicable diseases, there is also evidence indicating some, albeit limited capacity across Europe. The implications of these findings, their relevance and suggested action areas for the future development of capacity for effective communication for the prevention and control of communicable diseases are discussed further in Chapter 3 of this report.

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References for all matrices are documented in Appendix 3.

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Chapter 2
Opportunities and challenges: The consultation phases

Introduction

This chapter presents the evidence from the consultation phases of the Translating Health Communication Project. These phases spanned the time-frame of the project and provided an ongoing contribution from the key stakeholders in health communication for communicable diseases from EU/EEA Member States. The matrices in this chapter, focusing on the identification of opportunities and challenges through primary data collection, complement those presented in Chapter 1, where the focus was on strengths and weaknesses of the evidence.

Initially, a mixed methods approach was utilised to identify and map health communication activities specifically in relation to the prevention and control of communicable diseases across EU/EEA countries. The consultation comprised an e-survey and telephone interviews, and full information about the methodology used can be accessed in Doyle et al., 2012 [1]. The data from the e-survey was collected between October and December 2010, and 65 participants completed the survey. The semi-structured telephone interviews were designed to obtain more in-depth information on health communication activities. These were undertaken between October 2010 and March 2011, and 44 key informants participated. Representation was obtained from all 30 EU/EEA Member States.

Using questions drawn from the findings of the e-survey, an expert consultation was conducted in Budapest, Hungary, on 21 March 2011. The participants in the expert consultation were mostly drawn from ECDC Competent Bodies (CB) from various EU/EEA countries and other delegates attending the Meeting of the Competent Bodies for Communication at the Ministry of National Resources. A total of 25 participants from 15 countries took part. The protocol comprised of nine questions and covered domains such as health communication: examples, gaps, barriers, priorities, capacity and needs with regard to communicable diseases. The complete results of this consultation are presented in Doyle, Sixsmith and Barry, 2011 [2].

The results from the telephone interviews, the e-survey and the expert consultation were consolidated and triangulated and further analysed using a SWOC analysis. The findings from the evidence reviews were analysed using the strengths and weaknesses components of the SWOC analysis, the results of which are presented in Chapter 1, and the primary information gathering data were analysed in relation to opportunities and challenges and are presented in Matrix table 2.1 of this chapter.

In 2012, the final consultation phase was undertaken with stakeholders. It comprised a private online email consultation (further referred to here as 'e-forum'), designed to provide an engaging and dynamic platform where EU/EEA public health communication experts could share experiences, generate discussion and identify what would be useful and practical to enhance and support the future development of health communication in the prevention and control of communicable diseases across the EU and EEA countries over the next five years [3]. The protocol was developed with questions drawn from the results of earlier data collection and comprised the following five questions:

With regard to the development and use of health communication for the prevention and control of communicable diseases over the next five years, both in your country and across the EU and EEA countries:

- What are the challenges?
- What are the opportunities?
- What is desirable[3]?
- What is feasible[4]?
- What is viable[5]?

Data was gathered using asynchronous communication via a private electronic mailing list and supported by an interactive website/e-forum which provided access to project information and relevant resources, including

[3] Participants identified what they would like to happen in the future for health communication.

[4] Participants identified practical steps that can be taken in the future for health communication.

[5] Participants identified what they perceive can be realistically expected in the future for health communication.

technical reports for downloading and answers to frequently asked questions (FAQ). The data generated from this consultation were analysed using the SWOC analysis process developed for the project, with emphasis on identifying opportunities and challenges as well as what was desirable, feasible and viable for the development and use of health communication. Twelve participants from 12 countries took part. These participants had a wide range of public health and health communication expertise and were employed by a diversity of organisations. The data analysed are presented in Matrix tables 2.2 through 2.6 in this chapter.

Primary information gathering

Challenges and opportunities identified

The first matrix presented in Table 2.1 outlines the challenges and opportunities identified through the e-survey (n=65), telephone interviews (n=44) and group consultation (n=25) [1, 2]. The themes are derived from the questions used in the consultation [1]. The subsequent matrices in this chapter present the data collected through the e-forum [3]. Please note that for the twelve participants that took part in the online email consultation, personal identifiers were removed and replaced with participant numbers, thus any direct quotes from these participants will be labelled as such, for example 'P1'.

Matrix table 2.1: Challenges and opportunities

Primary information gathering phase of the project [1] Public health stakeholders' perceived status of health communication activities for the prevention and control of communicable diseases across the EU and EEA countries, including an e-survey, telephone interviews and an expert consultation.	
	What are the structures of health communication across the EU?
Challenges	It is difficult and complex to support the development of health communication capacity across the EU/EEA for a number of reasons, including: • the political, administrative, linguistic and cultural diversity of the 30 EU and EEA countries; • the variability in the range and level of health communication activities undertaken, and in levels of capacity and resources to develop, effectively use, and evaluate health communication; • the fact that responsibility for health communication is fragmented between different ministries and/or organisations in each country, resulting in no shared national profile of health communication activities across Europe.
Opportunities	To enhance collaborative working and strengthen partnerships and professional networks among those working in the area of health communication and communicable disease within countries and across all Member States. The different EU/EEA country contexts create a unique opportunity for Member States to share different ideas, resources, information, examples, experiences, and expertise.
	How is health communication planned and financed across the EU?
Challenges	• Lack of specific national health communication budgets, plans and policies indicates that health communication may not have a high profile in the prevention and control of communicable disease across the EU/EEA. • Constraints of limited finance and resources, especially among smaller countries, may result in limited health communication, most often only in the form of crisis communication.
Opportunities	• An opportunity exists to facilitate development of guidelines and tools to support health communication in a consistent way, for example developing health communication strategies and plans. • The perceived success of awareness days for disease prevention (e.g. European Antibiotic Awareness Day), especially among participants from those smaller countries, can be explored and built upon.
	Are there differences in health communication for communicable and non-communicable diseases?
Challenges	• It is reported that health communication for non-communicable diseases is more developed in terms of an evidence base than that for communicable diseases. • Participants indicated that non-communicable diseases are supported by NGOs more than communicable diseases (with the exception of HIV/AIDS).
Opportunities	• To explore the transferability of expertise, capacity, information, best practice and lessons learned in health communication for non-communicable diseases to communicable diseases. • An opportunity for the EU/EEA, and EU organisations such as ECDC, and for WHO to facilitate international and country-specific (national) approaches to health communication and communicable diseases across the EU/EEA.
	What types of health communication are used across the EU/EEA?
Challenges	• Many are reactive and undertaken during a crisis, leading to a perception of overreliance on crisis communication. • A lack of knowledge, expertise and conceptual clarity in the area of health communication[6] was specifically evident with regard to types of health communication used; crisis communication and general health communication was identified as more frequently used, while others such as social marketing were reported to be less used. • Not all current practices in health communication are supported by a strong evidence base.

[6] Types of health communication options included in the e-survey: health communication, crisis communication, health advocacy, health promotion, response to unforeseen events, patient education/communication, health education, education and training, health literacy, risk communication, and social marketing.

Opportunities	• The perceived capacity for and experience of crisis communication in many countries presents an opportunity for the development of this evidence to ensure a more proactive approach to other forms of health communication aimed at the prevention and control of communicable diseases. • To undertake evaluations on the efficacious use of the various types of health communication, including retrospective case-based analysis of previous crises such as SARS in order to develop an evidence base and inform proactive planning for future similar crisis events. • Strengthening research capacity in health literacy, health advocacy and social marketing to determine their effectiveness and limitations in practice in the European context. • Establish a common, consistent and shared glossary for all relevant concepts and competencies within the remit of health communication for the prevention and control of communicable diseases.
	Is there a shared understanding of 'evidence' in health communication?
Challenges	• There appear to be some knowledge gaps in identifying credible sources of evidence for informing health communication activities and clearly defining the term 'evidence', e.g. most participants felt that messages were developed from validated sources such as empirically tested or evaluated practice, but few could identify specified sources of evidence used to inform activities. • Lack of structure in planning of health communication activities from policy to practice.
Opportunities	• To explore a shared understanding of 'best evidence'. • Determine how 'best evidence' can be applied into practice and policy. • Offer platforms that give access to such best evidence, e.g. a shared online interactive health communication resource.
	To what extent are stakeholders/partners and target audiences involved in health communication across the EU/EEA?
Challenges	• A reported lack of participation of key target audiences such as general public and community groups in the development of health communication activities. • A perceived lack of clarity in identifying stakeholders key to the development and delivery of health communication activities and the role and importance of such stakeholders.
Opportunities	• To develop a stakeholder management strategy for carrying out effective communication thus facilitating consistency when collaborating with key stakeholders such as NGOs, policymakers, mainstream media and private industry involved in health communication across the EU/EEA. • To increase participation from the general public and community groups to harness their input in the development and delivery of health communication activities. • Invest in formative research and audience segmentation around behavioural and communication profiling of target groups, in order to effectively engage and involve audiences in the development of health communication strategy and message outputs.
	What channels of communication are used across the EU/EEA?
Challenges	• Print media is widely used in practice while doubts of its effectiveness were expressed. • Lack of knowledge with regard to the applicability and use of new technologies in a public health context.
Opportunities	• To explore what are the most effective channels for dialogue with priority target audiences. • To use these channels and dialogue to inform and shape the development of communications for positive behaviour change and evaluation methodologies. • To explore and exploit the recent proliferation of channels of social media as a potential channel for health communication and its evaluation in the prevention and control of communicable diseases.
	Are there examples of health communication activities that have been used across the EU/EEA?
Challenges	• Limited cross-country use of health communication activities and resources. • The level of activity and capacity varies considerably between disease groups and between countries; however, examples of current health communication activities identified by experts across the EU and EEA countries in this study indicate the existence of a level of capacity.
Opportunities	• Facilitate the sharing of experiences with regard to: development, implementation and evaluation of health communication activities for communicable diseases between countries. • In order to streamline health communication in most countries across the EU, the perceived success of awareness days/events among participants should be explored further and expanded upon based on evidence of effectiveness.
	What is the capacity for the effective use of health communication across the EU/EEA?
Challenges	• Across the EU/EEA region, all the data indicate that there is a discernible knowledge gap regarding education and training provision for health communication skills towards the prevention and control of communicable diseases. • Among the communication experts consulted, few stated that they were academically or professionally trained specifically in health communication. It was also evident that in many instances responsibility for health communication work did not fall to a designated and/or trained health communication expert but usually formed part of a brief for an expert working in another area. Lack of expertise and resources were cited as reasons for the lack of evaluation.
Opportunities	• To identify and disseminate health communication education programmes (both stand alone and component modules of courses) available across the EU/EEA. Identified training needs included the areas of social media and evaluation and in public relations in order to be prepared for dealing with the media, particularly in emerging risk and crisis situations. • Increase awareness and provision of health communication education and training for communicable diseases across the EU/EEA. • In consultation with Member States, explore what core competencies are required for health communicators across the EU/EEA.
	To what extent are health communication activities across the EU evaluated?

