

ARTICLE

Assess before you act! Intervention Mapping Step 1: Needs and Asset Assessment

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Abstract

This contribution focuses on the first step of Intervention Mapping (IM), which provides the foundation for later stages by analysing health needs and assets. Step 1 involves four tasks: (1) establishing a diverse, inclusive planning group to involve key stakeholders in programme development, implementation, and evaluation; (2) conducting a needs assessment to comprehensively analyse health and well-being using an ecological perspective; (3) performing an asset assessment to understand the priority population, community, and environment where the programme will be implemented; and (4) translating these findings into clear programme goals. We then illustrate IM Step 1 through a case study.

Key words: Intervention Mapping, Step 1, Needs Assessment, Asset Assessment

In this contribution, we will focus on the first step of Intervention Mapping (IM). This first IM step is aimed at guiding the analysis of the health needs and assets of communities and aims to create a strong fundament for the consecutive steps. IM Step 1 comprises four tasks: (1) to establish a diverse and inclusive *planning group* to meaningfully and respectfully involve key stakeholders interested in, or responsible for programme development, implementation, and evaluation; (2) to conduct a *needs assessment* allowing for a detailed, comprehensive analysis of the health problem at hand hereby adopting an ecological approach by acknowledging that behaviour is a function of individuals and their social, physical, and political environments; (3) to conduct an *asset assessment* describing the context for the intervention, including the population, setting, and community; and (4) to translate the outcomes of the needs and asset assessment into clear programme goals (Bartholomew Eldredge et al., 2016).

We will first provide a brief overview (summary) of IM, after which we continue with a general description of the four tasks of IM Step 1. We conclude with presenting a case study to illustrate the application of IM Step 1 in practice.

IM in a nutshell

Intervention Mapping (IM) offers a structured, *six-step approach* for developing health promoting programmes (Bartholomew Eldredge et al., 2016). The steps include: (1) needs and asset assessment; (2) programme goals and objectives; (3) programme design; (4) programme production; (5) programme implementation; and (6) evaluation. Each step builds on the previous one, leading to development of a comprehensive blueprint for intervention design, delivery, and evaluation. The process is iterative and designed to move from identifying a health problem to formulating solutions. IM is grounded in three core perspectives. Firstly, *participatory planning* emphasizes equitable involvement of stakeholders and priority populations in all phases of programme planning to ensure alignment with community needs. Secondly, IM encourages the use of theory and evidence to guide decision-making in every step. Thirdly, IM adopts an *ecological and systems perspective*, acknowledging that environmental contexts exert (direct) influences on quality of life, health problems and individual health behaviours. This perspective encourages planners to consider broader contextual influences when designing programmes. A more elaborate description of IM and its foundational perspectives can be found in the introduction of this special issue.

Aligned with these foundational perspectives, the *Core Processes* guide the work for all steps of IM (Ruiter and Crutzen, 2020). Core Processes stipulate that, in each step, we approach the different tasks by (1) posing planning questions; (2) exploring possible answers through brainstorm; (3) reviewing evidence from previous research; (4) finding theoretical support; (5) identifying and addressing the need for new research; and (6) completing and assessing the list of possible answers. A more elaborate description of the use of Core Processes in IM can be found in the contribution to this special issue titled ‘The use of Core Processes when Applying Intervention Mapping’. Engaging in these Core Processes with the planning group in Step 1 of IM is essential, as it prevents planning groups from focussing on the development of ‘solutions’ (which is part of IM Steps 2-4) too early. Prematurely prioritizing solutions can overlook critical existing knowledge, resulting in an inaccurate, incomplete, or even biased understanding of the health problem, community needs, and available assets (Kok and ten Hoor, 2023). It is therefore imperative to first invest time in thoroughly understanding the problem.

