| **Criterion** | **Example of text related to this criterion** | **Rating** |
| --- | --- | --- |
| **Criterion #1**  **Intervention Characteristics:** Intervention/Program source (From CFIR, Damschroder, 2009)2  **Explanation/Example:**  Is the intervention/program externally or internally developed? An intervention/program may be internally developed as a good idea, a solution to a problem, or other grass roots effort, or may be developed by an external entity (such as a foundation or a NGO). Interventions or programs that arise internally from the populations who will be impacted are sometimes more sustainable than externally developed programs dependent on external funding. The perceived legitimacy of the source may also influence implementation. | The Centers for Disease Control and Prevention (CDC) and the Pan American Health Organization (PAHO) have developed an inexpensive, rapidly implementable alternative for water quality improvement. This intervention consists of three elements: (1) point-of-use treatment of contaminated source water with disinfectant produced locally using appropriate technology; (2) safe storage of treated water; (3) community education.  *(Indicates the intervention was developed externally)* | Fair |
| **Criterion #2**  **Intervention Characteristics:** A description of why the intervention was hypothesized to have an impact on the outcome, according to theory. (From CReDECI, Mohler 2012; also mentioned in Michie, 2009)3,4  **Explanation/Example:**  The theoretical basis of the intervention should be clearly stated. This includes the theory on which the intervention is founded as well as, if available, empirical evidence from studies in different settings or countries. For example, "The implementation was based on Rogers’ Diffusion of Innovation theory, which posits 5 factors of innovation that influence a decision to adopt or reject an innovation: relative advantage, compatibility, complexity or simplicity, trialability, observability. A similar intervention, also based on Rogers’ Diffusion of Innovation theory, was successfully implemented in other countries." | No text was found. | Poor None |
| **Criterion #3**  **Intervention Characteristics:**  Rationale for the aim/essential functions of the intervention/program’s components, including the evidence whether the components are appropriate for achieving this goal.  This differs from the need to articulate the theory behind the intervention in that the theory posits the general principles (such as Rogers Diffusion of Innovation) while this item is about specific components of the intervention and the effects of the component on specific targets. (From CReDECI, Mohler, 2012; also mentioned in Michie, 2009)3,4 | No text was found. | Poor / None |
| **Criterion #4**  **Outer Setting:** External policies and incentives (From CFIR, Damschroder, 2009)2  **Explanation/Example:**  How does the health service, intervention, or program relate to country and global health goals? Is the program part of a larger strategy? If so how is it strategically aligned? A country's health policies may influence the implementation of a particular intervention or program. | No text was found. | Poor / None |
| **Criterion #5**  **Intervention Characteristics:**  Detailed description of the intervention/program (From WIDER as described in Michie, 2009)4  **The detailed description should include:**  a. Characteristics of those delivering the intervention/program (such as a nurse or lay health worker)  b. Characteristics of the recipients  c. The setting  d. The mode of delivery (such as face-to-face) | Only mentions “community health workers” and mentions that they were already promoting chlorination in both study communities before the study itself.  The population is described in detail on page 85 of the article along characteristics such as baseline water and hygiene practices. It covers 127 households with 791 persons, 50% of whom have <6 years of schooling and mean per capita income is $230. I don’t quote the entire thing since it’s a few paragraphs long.  The setting and the characteristics are very similar if not identical in this article. The setting is two periurban communities of Montero, Bolivia, a city located in the subtropical eastern lowlands. Shallow uncovered household wells were the primary drinking water source for 87% of the households included.  The intervention is delivered face-to-face.“In July 1994, we interviewed the person responsible for handling water in the household, usually the female head of household or oldest daughter, about family socioeconomic and demographic characteristics, hygienic habits and water handling practices….” | Fair  Good  Good  Good |
| e. The intensity of the intervention/program (such as the contact time with participants)  f. The duration (such as the number of sessions and their spacing interval over a given period)  g. Adherence or fidelity to delivery protocols | This is not expressly mentioned and is hard to track from a lengthy description of the overall study design including differences in intensity across intervention and control households. On page 84 the article states (after discussing a baseline survey in July 1994, a baseline water test done on all households in August 1994, and mention of a public lottery to assign households to treatment and control groups), “From 22 to 25 August 1994, community health volunteers distributed one container of disinfectant and two special vessels to each intervention household and explained how to treat and store water with these products. Once a week, community health volunteers distributed containers with freshly prepared disinfectant to each intervention household, removed old containers, and used the labels on the special vessels to reinforce messages about proper use of the disinfectant  and vessels and remind participants of different applications for treated water. Six visits at monthly intervals were made to all participating households from September 1994 to February 1995 to survey water-handling practices and to test stored and source water quality as described above.  From 1 October 1994 to 28 February 1995, a specially-trained health worker made weekly visits to all households to obtain information about all household cases of diarrhoea, defined as >= 3 loose or watery stools in 24 h, with onset in the preceding 7 days.”  This might be answered by e. above, but again not much detail on precisely how long and frequent the visits were, and by whom.  No mention of this by community health volunteers tasked with implementing the intervention. | Good  Fair  None |