Challenges	• Conducting evaluations requires specific skills and resources and there appears to be a knowledge gap around evaluation, including different types of evaluation, among those working in the area. • However, the types of evaluation reported indicate that across the EU/EEA countries, participants have some awareness of outcome, impact and cost effectiveness evaluation. • Many participants indicated that there are no specific national budgets for health communication evaluation.
Opportunities	• In addition to outcome evaluation, there is an opportunity for investment in communication profiling and formative evaluation research. Formative evaluation research serves to answer key questions before the implementation of a behaviour change intervention/campaign. For example these include: What precise behaviour should be targeted? Who are the key target audience(s)? What are the motivators for, and barriers to, changes in behaviour? How are target audiences best reached? This means that evaluation requires active planning and implementation from programme inception to completion in order to contribute to programme success. • To undertake evaluations and impact assessments of health communication campaigns. • Provide guidance with regard to best practice in order to build practice-based evidence for health communication activities in the prevention and control of communicable diseases across EU/EEA Member States. • Conduct research on the systematic use of evidence and evaluation in informing practice, including: – addressing formative, process, impact, outcome and cost-effectiveness evaluations of health communication activities – development of guidelines for assessing the effectiveness of health communication approaches against indicators of success.
These opportunities and challenges are derived from the data collection aggregated report, published as: Doyle P, Sixsmith J, Barry MM, Mahmood S, MacDonald L, O'Sullivan M, et al. Public health stakeholders' perceived status of health communication activities for the prevention and control of communicable diseases across the EU and EEA countries. Stockholm: ECDC, 2012. Click here to access the completed report.	

Online expert consultation

Challenges identified

The following Matrix table 2.2 presents the challenges identified by participants in the e-forum for the use of health communication in the prevention and control of communicable diseases over the next five years [3].

Matrix table 2.2: Challenges

Challenges In your view, what do you think are the main challenges for the use of health communication in the prevention and control of communicable diseases over the next five years?
Improving collaboration and the development of stronger partnerships within countries and between EU and EEA Member States
Collaboration should be improved especially in the current economic crises in order to: • learn from each other's' experiences; • share best practices. In order to address the social determinants of health through health communication, future collaborations should be multi-disciplinary, not only should they involve the health sector or experts from the same field e.g. epidemiology, but also include experts from other fields dependent on the addressed issues. The ECDC European Antibiotic Awareness Campaign was highlighted as a good example of collaboration between Europe and Member States for the following reasons: • It has the same purpose and communication tools. • It is directed from 'one authority' but still depended on local (national) professionals. • Costs are spread between ECDC and national authorities. • Local differences are respected as materials can be adapted to the local context. It was also highlighted that this approach may be more beneficial than trying to create and maintain a big pan-European campaign with tools in every language of the EU/EEA.
Improving coordination and sharing both within countries and between EU and EEA Member States
Sharing experiences and best practices is important: • especially during times of economic austerity; and • in order to avoid 're-inventing the wheel' and unnecessary costs. Coordination at national level • should be improved regardless of the many good health communication activities organised by local communities, regional public administration and national organisations. Coordination at international level: • Many mainstream problems and challenges across Member States are similar, with only some minor national differences, thus more coordination is needed. • Coordination among international organizations is the key for success. Examples of coordinated activities for crises event situations: • WHO Outbreak Communication Guidelines and International Health Regulations. • Lessons learned from the H1N1 pandemic crisis showed that national governments working through a designated coordination body such as the European Commission improve the planning and delivery of an effective response. Overall, it was felt that good inter-organisation and inter-governmental coordination is a key issue during an outbreak.

Establishing and delivering effective health communication

Due to the existing and growing number of communicable diseases that are of concern to EU/EEA citizens, participants suggested the following was needed for effective health communication in the future:
- Transparent and clear communication
- Extensive planning skills
- Sufficient budgets to communicate all year round about relevant topics and bring them to the attention of both the press and public at a moment in time that gives them value
- Undertake research and develop the scientific evidence base
- Reference was made to the development of the Spanish Journal of Health Communication, which was created in 2009 (http://www.aecs.es/revista.html; published only in Spanish).

Interacting and communicating effectively with key audiences

Challenges with regard to communicating with key stakeholders and decision/policymakers
- The critical role of communication between stakeholders responsible for making changes in public health systems and government and policymakers was identified.
- The importance of preparing and disseminating research data (data, reports and analysis) for policymakers.

Challenges with regard to communicating with the general public/citizens for health
- How to respond to the queries coming directly from citizens via lots of channels such as email, telephone, etc.
- One-way communication has been traditionally utilised, but now citizens expect more dialogue to meet their needs.
- Disseminating messages to the media and public during a crisis (best practice).
- Communicating with the public about the important role Europe is playing in the protection of national citizens' health:
  - A lot of legislation and measures are no longer national but European.
  - This results in little interest from the national press because no local politician can be held accountable and journalists have little knowledge about Europe.

Challenges with regard to communicating with journalists and the media for health
- Journalists' lack of background knowledge about communicable diseases.
- Setting the right agenda and getting attention for important topics when it comes to communicable diseases is difficult as the media often chooses to focus on more 'spectacular' health topics.
- The news media sometimes use information that is not peer-reviewed and comes from unverified or untrustworthy sources; this can have the knock-on effect of undermining trust in information disseminated by official sources.
- The news media's tendency to oversimplify complex health issues: many issues are turned into short news items that are presented on several platforms with large headlines.
- Struggle against non-scientific health and curative myths and stories.

Establishing and utilising effective health communication channels including new media

Identified challenges included:
- Increasing importance of social media.
- Growing number of influential health blogs, groups on social media platforms and health websites.
- Speed at which information (official or not) is disseminated.
- These challenges push health communicators to determine new ways of working when it comes to monitoring, reacting to information and engaging in discussions with the public.

Identified 'new media' challenges:
- How best to use these forums effectively.
- New media that have not been evaluated for their effectiveness.
- Difficult to keep up with the development of new media.
- Difficult to convince the scientists and managers that these platforms are necessary for communicating about health and communicable diseases to the public.
- Increasing uptake and diffusion of technology for health communication may be contributing to inequalities (digital divide).

Varying levels of capacity for health communication within and across EU and EEA countries

A few countries recognised that:
- health communication use and implementation is not fully developed; and that
- there are varying levels of health communication which bring challenges and different outcomes by region.

At European level participants noted some institutions across the European region are investing in the development of health communication. Examples given include:
- ECDC (present research in their publications); and the
- Council of Europe (promote well-developed media campaigns based on best evidence).

Education and training should be further strengthened in:
- national governments;
- local communities; and in
- other sectors such as tourism, industry, education, social services, etc.

Availability of funds and sustainability

Limited funding and resources due to the economic climate:
- In some cases this issue may threaten the sustainability of ongoing projects and activities.
- It will probably lead to smaller budgets for health communication.

The support of EU funds was also acknowledged for some health communication activities such as structural funds of the EU (mainly the European Regional Development Fund).

Health communication messages and the political environment

Communicators need to be very sensitive to possible political repercussions of communication messages:
Institutes which form part of ministries may be obliged to have messages vetted from a political point of view.

Specific topic areas of communicable diseases that may be challenging for health communication
Antibiotic strategies • Having a balanced antibiotic policy with changing infectious agents (antibiotic resistance problem). • Few newly developed antibiotics. **Vaccination strategies** • Conflicts between effective vaccination strategies and anti-vaccination campaigners.
These challenges are derived from the e-forum consultation report cited as: Doyle P, Sixsmith J, Barry, MM. Online consultation results – enhancing the development of health communication for the prevention and control of communicable diseases in the EU and EEA countries: a consultation with key stakeholders. Stockholm: ECDC; 2012. [Unpublished.]

Opportunities identified

The matrix in table 2.3 presents the opportunities as identified by participants in the e-forum for the use of health communication in the prevention and control of communicable diseases over the next five years [3].