Task 1: Establish and work with a planning group

Inclusive and participative planning is key

Meaningful participation of a wide and diverse range of stakeholders is fundamental for successful development, implementation and evaluation of a health promoting programme, as people will be more committed to initiating and sustaining actions, they have co-created (Green et al., 2022). A participatory approach in health promotion does not only offer *direction* (by ensuring that actual problems and community needs are addressed) but also adds *focus* (by building on and valuing local knowledge and assets to assure that to be developed initiatives align to the preferences, culture, and contexts of the communities they should serve). It is imperative to ensure inclusion of communities and at-risk and priority populations in the planning group and to collaborate as partners, or even delegate power, in intervention development and implementation, allowing them to take greater control over decisions and actions affecting their (quality of) life and health (World Health Organization, 2020). Moreover, ensuring that priority populations participate in research, will not only ensure empowerment, but can also enhance the democratic process and can strengthen the efficiency, effectiveness and quality of the research conducted (Harting et al., 2022).

Specific stakeholders to include in a planning group should either have *expertise* on the subject matter (e.g., the health problem at hand, or the specific intervention to be developed, implemented and evaluated), or *responsibility and authority* (e.g., to manage the process, make decisions or allocate resources), or a certain degree of *influence* (e.g., within a community, an organization or at a political level) or *commitment* to the issue (e.g., members with professional or scientific interest in the health problem, or advocates of the intervention to be developed). Moreover, it is important to include at least one member with expertise on behaviour and environmental change, not only to guarantee effective use of scientific evidence and theory in this field, but also to act as a translator. This latter refers not only to ‘translating’ technical terminology for members of the planning group (to facilitate engagement in the IM process), but also to ‘translating’ input derived from the brainstorming phase to adequate terminology (to formulate answers to the planning questions) (Bartholomew Eldredge et al., 2016).

Once the group is established, it is important to manage and lead this group through the process of IM. The responsibilities of the planning group members are two-sided. Firstly, they are responsible for delivering *output*, as jointly they engage in the iterative process of programme planning by completing the tasks listed in the six IM steps using the Core Processes. Secondly, they are responsible for facilitating the group *process* (Bartholomew Eldredge et al., 2016). In order to create good collaborations and equal partnerships, several key principles should be kept in mind: (1) ensure trust and respect through the collaboration process, (2) decrease barriers to participation and ensure equal accessibility for all members, (3) invest in understanding the perceptions of all and value these, (4) strive for equity and ensure that all members receive tailored opportunities and support to contribute, (5) operate transparently, and (6) realize autonomy and empowerment of members (Adnan et al., 2019; World Health Organization, 2020).

Establishing a planning group is the very first task to engage in, as it is important to select and meaningfully, democratically and respectfully involve members from the beginning. This does however not mean that the composition of the planning group is fixed. Rather than being static, planning groups are dynamic in nature and suspect to change. In some cases, this change will be *intentional*, as some phases of the planning process require involvement of new members or parting of current members. For instance, if in Step 3 or 4 it will be clear that the focus will be on developing a digital intervention, it could be needed to add members with specific expertise, resources, or authority linked to this specific type of intervention (Bartholomew Eldredge et al., 2016). Contrary, also *unintended* changes should be anticipated, as individual planning group members might take new steps in their (professional) lives, causing them to lose time, interest, energy or the responsibility to invest (Stutterheim, 2025).

Task 2: Conduct a needs assessment to create a Logic Model of the Problem

Understanding the problem and population is key

The needs assessment in task 2 of IM Step 1 is guided by a modified version of the PRECEDE model (Green et al., 2022). This model aids the planning group in understanding the health problem, the factors that affect the problem and the stakeholders involved. By using the Core Processes the planning group members aim to formulate answers to specific planning questions relevant for this task:

Phase 1: What is the priority population, the health problem and its impact on quality of life?

It is important to understand and define the exact health problem. The main questions in a needs assessment therefore often pertain to: “What is the problem?” and “Who is our priority population?”. To arrive at an answer to these questions, a rigorous assessment of (most often) epidemiological data is needed to provide a descriptive analysis of both the impact of the health problem (e.g., by exploring indicators like mortality, morbidity, and disability) and its size (e.g., by exploring rates and risks). The information collected in this phase provides insights into the relative importance and size of health problems in specific populations and aids the prioritization of specific health problems and the specification of the population that should benefit from the programme to be developed.