| **Criterion #6**  **Intervention Characteristics:**  Costs of the intervention and costs associated with implementing the intervention (From CFIR, Damschroder, 2009; CReDECI, Mohler, 2012)2,3  **Explanation/Example:**  The cost of the intervention and implementation can influence the adoption and sustainability; interventions maybe more difficult to sustain if they were supported as part of a research study. | “This intervention is a promising way of providing microbiologically safe water in developing countries. While supplying piped, treated water to all households remains elusive for many communities, this point-of- use disinfection and safe water storage intervention can be rapidly disseminated, is inexpensive, simple to use, and adaptable to a variety of conditions. A similar water vessel can be manufactured in Bolivia at a cost of under US $4·00 each. The disinfectant can be produced in any community by inexpensive, solar- powered electrolysis of a salt water solution for as little as $0·05 per family per year. An earlier cost- effectiveness study estimated that this intervention would have no net cost to society if it decreased diarrhoea incidence by 20 % or more. Ultimately, the utility of this intervention will be determined by its acceptability and sustainability in diverse populations. Social marketing will be an important component of efforts to enhance the intervention’s acceptability and to ensure its sustainability through commercialization. An attractive aspect of this intervention is that it yields a product, the disinfectant, which can be marketed beyond the community as an alternative to boiling, which is expensive and time-consuming, and to solar disinfection, which is time-consuming and does not prevent recontamination….. Start-up costs for the production of the special vessels, disinfectant, and promotional materials, and for the establishment of distribution networks, will be substantial. The prospect of local management of the project and either full or partial cost recovery enhances the potential for success. Further ` real life ' investigations of this and similar strategies in other communities and at a larger implementation scale will define better the potential of this promising new strategy for waterborne disease prevention.” | Fair |
| **Criterion #7**  **Population needs**  (From CFIR, Damschroder, 2009)2  **Explanation/Example:**  The extent to which population needs, as well as barriers and facilitators to meet those needs, are accurately known and prioritized. This could include population-based data on causes of morbidity and mortality, political or cultural barriers or facilitators, and/or more locally focused data about local needs, barriers or facilitators. | The only description of population needs was that diarrheal diseases, frequently transmitted by faecally-contaminated water, continue to be a major source of morbidity and mortality in developing countries. It later mentions that much of the local water is contaminated in the study area. | Fair |
| **Criterion #8**  **Process of implementation:** Description of facilitators or barriers which have influenced the intervention or program’s implementation (see #10) revealed by a process assessment.  In contrast to the criterion #7 above which assesses barriers and facilitators as inputs to developing the intervention strategy, this criterion assesses the actual barriers and facilitators identified during and after the implementation.  (From CReDECI, Mohler, 2012; also mentioned in Michie, 2009)3,4  **Explanation/Example:**  "The attitudes of the nursing home managers turned out to be an important factor supporting or impeding the success of the intervention's implementation. The more the managers agreed with the interventions’ aim, the better the nursing staff felt supported." | No text found. | Poor / None |
| **Criterion #9**  **Description of materials:** Description of all materials or tools used for the implementation  (From CReDECI, Mohler, 2012)3  **Explanation/Example:**  "The primary enablers of behaviour change were paid community-based health workers, who were recruited from the local community based on 12 years or more of education,  proficient communication and reasoning skills, commitment towards community work, and references of community stakeholders. They received a combination of classroombased and apprentice ship-based field training over 7 days on knowledge, attitudes, and practices related to essential newborn care within the community, behaviour change management, and trust-building. After training, suitable candidates were closely mentored and supervised by a regional programme supervisor (n=4) responsible for 6–7 trainees, for an additional week before final selection was made." | There is great detail on a biologic/scientific level in terms of the chemical make-up of the chlorine solution or the style of buckets distributed, but there is only passing reference to “messages” given to households to reinforce the importance of water treatment without further detail on these informational or educational components. | Poor |
| **Criterion #10**  **Process of Implementation:** Description of an assessment of the implementation process  (From CReDECI, Mohler 2012)3  **Explanation/Example:**  Process assessment is a prerequisite for determining the success of the intervention's implementation and should be an integral part of an assessment of the intervention’s effect. For example, "To gain insight into the dissemination and the delivery of the intervention and to draw conclusions about potential barriers and facilitators to implementing the intervention in other settings, data on the implementation process were collected alongside the randomized-controlled trial. Therefore, we assessed the quality of delivery of the interventional components (observed by members of the research team not involved in the delivery of the intervention) and the adherence to study protocol (number and type of deviations from the protocol, using a pilot-tested standardized form). We also analyzed barriers and facilitators for the delivery of intervention’s components (focus group interviews with intervention participants)." | No relevant text found, but need for further implementation in other settings to determine potential success of the intervention is mentioned. | Poor / None |