Matrix table 2.3: Opportunities

Opportunities In your view, what do you think are the main opportunities for the use of health communication in the prevention and control of communicable diseases over the next five years?
Opportunity for more sharing, coordination, collaboration and development of strong partnerships both within countries (e.g. with NGOs) and between EU and EEA Member States
Sharing both within and across Member States: • Sharing experiences at international level, particularly for sensitive issues, would help convince people that other countries are also taking the same preventative measures. • Sharing of resources, knowledge, lessons learned, best practices and the development of common strategies for health communication in communicable diseases. For example with regard to the human papilloma virus vaccination, it was expressed that 'some countries (for example, the UK) were more experienced and had better prepared public awareness campaigns that was successful to them than other less prepared countries where results were disappointing' (P2)
Reinforce, develop and improve cooperation and coordination both between agencies and organisations within a country and across the EU and EEA countries: ***International level*** More collaboration between Member States under the coordination of EU institutions and agencies could provide an opportunity to: • set the agenda; • establish priorities; and • counter untrustworthy information on communicable diseases. ***National level*** Continue and reinforce existing support by EU agencies in order to: • strengthen national communicators' knowledge about communicable diseases (as ECDC already does); • help them to develop national and common strategies in getting official information out to both press and public; and • build knowledge and change behaviour. Support and coordination of training for national communicators which could be an opportunity to: • create more knowledge and understanding for the important role the EU is playing in the protection of citizen's health (including citizens and journalists around Europe); • build better networks and trust between national and European communicators and the press; and • ensure there are common strategies and sharing of best practices.
Opportunity through favourable communication landscape
Increased levels of interest by the public, media and politicians in all issues relating to health could provide the opportunities to: • place communicable disease issues on the agenda; • have discussions and increased media coverage; • close the gap between the scientific knowledge and information communicated by the media; • improve the knowledge of communicable diseases among journalists and media professionals via training and education. A few examples of inaccurate information on communicable disease disseminated by the media were provided by participants.
Opportunity through new media
Participants noted that websites and applications as well as social media such as Facebook, Twitter, and YouTube offer many opportunities to reach the public and specialists. A future opportunity is to develop the use and application of new media for health communication and communicable disease issues; this should include the development of social media strategies and the sharing of best practices.
Opportunity for strategic development of health communication
The following were outlined as strategic opportunities for the future development of health communication: • Professionalise communication activities on communicable diseases. • Shift the approach from classic information campaigns to initiatives underpinned by behavioural change science. • Health communication should move away from a top-down approach to informing citizens to a more citizen-centred approach that tailors the information to needs, engages in discussions, and builds trust with the public. • Increasing development of the evidence base for health communication for communicable diseases to inform best practice. • Develop health communication activities strategically including national health plans that encompass a prevention approach. – These work plans should be 'developed and validated by all key stakeholders including the government and be regularly adapted depending on the circumstances' (P7) – Priority national programmes were outlined as important opportunities to develop specific health communication plans and organise campaigns.

These opportunities are derived from the e-forum consultation report cited as:
Doyle P, Sixsmith J, Barry, MM. Online consultation results – enhancing the development of health communication for the prevention and control of communicable diseases in the EU and EEA countries: a consultation with key stakeholders. Stockholm: ECDC; 2012. [Unpublished.]

Identified desirable actions

Matrix table 2.4 presents the actions identified by the participants in the e-forum as desirable to enhance and support the future development of health communication in the prevention and control of communicable diseases over the next five years [3].

Matrix table 2.4: Desirable actions

Desirability What would you most like to happen to enhance and support the future development of health communication in the prevention and control of communicable diseases over the next five years?
Enhanced coordination within countries and across all EU and EEA Member States
• Enhanced coordination, specifically between political institutions (for example, ministries, governments) and professional institutions (for example an institute of public health). ECDC could undertake a lead and coordinating role. • Enhanced coordination was cited as being desirable for the following reasons: – Would be more effective and cost-efficient, especially due to the current economic crisis. – Some participants acknowledged that their country has a fragmented approach to health communication activities which they feared would lead to confusion amongst the public and a reduction of trust in official sources of health information. • Suggested ways to possibly enhance coordination in the future: – Develop new or strengthen existing professional networks across the EU and EEA countries. – Professional networks were identified as crucial for the successful managing of a crisis. – One participant expressed a concern as to the actual effectiveness of current networks.
Working together
a) Working together through enhanced partnerships, collaborations and cooperation within countries and across EU and EEA Member States Participants stated that working together, sharing experiences, learning from each other and discussing challenging situations would: • enhance and support common health communication activities; • improve the quality of health communication; • lead to stronger messages, especially if they were distributed by more actors/organisations. Better cooperation amongst medical doctors and between political and professional institutions was cited as being crucial for successful communication. b) Working together to share knowledge, expertise and resources within countries and across EU and EEA Member States • Working together regardless of varying priorities and cultural contexts within and across EU Member States. • The basics for communication of health messages, especially for infectious diseases, are the same and may only need to be adapted slightly for local contexts. For example, most countries develop their own campaign for the influenza vaccination rather than sharing these resources. Participants highlighted that 'sharing' for health communication in the prevention and control of communicable diseases could potentially: • limit costs; • facilitate cross-border approaches for common challenges (e.g. for the anti-vaccination lobby in Europe); and • ensure there are coherent/common health communication messages and strategies.
Health and health communication should be integrated into all policies and particularly public health policies and strategies
• Health should be included in all policies in order to address the social determinants of health. • This process should involve other sectors. • More coordinated policy-making will lead to more understandable and coherent communication. Health communication is currently a neglected field, and integration of health communication into all policies was seen as desirable for the future: • Many countries acknowledged that health communication is a rather neglected field. • Frequently, key stakeholders involved in developing public health strategies fail to see the necessity of an accompanying health communication strategy. • In the few cases where there are provisions for health communication, they are usually fragmented, expensive and unsuccessful.
Improved communication
Improved communication between decision-makers and experts for communicable diseases: • Most of the important actions needed for the development of health communication result from decisions of key stakeholders, including decision-makers. Improved communication between medical doctors: • Enhanced communication and effective communication channels for medical doctors.
Increased capacity for health communication in the prevention and control of communicable disease
• Training of people working in the areas of health communication and communicable diseases.
Enhance and develop health communication

Utilise a more citizen-centered approach in order to enhance health communication on communicable diseases; not only offering information considered useful by the authors but reacting and meeting the real needs of the public.

Active engagement through new media. Government communication on health should:
- learn how to engage actively with the public through social media; and
- become more active in monitoring and detecting new trends and topics.

Investment in the following specific health communication areas would be desirable for the future:
- Ethics: observe ethical boundaries
- Transparency: expand transparency
- Accountability: strengthen accountability in such fields as privacy, risk assessment and health impact assessments
- Health literacy: the promotion of health literacy is critical to active and informed participation in health and healthcare
- Developing international recommended guidelines, validated interventions, and a network of focal points
- Evidence-informed health communication messages and applying this evidence to policy and practice.

Have effective and successful vaccination campaigns

This was seen as important and desirable due to:
- a lack of understanding of vaccination complexity among the general population
- a strong and increased anti-vaccination lobby in recent years, which has an influence on public opinion, particularly through the media.

These identified desirable actions are derived from the e-forum consultation report cited as:
Doyle P, Sixsmith J, Barry MM. Online consultation results – enhancing the development of health communication for the prevention and control of communicable diseases in the EU and EEA countries: a consultation with key stakeholders. Stockholm: ECDC; 2012. [Unpublished.]

Feasible actions identified

The following Matrix table 2.5 presents the actions characterised by the participants in the e-forum as practical steps that could be taken to enhance and support the future development of health communication in the prevention and control of communicable diseases over the next five years [3].

Matrix table 2.5: Feasibility

Feasibility Realistically, what practical steps can be taken to enhance and support the future development of health communication in the prevention and control of communicable diseases over the next five years?
Support and undertake research (including evaluation)
• Supporting a research agenda (including evaluation) that would give priority to health communication. • A needs assessment informed by mapping the general population's knowledge and perceptions of communicable diseases could lead to better and more focused planning of health communication campaigns and interventions.
Create a health communication platform for public health stakeholders to exchange and discuss communicable disease
• Should be developed within formal structure such as a public health authority or ministry of health. • These public health stakeholders should include those from both public and private sectors. • A health communication platform would help to facilitate a mutual understanding of key public health issues in society.
Convene a multidisciplinary communication team to plan and implement a holistic health communication strategy for communicable diseases
• Should be convened under the auspices of a formal structure such as a ministry of health. • The team should consist of representatives of organisations/agencies involved in communicable diseases and include scientists and communication experts.
ECDC should take a leading role
• ECDC should take a leading role in communication activities during health threats situations, ensuring that early messages in e.g. outbreaks are correct. • ECDC should take a leading role in getting Member States together to share information.
Conduct education and training courses specifically on health communication
Promote community advocacy and the citizen's role when using health communication
• Improving citizen empowerment • Sustained health communication
Place health communication experts at government level
• In order to facilitate evidence-informed decision-making while taking account of health communication practice.
Develop a network of focal points at hospitals and healthcare centers
• This would allow better sharing of results and successful case studies.
These identified feasible actions are derived from the e-forum consultation report cited as: Doyle P, Sixsmith J, Barry MM. Online consultation results – enhancing the development of health communication for the prevention and control of communicable diseases in the EU and EEA countries: a consultation with key stakeholders. Stockholm: ECDC; 2012. [Unpublished.]

Viable actions identified

Matrix table 2.6 presents the actions characterised by the participants in the e-forum as viable steps that could be taken to enhance and support the future development of health communication in the prevention and control of communicable diseases over the next five years [3].

Matrix table 2.6: Viability

Viability What steps can be taken to enhance and support the sustainability of health communication in the prevention and control of communicable diseases over the next five years?
The following were outlined in order to enhance and support the sustainability of health communication in the prevention and control of communicable diseases over the next five years: • Adequate human and financial resources and support. • Evidence-informed communication by undertaking research and ongoing evaluation. • Retaining trust with the public. • Sharing of best practice. • Education and training by experts to enhance capacity. • Citizen-centred approach, for example the inclusion of target audiences in the planning of health communication activities.
These identified viable actions are derived from the e-forum consultation report cited as: Doyle P, Sixsmith J, Barry MM. Online consultation results – enhancing the development of health communication for the prevention and control of communicable diseases in the EU and EEA countries: a consultation with key stakeholders. Stockholm: ECDC; 2012. [Unpublished.]