This information is complemented by (most often) qualitative data on how this problem is manifested in the at-risk population, what this problem or risk means to them and how they experience its influence on their quality of life. Important indicators of quality of life to be assessed pertain to, among others, costs of health care, absenteeism, work or school performance, activities in daily life, isolation, happiness, and/or? self-esteem (Bartholomew Eldredge et al., 2016).

Phase 2: What are the possible causes of the health problem?

In line with the foundational perspective of IM, we adopt an ecological approach to understand the different causes of the problem. By using this approach, we recognise that health problems are shaped by a complex interplay of factors at the behavioural and environmental level. Therefore, in this phase a behavioural and environmental analysis is conducted to analyse the causes of the health problem in the specified priority population. In the analysis of *behavioural factors*, we aim to identify those individual health behaviours that are causally related to the health problem and to analyse how these behaviours manifest in the priority

population. A wide variety of health behaviours can be the focus here, ranging from engaging in risk behaviours (e.g., smoking, substance abuse, over-exposure to UV radiation, refraining from vaccination or screening), to refraining from health promoting behaviours (e.g., lack of physical activity, sedentary behaviour, unhealthy eating patterns, unhealthy sleep patterns, inadequate use of sun screen) and inadequate adherence or self-management behaviours (e.g., sub-optimal therapy or medication adherence).

In addition to the behavioural factors, it is especially important to explore the *environmental* factors that influence the health problem either directly or indirectly. These factors can manifest at different levels of the environment, ranging from the interpersonal (e.g., family, peers, health (care) professionals), to the organizational (e.g., schools, companies, health (care) facilities), community (e.g., groups that share geographical, geopolitical, demographical or cultural characteristics), and the societal level (e.g., provinces, states, countries). In listing these influences, it is not only important to merely identify the levels of influence, but also to specify individuals (or agents) that are responsible for this influence. For instance, in the *home* environment, food related practices performed by *parents* (=environmental agent) can negatively impact a wide variety of child eating behaviour (Gevers et al., 2015). In addition to influencing the health problem and/or the individual behaviours, it is important to acknowledge that the different environments interact (Gubbels et al., 2011).

Phase 3: why does the priority population engage in these behaviours, and why do agents create or maintain these environmental influences?

It is important to understand the factors that are influencing the individual behaviour or the agent's influence in the environment, referred to as *determinants*. Determinants are considered to rest within the individual – either a member of the priority population or an environmental agent. These determinants are included in theories in our field of Health Psychology, such as the Reasoned Action Approach (Fishbein and Ajzen, 2011), Social Cognitive Theory (Bandura, 1991), and the Health Action Process Approach (Schwarzer and Hamilton, 2020), and some examples are *risk-perception, attitudes, outcome expectancies, self-efficacy, skills, and planning*. These general determinants are composed of so-called sub-determinants, which are behaviour-specific beliefs individuals hold regarding the behaviour itself (priority population) or their influential actions in the environment (agents) (Peters, 2014; Crutzen et al., 2017).

It is important to elicit these beliefs in Step 1. For instance, qualitative methods (e.g., individual interviews) could firstly be used to understand why parents refrain from using sunscreen. Identified beliefs are, for instance, that parents hold the belief that sunscreen use it is not important or unpleasant (= sub-determinant), resulting in a negative attitude towards sunscreen use (=determinant) (Thoonen et al., 2021b). Quantitative methods could then be used to identify those specific determinants that show room for improvement and that are most strongly associated with sunscreen behaviour (Thoonen et al., 2021a). These identified determinants should then be included in the to be developed programme, where specific theoretical methods can be selected to address these (see Step 3, Bartholomew Eldredge et al., 2016, Kok et al. (2016)).

All the work for phases 1-3 can be summarized (and visualized) in the Logic Model of the Problem (Peters et al., 2024, see Figure 1), which serves as an important product of IM Step 1. This model can both be regarded as a formative evaluation, in which all obtained needs assessment data serve to set priorities and determine programme goals, as well as a baseline measure that can serve the later process and outcome evaluations (IM Step 6) (Bartholomew Eldredge et al., 2016).