Conclusion

The inclusion of key stakeholders in a consultation process concerning the development and enhancement of health communication activities for the prevention and control of communicable diseases in Europe has proved both feasible and viable through use of a mixed methods approach, including an online interactive process.

Participants from across the primary information gathering [1, 2] and online consultation [3] activities identified the value of improved collaboration, partnership development, coordination and sharing of experiences, knowledge and best practices concerning the most effective use of health communication for communicable diseases. This was also identified as a challenge for many reasons and particularly due to the complexity of the political, administrative, structure, linguistic and cultural diversity of the EU/EEA.

In today's highly connected society where accurate and inaccurate information moves with equal velocity, establishing and utilising effective health communication channels with target audiences was seen as both a challenge and opportunity for health communication practice, specifically in relation to new media. It was felt by stakeholders that there is the beginning of a shift from expert driven, one-way communication to one of dialogue and exchange with the recognition of the centrality of citizens to the process. In addition, interacting and communicating with key audiences was highlighted as a challenge, in particular with regard to the importance of policymakers and the media in the development of health communication activities.

It was also evident from the consultations that there is great variability between countries in the range and level of health communication activities undertaken; substantial variability also exists in the levels of capacity for the effective application of health communication for the prevention and control of communicable diseases. Gaps identified included: a lack of education and training; underuse of evaluation; and limited resources to develop, effectively use, and evaluate health communication in the prevention and control of communicable diseases [1, 2].

Furthermore, the role of evidence as a foundation for effective health communication developments and as a basis for building public trust was recognised in this consultation, highlighting the need for the evidence base in Europe to be strengthened. This is supported by previous project outputs, specifically the synthesis of evidence which identified that there is a limited evidence base focusing on health communication for the prevention and control of communicable diseases in the European context [4-12].

The results provide valuable insights concerning the potential for capacity development at a European level. The implications of these results along with those of all other project outputs, particularly the SWOC analysis, will be considered in the next chapter as they inform capacity development for health communication in the prevention and control of communicable diseases.

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Chapter 3
Informing future directions in health communication in the EU and EEA

Introduction

This chapter considers the implications of the findings from the SWOC analysis for the future development of health communication for communicable disease prevention and control in the European region. The chapter draws together the key findings and issues that were identified by European key stakeholders in the consultation phases of the Translating Health Communication Project [1-3] and the reviews of the evidence base [4-12]. A capacity development framework is used to consider future strategic actions required for strengthening capacity in Europe to develop evidence-informed health communication for communicable diseases.

'Capacity' has been defined as the ability to carry out stated objectives [13, 14], and capacity development has become a key public health strategy in achieving improved and sustained health status [15, 16]. Capacity development can contribute to health gain through the development of sustainable skills, organisational structures, resources, and commitment to health improvement [17]. Capacity development amounts to more than training or technical assistance and looks to develop knowledge, skills, commitment, structures, systems, and leadership to improve health. Actions have been identified in order to improve health across the levels of: advancing knowledge and skills among practitioners, expanding organisational infrastructure and support, and developing community partnerships for health [18].

Thus capacity development provides a useful framework through which to consider the main findings from the Translating Health Communication Project and to discuss the most effective strategies for strengthening capacity for health communication for communicable diseases in the EU and EEA. The *Review of public health capacity in the EU* [19] developed a conceptual framework for mapping capacity in public health, and the dimensions of this framework can usefully be applied to consider the implications of the project findings. These dimensions are: organisational structures, partnerships, financial resources, leadership and governance, knowledge development, and workforce. The findings from the SWOC analysis and their implications for future development will be considered under each of the dimensions of public health capacity development. This moves the project outputs from knowledge generation towards action.

Capacity development

Organisational structures

The infrastructural ability of the system to effectively, efficiently and sustainably exercise its functions and contribute to the goals of those involved in health communication activities.

An organisation's structures, processes and management systems all influence the extent to which the organisation can contribute to capacity-building [20]. There are a number of challenges in supporting the development of health communication capacity across the EU and EEA countries, not least the diversity of the political and administrative systems, the diversity of languages and cultural contexts, and the differing communicable disease priorities within and between the countries. The institutional capacity for health communication for communicable diseases is hampered by a lack of clarity as to where the responsibility for this lies in each country, and organisations concerned with health communication may also operate at a national and/or a transnational or European level. It was also noted during the consultation that stakeholders may have different political priorities on the same issues at a national and European level, which can result in a difficult politicised environment [1].

An issue which arose repeatedly throughout the primary information gathering stages was that the stakeholders with the responsibility for health communication are fragmented, and responsibility falls within different ministries and/or organisations [1]. Such fragmentation results in an absence of a shared national profile of health communication activities.

The further development of health communication for the prevention and control of communicable diseases in the European context requires greater clarity about where the responsibility lies in each country in combination with specific health communication plans and policies. Also, the perceived fundamental disconnect between health promotion and disease prevention and health protection was identified as impacting on the effectiveness and efficiency in this area [1]. Health protection was characterised as being specifically focussed and dominated by bio-

medical personnel who are unlikely to have a communications background; while health promotion was characterised as involving communicators and public health specialists working on lifestyle and environmental challenges.

Health communication for non-communicable diseases may be a more developed field than health communication for communicable diseases. Stakeholders suggested that the expertise and capacity developed in the non-communicable diseases sector could be of value to those working in the area of health communication for communicable diseases. Stakeholders commented that crisis communication and the capacity to respond to emergencies was more developed than proactive and planned health communication and this view was supported by some of the literature [9].

The role of trust and reputation management for communicable diseases health communication is increasingly being recognised as a strategic function requiring long-term planning and evaluation [12]. Such planning and evaluation is vital to organisational reputation:

> [There is a] growing awareness that failure to protect and promote reputational capital and public trust and to integrate these intangible assets alongside more visible and traditional risk reduction measures can undermine organisational reputation (p. 12) [12].

Trust and reputation management is an issue for both national and European agencies, and building trust with the public is essential for risk communication to be effective. However, this is difficult to achieve in practice. A review of the literature identified some common elements of good practice in trust and reputation management:

> The most common elements of good practice identified in the review were long-term planning for crisis events; assuring and monitoring consistency of messaging; credible, highly competent spokespersons willing to frequently engage with media and stakeholders; and a visible demonstration of the technical competence, integrity and transparency of the organisations responsible for communicable disease control [12].

At present, the literature is dominated by a focus on crisis communication, mass (undifferentiated) communication and communication to support technical functions. Future strategic development of trust and reputation management in population-level communicable disease prevention and control will require a strengthening of the evidence base and the development of a planned approach. This approach should facilitate the coordination of communication functions and objectives, alongside organisational capacity building in areas such as risk communication, environmental scanning and mass media relations.

Inadequate population health literacy limits people's ability to access and use health information [4]. Broad definitions of health literacy locate the issue not just with individuals but also with healthcare professionals, policymakers and with society [4]. Likewise, physicians are a critical component of the structure through which health communication is channelled and, therefore, their awareness of health literacy issues is critical. The US Department of Health and Human Services label the ability of healthcare professionals and organisations to enhance positive health outcomes by recognising 'the cultural beliefs, values, attitudes, traditions, language preferences, and health practices of diverse populations' as cultural competence [21]. Such cultural competence includes communication which is linguistically and culturally appropriate [21]. Programme delivery structures should be sensitive to the restrictions that some individuals may experience in accessing health messages [7] and also be aware that health literacy comprises more than functional literacy, i.e. reading and writing skills [4]. The development of population health literacy policies and interventions at a European level would represent a strategic advance on this component of health inequality. It is also clear that health literacy must be embedded in all population-level health initiatives at both a national and European level.

Health communication activities will have most success if they are incorporated into health policies and strategies from the time at which they are being developed and this will require greater structure in planning health communication activities from policy to practice than currently exists. The capacity of the organisational structures within and between countries in the EU and EEA countries is uneven. However, a level of capacity does exist, as does best-practice evidence, particularly in the related areas of crisis communication and health communication for non-communicable diseases, and this capacity and expertise could be mined. Evidently, priority should be given to the exploration of the transferability of knowledge in relation to health communication for non-communicable diseases to communicable diseases.

The diversity of political and organisational structures within EU and the EEA, as well as being problematic, also presents a unique opportunity for Member States to share ideas, resources, experiences and expertise, enhancing collaborative partnerships and professional networks.

The capacity for health communication for communicable diseases would be significantly improved by enhanced collaborative working and greater coordination at a European level. It was clear from the consultation that stakeholders envisaged that European agencies, such as ECDC, would take a proactive role in strengthening capacity for health communication for communicable diseases [1-3].

Partnerships

The establishment of sustainable and effective collaboration between organisations to achieve effective health communication.

A useful definition of partnership is that it is a mutually beneficial and well-defined relationship entered into by two or more organisations to achieve common goals [21]. Consultation with stakeholders identified a belief that no common understanding existed of what needs to be achieved to effectively develop health communication.

Partnerships facilitate the optimal use of resources, including skills and experiences. Capacity-developing partnerships are those that increase the capacity of the partnership members to work together [20]. Baillie et al. [20] argue that successful capacity developing partnerships are made up of a diverse membership who share a vision and who communicate effectively with each other to readily exchange available resources and skills. Partnership relationships may comprise different levels of involvement and commitment ranging from networking, coordinating, and cooperating through to collaboration.