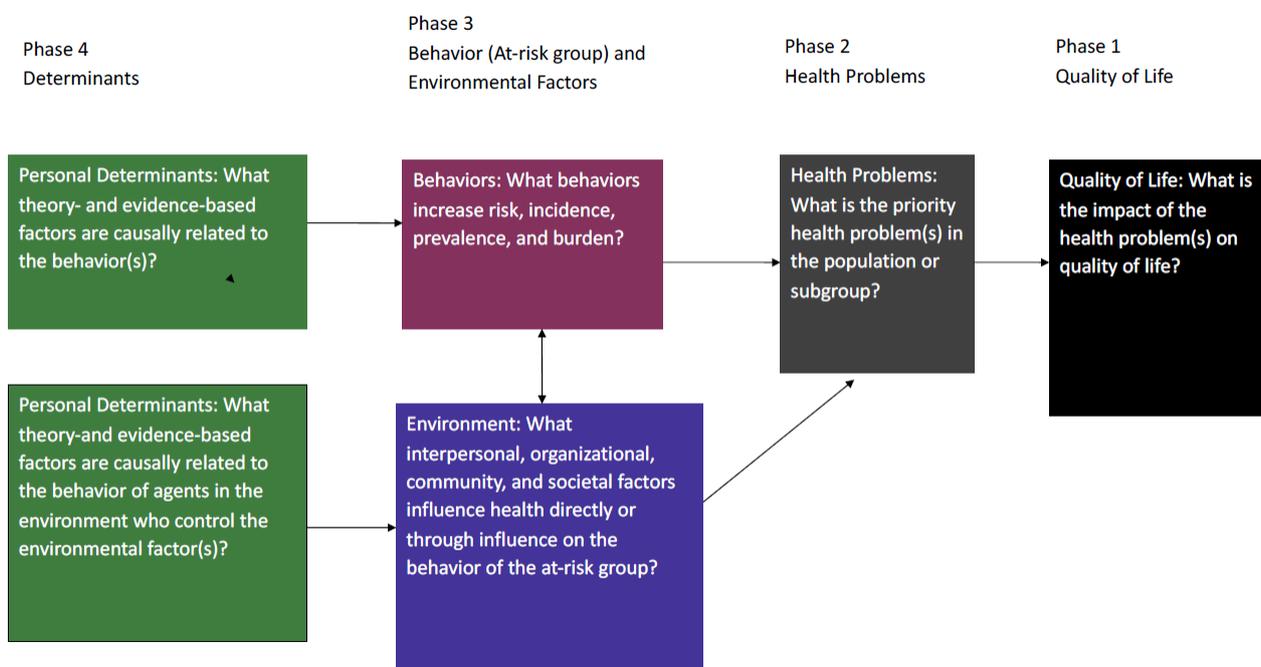


Fig. 1. Logic Model of the Problem.

Task 3: Describe the context for the intervention

Assessing community's assets, capacities and capabilities is key

The needs assessment described in task 2 has a strong focus on identifying deficits or needed improvements (e.g., health problems, unhealthy behaviours and environments). In contrast, an assessment of *assets*, is a strengths-based approach, community driven and focussed on exploring capacities and capabilities of individuals and their environments that may be harnessed for the development of health promoting programmes (Bwirire et al., 2023; Luo et al., 2022; Nakakawa et al., 2025). Addressing these assets, capacities and capabilities in programme planning can also enhance adoption, implementation and future maintenance of the programme (Step 5). Assets are ideally assessed at different environmental levels (Bartholomew Eldredge et al., 2016). Firstly, it is important to assess assets in the *social environment* by identifying existing social environmental factors (e.g., individual capacities, social cohesion), or organizations or groups (e.g., religious organisation, local businesses, community organisations) that could support a future programme. Secondly, the *information environment* could be assessed, listing important communication channels that could be used to communicate the future programme (e.g., local printed media, television channels, social media). Thirdly, it is important to assess assets in the *policy/practice environment* to identify existing policies or practices that could be leveraged to support the future health promoting programme (e.g., laws, rules, guidelines, practices). Finally, it is important to assess the *physical environment* to identify assets linked to the built or natural environment that could be harnessed to support the future health promotion programme (e.g., green spaces, infrastructure, building).

Task 4: State program goals

Setting priorities and deciding on overall programme goals is key

The final task focuses on using the needs assessment outcomes to discover common ground, build consensus and set clear priorities, ensuring the intervention effectively addresses the most pressing issues. Setting priorities involves identifying which health or quality of life outcomes, or behavioural or environmental factors should be addressed first, based on the severity of the health problem, its impact on the priority population, and the feasibility of addressing it within available assets and resources. Furthermore, prioritization also considers the level of change needed (e.g., reducing a risk factor vs. preventing a new one) and the potential for intervention success (Bartholomew Eldredge et al., 2016).

Programme goals are defined as changes to be expected in quality of life, health, behavioural or environmental factors derived from the needs assessment. The exact level at which goals are defined, depends on the time frame available for programme development, implementation and evaluation. If within this time frame, changes in quality of life are to be expected, goals are stated at this level, whereas goals might be stated at the health, or even behaviour or environmental level if this is more feasible.

Step 1 applied: the HOBIT case study

Learning from examples is key

The HOBIT program is a school-based intervention designed to educate Czech students aged 11–15 on stroke recognition and emergency response. Using the IM approach, we developed a new educational program to enhance Emergency Medical System (EMS) activation among schoolchildren when they suspect a stroke in their surroundings. More detail regarding the application of IM Step 1 (and other steps) can be read in the article by Volevach et al. (2024).

1. Task 1: Establishing and Working with a Planning Group

To ensure a multidisciplinary approach, a planning group was formed, consisting of the main investigator, health promotion specialist, PR and communication specialist, members of the target group (children), stroke survivors, neurologist and teachers as the main implementors. This group helped identify key needs, define intervention goals, and ensure implementation within the school environment.

2. Task 2: Conduct a Needs assessment to create a Logic Model of the Problem

In the first phase, we identified the *priority population and the health problem*. We decided to focus on students aged 11–15 years attending Czech schools, as children were identified as suitable bystanders with the potential to recognize stroke symptoms and transfer knowledge within families. Also, integrating stroke education into the school curriculum allows for continuous implementation without reliance on external experts or additional funding. We wanted the intervention to target high stroke-related mortality and disability rates in Czechia, which are primarily due to delayed EMS activation by stroke bystanders. In a second phase, a literature review supported by in-depth interviews with stroke survivors and neurologists was conducted to further identify the main *behavioural factors* linked to the health. The main problematic behaviours identified, were failure to recognize stroke symptoms, not using the FAST (F-face, A-arm, S-speech, T-time) method, and incorrect EMS usage. In the third phase, we identified important *determinants* associated with suboptimal EMS activation - lack of knowledge and skills, low self-efficacy, underestimation of severity, low perceived susceptibility, and social influence discouraging EMS activation. Findings were synthesized into a Logic Model of the Problem, highlighting delayed EMS activation as a major contributor to stroke-related mortality and disability.

3. Task 3: Describing the Context for the Intervention – Assessing community's assets, capacities and capabilities

The school setting offered several *assets* supporting implementation: teachers integrated the programme into lessons (social environment), the curriculum allowed embedding content without extra resources (information environment), and access to technology enabled interactive learning (physical environment). Parents could further reinforce knowledge at home.

4. Task 4: State Program Goals

Based on the needs and asset assessment and the short timeframe for expecting outcomes, the main program goal was defined at the behavioral level and was to improve the number of children who can recognize stroke in their surrounding and correctly activate EMS. In addition, secondary program goals were defined at the determinants level and pertained to an increase in children's knowledge of stroke symptoms and appropriate responses, improved skills to help people with a stroke, and enhanced confidence in calling for help.

Summary and next steps

This contribution describes the tasks that comprise the first step of IM and provides a practical application of IM Step 1 for the Hobbit programme (Volevach et al., 2024). Together with a planning group, involving key stakeholders and members from the priority population, a needs and asset assessment is conducted using the Core Processes. The outcomes of this elaborate assessment serve as a formative evaluation, in which all obtained needs assessment data serve to set priorities and determine programme goals the fundament for the programme to be developed (IM Step 2-4) and implemented (IM Step 5), as well as a baseline measure that can serve the later process and outcome evaluations (IM Step 6).

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