A basic barrier to partnership was perceived to be the lack of clarity as to the identity of key stakeholders in the development and delivery of health communication activities across the EU/EEA, which militates against the establishment of sustainable and effective collaborations. This lack of clarity exists between countries, within countries, and across the different stakeholder groups. The identification of these key stakeholders would function as a preliminary step to the development of a strategy and, through the strategy, the development of a shared vision of health communication for communicable diseases in the EU and EAA. Such a strategy is required to enhance collaborative working and strengthen partnerships and professional networks among those working in the area of health communication and communicable diseases within countries and across all Member States. Such a strategy would usefully incorporate the widest range of stakeholder groups including NGOs, policymakers, mainstream media and private industry as well as informal partnerships and alliances and partnerships, and professional networks among those working in the area of health communication and communicable diseases within countries and across all Member States. Sustainable communication with organisations involved in health communication for non-communicable diseases could facilitate establishing networks to explore the transferability of expertise, capacity, information, best practice and lessons learned in health communication for non-communicable diseases to communicable diseases.

However, the consultations identified that a degree of partnership working is already taking place. Participants reported that, at national level in some countries, health communication experts meet annually via meetings and conferences to discuss public health issues. Professional networks were seen as crucial for the successful managing of crisis situations. While the existence of current EU health communication networks was acknowledged as having a certain value, it was also suggested that they lack impact on key stakeholders at the national level [3].

At a European level, the World Health Organization's European Immunisation Week and the ECDC's Antibiotic Awareness campaign were identified as good examples of collaboration between European agencies and individual countries. The identified strengths of ECDC's Antibiotic Awareness Campaign included the fact that it was directed by one organisation and had a common purpose and communication tools but was also adaptable to local contexts and respectful of local differences; that the costs were spread between ECDC and the national authorities was also cited as a positive feature [1]. This campaign and similar may serve as a template for further collaborative initiatives. Participants highlighted that 'sharing' for health communication in the prevention and control of communicable diseases could potentially limit costs, facilitate transnational approaches and ensure a commonality of health communication messages and strategies across Europe [1-3].

Sharing of experiences and knowledge between countries can contribute to the development of capacity for such activities in a relatively cost-effective manner. There are many challenges to the establishment and maintenance of productive cross country partnerships for health communication for the prevention and control of communicable diseases in Europe, including the diversity of culture, health service systems and language. Nonetheless, during the consultations, stakeholders expressed the views that regardless of varying priorities and cultural contexts within and across EU Member States, the sharing of knowledge, experiences, resources, expertise, strategies and ideas nationally and internationally was considered desirable for the future of health communication for the prevention and control of communicable disease, especially in view of dwindling resources [1-3].

The non-communicable disease sector was said to partner with high profile individuals to 'champion' causes to an extent that the communicable disease sector does not. Cairns et al. [10] noted that credible and trusted champions for immunisation serve both to raise awareness of the issues and help to build support and trust in the efficacy and safety of vaccination. Opinion formers can be influential and can appeal to different audiences. D'Eath et al., [5] cited literature that suggested that advocates had very successfully raised the profile of certain communicable diseases through the recruitment of ambassadors to advocate for their cause. High profile individuals equipped with, and willing to deliver, key messages are valuable and unique resources and health communicators in the field of communicable diseases could usefully cultivate such advocates. Similarly, the research identified the perception that non-communicable diseases are supported by NGOs in a way that, other

than HIV, communicable diseases are, generally, not. The promotion of sustainable and effective collaboration between relevant stakeholder groups may increase the level of NGO support for communicable diseases.

The review of social marketing for the prevention and control of communicable diseases cited data that identified a promising trend in partnership working. The most frequent partnership was with community-based organisations. The reviewers identified the recommendation that better reporting on partnership development is needed in order to enhance understanding as to how partnerships work and what outcomes are associated with such partnerships [6]. Partnership building would benefit from the inclusion of the general public and community groups to incorporate the perspective of key target audiences for health communication activities. The importance of partnerships with community groups reflects the new paradigm of citizen-centred health communication. The importance of identifying stakeholders was noted earlier in relation to professional stakeholders however, the development of citizen-centred health communication demands, also, the identification of citizen stakeholders as active partners.

An initial step towards the creation and maintenance of formal partnerships would be the creation of an up-to-date directory of key people working within the areas of health communication and health protection in Member States in order to facilitate networking. A platform that would facilitate both face-to-face and electronic engagement opportunities to share, discuss and reflect on health communication information and approaches would also be an important resource. The willingness of stakeholders to engage in the online consultation component of this project indicates a significant potential for the development of a vibrant virtual community of practice. A strong, linked professional network of communicators and experts within countries and across Europe will provide a useful resource to drive the strategic and consistent development of health communication for communicable diseases.

Financial resources

The generation and allocation of financial resources necessary to carry out health communication activities.

The stakeholder consultation identified that no country has a specific budget for health communication [1]. Funding for health communication is allocated from national health budgets and/or government programmes. Governments may fund directly or indirectly through national institutions and/or specific disease programmes. Such funding is particularly limited in smaller and new EU countries, and participants from these countries reported few resources to undertake health communication activities outside of crisis communication. The lack of specific budgets was perceived by the stakeholders as evidence of the low profile of health communication in the prevention and control of communicable diseases. Stakeholders identified sources of funding including from:

- international organisations such as ECDC, WHO, UNICEF and the Global Fund;
- the European Commission (mainly in crisis situations);
- social health insurance systems;
- non-governmental organisations;
- national health services; and
- grants, lotteries, and international donors.

The extent to which stakeholders reported funding from the private and commercial sectors varied between countries. Whereas some participants reported that these sectors financed some or many health communication activities, others indicated that their country had regulatory controls which made it difficult for these sectors to provide finance. The most commonly reported involvement of pharmaceutical companies was in relation to vaccinations and, more specifically, in relation to promotional events and activities [1].

Some stakeholders expressed concern that the current era of austerity may present a challenge even to the sustainability of ongoing projects and activities. However, the challenge of an economic crisis was also characterised by some as an opportunity to develop stronger partnerships and collaborations to make more effective use of available funding. Thus while stakeholders were clear about the importance of the availability of adequate financial resources, it was not necessarily considered to be the top priority. Once again, facilitated sharing of resources such as core materials and knowledge and the use of initiatives such as the European Immunisation Week were seen as an effective and efficient use of scarce financial resources.

Greater use of the opportunities offered by technological advances was also suggested as a cost efficient use of limited resources. Stakeholders reported that many health communication messages are still disseminated in the form of printed materials [1] and recommended investment in cheaper online and social media channels. However, care must be taken to avoid widening health inequalities through an unevaluated move towards electronic channels as this could exclude populations already disadvantaged by low literacy levels, socio-economic status, or transient lifestyle [7].

As has been noted, evaluation of health communication is particularly underdeveloped, and lack of financial resources was cited as one of the reasons for this [1]. The evidence review of health advocacy [5] highlighted the historic lack of evaluation in that field as being replaced by a new expectation from funders that interventions and activities will be subject to systematic evaluation often at the formative, process and impact/outcome level. This

practice may well provide a lead for the wider health communication field, and a greater use of economic evaluation will equip policymakers, health communication planners and analysts with the evidence to determine how best to distribute their budgets among various health communication activities [1].

Consultation with the stakeholders identify that the way forward for the best use of resources for health communication lies in ring-fenced budgets but also in a more coordinated approach to spending and a sharing of resources across agencies and countries.

Leadership and governance

The ability and willingness of governments to critically analyse their work and accordingly search out opportunities to improve health communication by developing and implementing effective campaigns and initiatives and by expressing qualities in leadership and strategic thinking.

The consultations identified that there was a lack of clarity about where responsibility for health communication rested both nationally and at a European level. With respect to risk communication, this perceived lack of clarity was seen to result in a deficit of strategic planning for health communication for communicable diseases and a focus on reactive crisis communication rather than planned health communication [9].

Stakeholders recommended that in order to maximise its impact, health communication should become an integral part of national policies and strategies. To the extent to which health communication was perceived to be on the agenda of national and pan-European organisations, funders and policymakers, it was predominantly with reference to non-communicable diseases and stakeholders considered that efforts should be made to increase the priority status of health communication for communicable diseases. However, the findings from the stakeholders' consultation suggest that countries require assistance in the development of their national strategies and plans for health communication for the prevention and control of communicable diseases. Likewise, there is little evidence of the extent to which, if at all, health communication activities impact on health policy. In one review, for example, there was an explicit recommendation that social marketers should consider the integration of a policy component in interventions, and should report their findings [6].

During the consultations, the stakeholders reported their opinions that the development of formal structures within public health authorities or Ministries of Health would enhance and support the future development of health communication in the prevention and control of communicable diseases over the next five years. Public health stakeholders from both the public and the private sectors could be convened within the auspices of such a structure to plan and implement a holistic communication strategy. Teams should comprise of representatives of organisations involved in communicable diseases and include scientists and communication experts. The provision and development of a health communication platform would help to facilitate a mutual understanding of key public health issues in society. For this to be effective, clearly defined responsibility structures and pathways are required.

Effective leadership and governance at national and European level would facilitate the development and sharing of coherent and consistent messages. Such messages can then be adapted and delivered appropriately across different contexts and countries. Events such as awareness days, for example those concerning prudent antibiotic use, were perceived to be successful, particularly by representatives from smaller countries. Thus, it was recommended that such events should be further explored and built upon. Clearly, such developments will require a heightened level of strategic coordination and partnership over that which currently exists.

Participants in the consultations called for health to be integrated into all policies of countries, although they acknowledged that health communication was a rather neglected field in this regard. A number of countries have incorporated health literacy objectives into strategic national policies [4] and the rapid evidence review of interventions for improving health literacy reported a call for the concepts which underpin health literacy to be built into existing health improvement initiatives and programmes thereby facilitating a more strategic approach to health communications. Stakeholders identified their belief that such coordinated, cross-sectoral policy-making would lead to a more coherent approach to health communication, which would be better placed to address the social determinants of health.

The importance of including the public in health communication teams was also emphasised by the stakeholders during the consultation [1]. The emphasis on the inclusion of the public may be indicative of a shift from top-down approaches to more citizen-centred approaches including social dialogue and social mobilisation. Citizen-centeredness was characterised as being more responsive to the real needs of the public. Whereas health communication traditionally comprised 'top-down' one-way communication, many citizens now had expectations of a dialogue [1,3] and, crucially, access to myriad sources of health information. Health communicators should now become more responsive to the public, tailoring information, engaging in discussion, and thereby building trust with the public [3].

Such approaches may be more amenable to, and more powerful in, addressing health communication to minority and hard-to-reach sectors of the population. Minority and hard-to-reach groups are particularly vulnerable to communication inequalities which act as barriers

> to obtaining and processing information, in using the information to make prevention, treatment and survivorship-related decisions, and in establishing relationships with providers all of which impact prevention and treatment outcomes. Communication inequalities are a disturbing, yet potentially modifiable, counterpart to health disparities and, may have a profound and invidious impact on health outcomes [22].

Therefore, there is an onus on health communicators to consider how best to reach those at risk of being bypassed by health communication. During communicable disease outbreaks, minority populations are disproportionally affected [9]. Except in relation to health advocacy [5] there was little evidence across the reviews of health communication interventions targeting disadvantaged or hard-to-reach groups [4, 6, 10] and thereby working to reduce health inequalities. In fact, disadvantaged groups were reported to have been excluded from some interventions [4]. Little is known about such groups, including about their general health beliefs [9]. Likewise, the responses of the key stakeholders in the consultation indicated that the main target audiences for health communication activities in the EU and EEA are health professionals, followed by the general public and patient risk groups, and did not indicate any targeting of people in minority and hard-to-reach groups [1]. It is clearly imperative for leaders, governments and organisations to be mindful of the impact of future health communication and campaigns on minority and disadvantaged groups and implement strategies designed to reduce health inequalities. Participants in the online consultation recognised the importance of health professionals as not just a priority audience for health communication but also as having an intermediary role in communicating health messages to the public including potentially those in disadvantaged and /or hard-to-reach groups [3].

Stakeholders perceived that campaigns for communicable diseases were limited in their objectives and methods. A more strategic approach, it was suggested, would involve more strategic objectives focussing on disease eradication. Strategic planning would also result in more efficient and effective intervention and evaluation development. For example, a multitude of interventions to increase the uptake of immunisations have been implemented across Europe and yet the sample sizes in most are too small to allow for conclusions to be drawn [10]. Therefore, an accessible database of completed interventions and a commitment to build on prior knowledge and experience would result in the development and expansion of an evidence base. Strategic development could also include multi-centred trials using comparable methods and measures, coordinated across countries, resulting in larger sample sizes and data amenable to meta-analysis.

Stakeholders suggested a need for an international or European agency, such as ECDC, to provide leadership for health communication including by assisting countries to develop their own national health communication strategies and plans [3]. Such leadership was also seen as providing coordination during a crisis and supporting countries with data, surveillance, risk assessment, and communication messages.

Knowledge development

The expansion of the knowledge base that supports evidence-informed policymaking at all levels, fosters the development of new research and innovative solutions to problems and establishes fruitful partnerships between research centres and academic institutions.

A limited evidence base for health communication exists although with a paucity relating to health communication for communicable diseases within the European context.

Although there is a degree of conceptual clarity about many of the important concepts in health communication, the level of knowledge is underdeveloped in other areas. Nine evidence reviews were undertaken for the Translating Health Communication Project and these found that while there was a degree of conceptual agreement evolving about the concepts of health literacy [4], health advocacy [5], the promotion of immunisation uptake [10] and behaviour change [11], there was a more limited consensus and/or understanding about the concepts relating to social marketing [6], health information seeking [7], risk communication [9], campaign evaluations [8], and trust and reputation management [12]. It was noted that in respect of risk communications, some of the lack of conceptual clarity may be attributed to the diversity of disciplines and theoretical models which should be integrated across the disciplines [9].

The lack of a comprehensive, common, consistent and shared glossary for relevant concepts and competences relating to health communication for communicable diseases in the EU and EEA is significant, and indicates the lack of a European evidence base. The research also identified knowledge gaps with regard to determining credible sources of information and even defining the term 'evidence'. For example, the majority of participants in the stakeholder survey felt that messages were developed from an evidence base; however few identified actual sources of evidence used to inform activities [1].

A wide variety of interventions are called 'health communication campaigns' and the evaluations of such interventions include: systematic and exploratory reviews, experimental and randomised, non-randomised, time series, multiple method, longitudinal, before-after, cross-sectional, content analysis, and cost-effectiveness.

However, most of the interventions are subject to criticisms about the weakness of the evaluation study designs, small sample sizes, lack of control or comparison groups, lack of theoretical foundation, underuse of formative or process evaluation, lack of reference to capturing unintended effects, and evaluation aims and outcomes that do not correspond with campaign objectives [8].

Behavioural or social theories are considered an important tool in the design, planning and evaluation of effective behaviour change interventions and programmes. A systematic review of the evidence for the effectiveness of interventions that use theories and models of behaviour change towards the prevention and control of communicable diseases [11] identified 61 evaluations of interventions for the prevention/control of communicable diseases that used a theory or model. However, the included studies did not report sufficient detail on communication-based indicators of change to draw any inferences or conclusions on outcomes and the review highlighted a need for further research in this area with a consistency that would allow for meta-analyses.

However, the essential components of an effective health communication campaign have been codified by a number of organisations, including the National Cancer Institute of the US Department of Health and Human Services, the WHO, and ECDC. These key steps in health communication campaigns are consistently agreed to comprise:

- setting goals and objectives;
- identifying target audiences;
- identifying barriers;
- developing and testing key messages;
- producing materials and tools;
- reaching the target audience and;
- assessing campaign effectiveness [8].

Likewise, the research identified a significant amount of useful tools often in the form of toolkits, templates or guidelines. ECDC have developed communication toolkits, which also provide information on how to develop specific health communications campaigns [23].

The *Overview of health communication campaigns* developed by the Centre for Health Promotion at the University of Toronto provides a hands-on 12-step process for developing health communication campaigns [24]. The Crisis Emergency and Risk Communication (CERC) model developed by the US Centers for Disease Control and Prevention (CDC) is variously described as a model, tool, training module, and framework [25]. CERC offers risk communication practitioners course materials, online training, on-site training, and accredited certification. It also provides health communicators with steps for communication over five phases of an emergency situation caused by an outbreak or a threatened outbreak of a communicable disease. The authors of one study recommended extending the CERC model to all health professionals in order to enhance the overall effectiveness of risk and crisis preparedness planning [9].

Comprehensive knowledge exists in the form of toolkits and guides to developing, implementing and evaluating health communication activities. These include the US National Cancer Institute's Making Health Communication Programmes Work [26] and ECDC's overview of health-communication related obstacles to MMR vaccination and guide to planning and implementing national communication initiatives on MMR vaccination [27]. Resources such as these could usefully inform the development of a strategy for health communication activities for communicable diseases and provide a template for the development of initiatives.

Likewise, there are extensive and comprehensive guidance and templates on, for example, online health communication produced by the U.S. Centers for Disease Prevention and Control [28], cultural appropriateness and the use of social media [28] from the same agency and gender appropriate messages from the Johns Hopkins Bloomberg School of Public Health in the US [29]. Properly collated, these would contribute to a valuable database for the further development of health communications for communicable diseases.

There is an overall lack of high-quality campaign evaluation studies in the area of prevention, and control of communicable diseases in Europe despite a consensus in the literature that effective evaluation is an important prerequisite for success [8]. Evaluation of such campaigns is complex and should incorporate complex programme objectives and interconnecting causal pathways [30, 31]. Further research is particularly needed in these areas, including clarification of what is being evaluated and the use of guiding principles for evaluation; the development of the theoretical underpinnings of the concept and methodological rigour; exploration of any unintended campaign effects and campaign cost effectiveness; and the promotion of detailed reporting of methodologies used [8].

The evidence base for health communication for non-communicable diseases is perceived in some instances to be more developed than that for communicable diseases [4, 5]. Specific instances of this include the evidence base in health advocacy and the work in progress on behavioural determinant mapping in non-communicable diseases [2, 5]. The European knowledge base may be usefully developed with reference to those in other jurisdictions and in relation to other disease groups. For example, there is some evidence on health advocacy for non-communicable diseases in the North American context – including a number of toolkits and guidelines – which may form a basis

for knowledge development in a European context [5]. Likewise, African and Asian countries were said, by the stakeholders, to have invested a lot of resources into aspects of social marketing such as segmenting and profiling populations resulting in the use of targeted communication about malaria and HIV/AIDS [2].

These evidence bases may provide a useful resource for the further development of a knowledge base for health communication for communicable diseases. The opportunity exists to explore the transferability of the expertise, capacity, information and best practice developed with regard to non-communicable diseases to communicable diseases. Interestingly, it was suggested during the stakeholders consultation that the distinction between communicable and non-communicable diseases was not a useful one as many non-communicable diseases are caused by infectious agents [2].

The need for more, systematic evaluation was repeatedly identified during this research project in relation to formative, process, impact, outcome and cost-effectiveness evaluation [4, 5, 8]. Evaluations can identify the significant and appropriate expectations of an initiative, the most effective strategies, and may support the development of best practices [32], serving to keep an initiative on track or, alternatively, indicate when it is advisable to adjust or adapt the advocacy strategies. The importance of an inclusive approach to meaningful evaluation [33] was also highlighted [5] in order to identify whether the intended beneficiaries of the advocacy intervention perceived a benefit from the initiative [32]. An initiative which brings about a change of policy or legislation will be of little real value if those for whom the change was intended to benefit do not know that this change has come about or if they are unable to access the legal services to vindicate their rights [33].

Recent developments have strengthened the knowledge base for health advocacy evaluations, and strong recommendations exist about the importance of the use of a theory of change during the development of campaigns and initiatives to make explicit the intended relationship between actions and outcomes [5]. The emerging knowledge and resource base might be profitably utilised in the wider development of evaluation of health communication interventions for the prevention and control of communicable diseases in the future.

A number of issues were highlighted as priorities, including developing an evidence base for the use of new and social media channels, profiling and targeting audiences, and retrospective evaluation on the use of health communication in recent crises in order to inform proactive planning for future crisis events. Evaluation is particularly underdeveloped in the broader context of health communication, and scant in relation to health communication for the prevention and control of communicable diseases. Integral to the development of more formal evaluation is progress in identifying the indicators of success for health communication activities. Promisingly, the evidence base is increasing and, for example, there are a number of guides and toolkits about theory-based evaluation of health advocacy interventions that can guide further advances in this sphere [34, 35].

A platform to support the development and sharing of evidence, tools, experiences and outcomes would greatly facilitate the development of the field of health communication. Interventions and activities can be accessed from such a database and tailored to suit the needs of the topic, country and target group. Such an approach would also strengthen the consistency of health communication for prevention and control of communicable diseases in Europe.

A particular value of such a platform may be the sharing of evidence and experience in relation to poorly reached groups. For example, a number of European countries have a significant Roma population, and the learning achieved in one country from a campaign to target the Roma population may provide an invaluable basis to inform a campaign with similar objectives in another country. Likewise, religious influences on the uptake of particular health services or health interventions may impact consistently on communities of that faith in whichever European country they live, and therefore, evidence gathered in one jurisdiction might usefully inform development and practice in other jurisdictions.

The current status of health communication campaign evaluation demonstrates the need for capacity building within and across European countries. Such capacity building can be enhanced and/or promoted through the identification of the skills and knowledge of researchers and health professionals who have worked in this area. Encouraging and facilitating open dialogue to exploit the lessons that may have been learned but not documented may also contribute to capacity. More extensive and detailed publication of process and impact evaluations would usefully contribute to the ongoing development of policy and practice [6]. The consultations identified a desire among the stakeholders for the development of a more reciprocal relationship between those working in the area of health communication and transnational agencies. This would facilitate the development of synergies in health communication activities between national and pan-European organisations such as ECDC, WHO and the EU.

Workforce

The availability of qualified human resources with sufficient skills and knowledge and the availability of training options.

The challenges and opportunities offered by the diversity of the workforce involved in health communication for communicable diseases in Europe were highlighted earlier. It is clear that the complexities and the multidisciplinary nature of health communication involve a vast range of skills drawing from a number of disciplines including

health, education, public health, health promotion, social marketing and information technology. Health communication competencies may be defined as the combination of the essential knowledge, abilities, skills and values necessary for the practice of health communication (adapted from [36]). The WHO captured the range of forms that health communication can take as follows:

> From mass, multi-media and interactive (including mobile and internet) communication to traditional and culture-specific communication, encompassing different channels such as interpersonal communication, mass organisational and small-group media, radio, television, newspapers, blogs, message board, podcasts, and video-sharing, mobile phone messaging and online forums (p. 21) [37].

Baille et al. [20] state that the potential for capacity building is greatest in a workforce that

- have relevant training or experience;
- have managerial and organisational support;
- have opportunities for professional development;
- engage with their target communities; and
- base their practice on intelligence and intervention research.

Across the EU and EEA region, all data indicate that there is a discernible knowledge gap regarding education and training provision for health communication skills for the prevention and control of communicable diseases [1-3]. Overall, stakeholders considered that education and training for health communication in the prevention and control of communicable diseases is currently underdeveloped across Member States [1-3]. It is important that, in consultation with Member States, research is conducted to establish the core competencies required for health communication so as to clarify the focus of the education and training provision.

There is a need to develop and strengthen health communication education programmes (both stand-alone and component modules of courses) that are available across the EU/EEA, and, crucially, to spread awareness of the provision that does exist. A number of key skills deficits were identified in the stakeholders consultations. One was around evaluation research, which was perceived to require specific skills and resources. The types of evaluation reported in the data collection suggest that participants are at least familiar with outcome, impact and cost-effectiveness evaluations. A second area of concern to the stakeholders was in the use of media in general, and specifically new media and new technologies.

Because of the variability between countries in their capacity to develop and effectively use health communication activities, any strategic development at a European level must be cognisant of this discrepancy in capacity and experience. Effective guidelines and tools to support health communication in a consistent way will be of significant value. During the consultation, the stakeholders identified a number of specific training needs, including in the area of social media, evaluation, and public relations in order to be prepared to deal with the media, particularly in crisis situations. A particular challenge of social media was identified as its speed, requiring health communicators to respond immediately to issues in order to pre-empt the dissemination of misinformation and also to react immediately to counter any misinformation that has already been disseminated [3]. In the absence of relevant training or education courses, such courses might usefully be developed.

The range of communicable diseases was, in itself, seen as a challenge to professionals working in the area of health communication; particularly emerging diseases that are new to Europe, such as West Nile virus and chikungunya fever. A database of resources developed during the Translating Health Communication Project may represent a first step towards the establishment of a research and knowledge infrastructure that can support professionals. The database records link to over 600 resources for communicable disease topic areas with information about the target audience of the resource, the organisation that developed the resource, the language of the resource, and the date it was developed. It also includes a further category which logs a diverse range of 49 health communication and information portals and websites. This database, while not designed to constitute an exhaustive list, nor act as a compendium of best practice examples, aims to facilitate improved sharing of online health communication resources and materials between European countries and regions. The database can be a resource for health professionals, researchers and academics working in the area of health communication for the prevention and control of communicable disease across all EU and EEA countries and the wider community [38].

A wide range of expertise is evident among identified stakeholders working towards the prevention and control of communicable diseases [1]. Health communication is often one part of the overall remit of such experts, particularly in countries with smaller populations. Stakeholders identified that structured health communication training was required and suggested that European-level organisations should coordinate and facilitate such training. A scoping study of education and training courses that currently exist would prove a useful preliminary to this endeavour. Collaboration with the higher education sector could advance the development and uptake of education and training opportunities including continuing professional development.

Conclusion

Health communication for the prevention and control of communicable diseases is underdeveloped in the EU and EEA. A wide variety of professionals are involved, to varying extents, in health communication, but there is a lack of clarity and little consistency about where the responsibility for health communication lies in individual countries. At present, the organisational structures do not support high levels of strategic planning or collaboration. Stakeholders suggested that the focus of health communication was on crisis rather than planned communication. However, it is also clear that the key stakeholders, as represented in the consultation phases of this project, are committed to the development of health communication for communicable diseases. They identified the need for a coherent and coordinated approach to build on the expertise, knowledge and evidence that currently exists to enhance health communication to improve health and reduce health inequalities. Stakeholders also identified the need for a shift from a top-down approach to a more participatory, citizen-centred way of working. The utilisation of new digital media, such as social media, to deliver timely and relevant health messages and to dialogue with citizens was also widely recognised as an emerging opportunity.

A body of evidence is emerging in relation to health communication. Some of it pertains to health communication for communicable diseases but much relates to non-communicable diseases. The bulk of the evidence emanates from North America. This evidence represents a resource that can be mined to establish its relevance and transferability to health communication for communicable diseases in the European context. Likewise, there are a significant number of guidelines and toolkits that have been developed and used in other contexts that could be adapted for use alongside the relatively limited number of resources relating to communicable diseases in Europe. Nevertheless, it must be acknowledged that for some communicable diseases, such as HIV/AIDS, there is a wide range of European resources developed.

In the European context, research activity for health communication in communicable diseases is in a nascent stage of development. The lack of systematic evaluation of health communication for communicable diseases has resulted in a limited evidence base which could give rise to inefficient use of resources. Stakeholders should encourage, and be encouraged to, evaluate interventions and to coordinate their research so as to construct a useful European knowledge base. A coordinated approach to research at a European level would result in greater collaboration across countries and the development of a more robust evidence base.

The potential for capacity building for health communication in communicable diseases in Europe is manifest. This will involve the development of knowledge, skills, commitment, structures, systems and leadership at all relevant levels, including the advancement of health communication knowledge and skills among practitioners; the expansion of support and infrastructure in organisations at a country and pan-European level; and the development of greater collaboration and partnerships for health communication research, practice and policy in the European region [17]. The application of a knowledge translation approach [39] would facilitate the transfer of knowledge generated into action for the improvement of citizen's health across the EU and EEA countries.

Stakeholders identified their own need for further education and training in health communication, and a first step in the provision of this would be the development of a database of existing courses. Particular attention should be paid to all the issues surrounding the use of technology and new media, not least to ensure that it does not have the effect of widening health inequalities. Likewise, the development and maintenance of an online platform for disseminating relevant resources and materials would support the advancement of a quality strategy for the promotion of health communication for communicable diseases.

Digital communications – a dynamic, interactive, continually evolving medium – have become an established source of health information for both consumers and health professionals. It would appear to provide the ideal medium for the provision of information about the prevention and control of communicable diseases. Little research exists in the European context about online health information-seeking behaviour in relation to communicable diseases and more information is required about issues concerning trust and credibility in internet-based health-related information and the specific needs of European public health organisations [7]. Future developments in internet-based health communication must also be cognisant of the differential access to the internet both between countries in the EU and EEA and within countries and work to facilitate equity of access to health information for all citizens [7]. Likewise, particular attention should be paid to population health literacy interventions by governments and other agencies that wish to harness the power of the internet; the quantity of available information and the speed at which it can be transmitted heightens the importance of enhancing communicative and critical health literacy as well as basic or functional literacy.

European and international agencies and organisations such as ECDC and the WHO were identified in the stakeholder consultations as having a critical role to play in supporting the future development of health communication in the field of communicable diseases prevention and control. Such organisations could provide the leadership and coordination required to advance the field of health communication for communicable diseases in a coordinated and strategic way.

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Appendix 1

Glossary

This glossary provides a definition of the specialised terms used in the Translating Health Communication Project. One key definition is offered for each term although a multiplicity of definitions exists in many instances. The definitions that are used reflect the use of the term in the context of the project.

Channels

- Online channels, e.g. websites and interactive sites, mailing lists, e-forums, online action campaigns, email, online databases, social networks, etc.
- Broadcast media channels, e.g. television, radio and film.
- Other electronic/digital channels, e.g. CD ROMs, DVD, telephone and mobile phones.
- Direct marketing channels, e.g. postal mail, email.
- Print media, e.g. newspaper advertisements, editorials, articles, leaflets, brochures, billboards (display boards), books, magazines, press release, etc.
- Action-oriented channels, e.g. role-play, theatre, songs, storytelling, games, etc.
- Face-to-face channels, e.g. presentation, trainings, clinical settings, conferences, etc.
- Events (national or community events), e.g. HIV/AID Awareness Day and health promotion events [1].

Crisis communication: a spontaneous and reactive process, often occurring in unexpected emergency situations [2-6]; messages are based on what is known and not known about a current state or condition (for example, its magnitude, immediacy, duration, control, cause, blame, consequences) [7].

E-health: e-health is the transfer of health resources and healthcare by electronic means. It encompasses three main areas, including the delivery of health information (for health professionals and health consumers) through the internet and telecommunication [8].

Emerging diseases: one that has appeared in a population for the first time, or that may have existed previously but is rapidly increasing in incidence or geographic range [9].

Epidemic: the occurrence in a community or region of cases of an illness, specific health-related behaviour, or other health-related events clearly in excess of normal expectancy [10].

Evaluation: the systematic application of research procedures to understand the conceptualisation, design, implementation, and utility of interventions [11, 12].

- **Process evaluation:** where campaign exposure and target audience feedback is monitored to inform any necessary mid-point campaign improvements [12-14].
- **Implementation evaluation:** monitors the fidelity of the programme or technology delivery [1].
- **Outcome evaluation:** investigates whether the programme or technology caused demonstrable effects on specifically defined target outcomes [1].
- **Impact evaluation:** assess the overall or net effects (intended or unintended) of the programme or technology as a whole [1].
- **Formative evaluation:** helps to guide campaign development by gaining a deeper understanding of the values, attitudes, and beliefs of the target population [1, 11, 14].
- **Cost effectiveness evaluation:** seeks to determine the costs and effectiveness of surveillance and response strategies and activities. It can be used to compare similar or alternative strategies and activities to determine the relative degree to which they will obtain the desired objectives or outcomes. The preferred strategy or action is one that has the least cost to produce a given level of effectiveness, or provides the greatest effectiveness for a given level of cost [15].

Hard-to-reach: is a term sometimes used to describe those sections of the community that are difficult to involve in public participation [16].

Health advocacy: a combination of individual and social actions designed to gain the political commitment, policy support, social acceptance and systems support for a particular health goal or programme [17].

Health communication: the use of mass and multimedia and other technological innovations to disseminate useful health information to the public; health communication increases awareness of specific aspects of individual and collective health as well importance of health in development [18].

Health education: health education comprises consciously constructed opportunities for learning, involving some form of communication designed to improve health literacy, including improving knowledge, and developing life skills which are conducive to individual and community health [18].

Health indicator: a health indicator is a characteristic of an individual, population, or environment which is subject to measurement (directly or indirectly) and can be used to describe one or more aspects of the health of an individual or population (quality, quantity and time) [18].

Health literacy: the degree to which individuals have the capacity to obtain, process and understand the basic health information and services needed to make appropriate health decisions [19].

Health outcomes: a change in the health status of an individual, group or population which is attributable to a planned intervention or series of interventions, regardless of whether such an intervention was intended to change health status [18].

Health promotion: a combination of educational, political, regulatory, and organisational supports for actions and conditions for healthy living of individuals, groups, or communities [17].

Issues management: an organisation's formulation of strategic plans and actions based on predictions of future trends [20].

Mass communication: the dissemination of specified information to large sectors of the public through the mass media [20].

Media relations: an organisation's efforts to work with the media to inform the public of its policies and messages, with the aim of fostering credibility [20].

Message source and credibility: the plausibility and reliability of communicators and the ideas they propagate through various channels, as observed and interpreted by receivers. Source trustworthiness and expertise have an impact on the receivers' likelihood of persuasion [20].

Online health consumer and health seekers: in the context of studies on health information seeking online, 'health consumers' can be broadly defined as patients, patients' friends/relatives, and citizens in general [21]; 'health seekers' have been defined as 'internet users who search online for information on health topics, whether they are acting as consumers, caregivers or e-patients' [6, 22].

Organisational performance: a measure of an organisation's actual results compared to its goals or objectives [20].

Personalised communication: communication which in some way aims to make a personally relevant appeal to individuals, for example using direct contact or individually addressed correspondence [23].

Public health: refers to all organised measures (whether public or private) to prevent disease, promote health, and prolong life among the population as a whole. Its activities aim to provide conditions in which people can be healthy and focus on entire populations, not on individual patients or diseases [24].

Public relations (PR): the management of communication between an organisation and the public. PR is used to generate favourable public opinion and the maintenance of a positive public image [20].

Risk: an evaluation of the probability of occurrence and the magnitude of the consequences of any given hazard, i.e. how likely is a hazard and what consequences will it have? [25].

Risk analysis: the process of identifying, defining and analysing potential threats and uncertainties that may adversely affect the public. Risk management, risk assessment and risk communication are key components [20].

Risk communication: engaging communities, including those who could be negatively affected, in discussions about environmental and other health risks and about approaches to deal with them [1].

Science communication: aims to promote awareness and generate positive opinions towards the related science [20].

Segmentation: the communicative process of targeting specific messages to a particular group of individuals rather than the public at large [20].

Social marketing: the application of marketing theories and techniques to the planning, implementation, and evaluation of programmes and interventions to influence pro-social voluntary behaviour change in order to improve personal welfare, and the welfare of society [20].

Stakeholder management: the process of identifying and engaging with stakeholders (individuals or organisations who are affected by an outcome) to help an organisation to achieve its strategic goals [20].

Sustainability: [health promotion actions] that can maintain their benefits for communities and populations beyond their initial stage of implementation. Sustainable actions can continue to be delivered within the limits of finances, expertise, infrastructure, natural resources and participation by stakeholders [26].

Sustaining the issue: keeping the awareness of the issue of health communication for communicable diseases high on the agenda of all stakeholders, including the public, community partners, and decision-makers [1].

Sustaining behaviour changes: building skills, create physical structures, and change the social environment so that it supports healthy behaviour through health communication for communicable diseases [1].

Sustaining programmes: Integrating activities through health communication for communicable diseases (e.g. an awareness campaign, a support group, or educational sessions) into existing organisation/s who agree to take responsibility for the programme over the long term [1].

Sustaining a partnership: developing productive working relationships and taking full advantage of the benefits of using health communication for communicable diseases with a wide range of stakeholders [1].

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Appendix 2

Chapter 1: Strengths and weaknesses matrix template and legend

Title	
Concept	Is there a commonly agreed conceptualisation for risk communication?
Strengths	
Weaknesses	
Models & theories	**Were there any models, theories or frameworks identified in the review?**
Strengths	
Weaknesses	
Tools	**Did the review identify any tools that facilitate step-by-step practical application?**
Strengths	
Weaknesses	
Evidence	**What evidence was identified in the review and what is the quality of this evidence?**
Strengths	Quality
Weaknesses	Quality
Health & communicable disease outcomes	**What evaluation outcomes were used?**
Strengths	Communication effects & behavioural and other changes
Weaknesses	Communication effects & behavioural and other changes
Application	**What has been applied into practice in the area of communication for the prevention and control of communicable diseases?**
Strengths	European focus Targeting including hard-to-reach populations
Weaknesses	European focus Targeting including hard-to-reach populations
The reference numbering system used in this table does not stem from the completed review, published in the technical report series as: [insert full reference of relevant review].	

Legend for matrix strengths and weaknesses table above

Concept: Is there a commonly agreed conceptualisation for the main focus of the review?

Models & theories: Are there any models, theories or frameworks identified in the review?

- Comment if they are specific to the topic area or health communication communicable disease.
- Name identified models and theories and include reference.

Tools: Does the review identify any tools that facilitate practical step-by-step application?

- This may be a checklist, guidelines, instruments, or templates.
- Comment if they are specific to topic area or health communication/communicable diseases.
- State resource and include reference.

Application: What has been applied into practice in this area? Where possible, this should section should also include:

- Europe – is the identified application within Europe?
- Focus – are the applications focused on specific health topics, including communicable diseases/health communication?
- Targeting (hard-to-reach groups) – do the applications target hard-to-reach groups?

Evidence: What evidence is identified in the review and what is the quality of this evidence?

- Include key document sources identified in the review; include reference.
- Highlight strengths and weaknesses observed in the evidence.

Health and communicable disease outcomes: What outcomes are utilised in the evidence?

- Comment if they are specific to communicable disease and/or health outcomes.
- Where possible, place information under the subheadings 'communication effects'. For example, these could be indirect indicators of success such as awareness /knowledge and 'behavioural and other changes', e.g. increased health service use or improved immunisation.

Appendix 3

References for all matrices reported in Chapter 1 (analysis of strength and weaknesses).

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