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Designing and Evaluating Health Promotion Programs

Simple Rules for a Complex Issue

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Abstract

Health improvement planning models exist to support strategic management of health improvement efforts and to guide program administrators in taking a comprehensive approach to health promotion planning from problem identification to program evaluation and diffusion. This article outlines a model which follows four simple steps to program design and four simple steps to program evaluation.

The first phase is characterized as the 4-Ss of program design, which includes size, scope, scalability, and sustainability.

The second phase is characterized as the penetration, implementation, participation and effectiveness (PIPE) Impact Metric. Penetration refers to the proportion of the target population that is reached with invitations to engage in the program or intervention. Implementation refers to the degree to which the program has been implemented according to the design specifications and the associated work plans. Participation refers to the proportion of invited individuals who enroll in the program according to program protocol. Effectiveness refers to the rate of successful participants. It is considered in the context of programming conducted in the real-world setting. The product of all elements of the PIPE Impact Metric can be calculated to represent the impact from a program administration perspective, while the product of participation and effectiveness can be calculated to represent the impact of the program from a user/consumer perspective.

The model is designed to inform program administrators about opportunities for improvement. First, administrative impact can be compared with user/consumer impact. Secondly, the PIPE Impact Metric total score, as well as its individual subscores, should be considered in the context of the 4-Ss of program design.

This model has been derived from work conducted in the applied setting, however it is based on scientific theory and appears congruent with findings from existing, but more complicated, models. The results of the application of the model indicate the presence of a simple set of rules related to critical health improvement program design and evaluation features. Whereas additional experience with the model will allow for further modifications and evolution, early experience indicates it serves program planners and administrators well in terms of systematic program improvement and documentation of effort and impact.

Health improvement planning models exist to support strategic management of health improvement efforts and to guide program administrators in taking a comprehensive approach to health promotion planning from problem identification to program evaluation and diffusion.[1-3] Many existing efficacy-based models tend to have a substantial degree of complexity in design and assessment methods. In the applied setting, however, the identification of simple rules that may guide health improvement program design and evaluation is urgently needed.[4] This issue becomes particularly salient as there is a need for programs to span across multiple settings and audiences, consider multiple behaviors, involve multiple intervention media, provide meaningful evaluations for its customers, users, and administrators, and, perhaps most importantly, provide meaningful data to continuously improve performance.[5] Whereas existing models serve a useful purpose, access to a simple operationally derived model that supports program applications and is designed to order data, information and knowledge regarding program design, implementation, and evaluation is currently lacking.

Translation of efficacy research into programmatic approaches with high effectiveness is more likely to succeed when simple rules guiding the complexity of real-world applications are identified.[4-6] To do so, program planners need to be informed by both science and practice. Considering the complexity of multi-level multivariate programming needs, it is important that approaches are guided and informed by current knowledge based on scientific principles. However, it would be a mistake to limit our creativity to the powers of prediction-and-control science as we may be tempted to believe that this kind of science may lead us to an understanding of the whole.[7] While retaining open-minded scientific spirit and the tradition of open, public validation of knowledge, we should look for ways to open up the field of inquiry to upward as well as downward causation, i.e. be ready to learn from real-world applications as they represent an unbroken wholeness.[8] Therefore, models that are based on operational reality, yet couched in scientific theory, appear to have substantial merit.

Systems thinking theory[9-15] represents an appropriate theory upon which to base the development of a suitable model for real-world application. Systems theory refers to the new sciences as a collective[9] and is grounded in the biological sciences.[9-15] These new sciences, or theories of self-organizing systems, are also known as the sciences of complexity. Defined population health improvement efforts[16,17] lend themselves well to a systems thinking approach since they are organized to reach the entire population and involve feedback loops for learning and continuous improvement. Previously, we have developed and documented a population health improvement model guided by systems thinking theory.[18] However, an accompanying program design and impact measurement approach was not included.

Often, when requests for programs occur in the applied setting, needs assessments have already been conducted, operational feasibility has been addressed, and resources have been identified. In short, the decision to address a particular problem or health issue has already been made. However, the method in which the work is to be conducted has not. This is a significant challenge facing operational divisions, departments and/or teams. Program managers need to respond with program designs that include short cycles of continuous improvement, effective implementation strategies, and, above all, maximum impact. Hence, a critical need for guidance on program design exists.

Population health improvement is a broad concept that involves health promotion, disease prevention and the reduction of risk for complications among those who already have adverse health conditions.[16-20] Programs designed to improve population health tend to be conducted systematically by identifying the problem, defining the scope, understanding the causes, intervening, and evaluating the effectiveness of the interventions.[1,16-19] Hence, successful programs include those that show a high degree of impact on the population of interest while exhibiting wise resource stewardship. Such programs help identify an important interaction between *a priori* identified resource use and the degree of effectiveness of a program in terms of attaining the success criteria aligned with the program's health improvement goals and objectives.

Resource use is of particular importance since it delineates

how much energy and effort will be devoted by an organization to meet the program goal(s). This involves a conscious decision regarding how much time, money, people, and other resources will be mobilized. In addition, efficiency becomes a predictor for resource utilization, particularly if multiple business units or departments are involved and program implementation occurs in a complex and multidimensional system such as the healthcare delivery system or the public health system. The way in which multiple departments, teams, or individuals work together needs to be recognized in program planning and delivery and is ultimately related to the overall program impact. Furthermore, consumer interest needs to be generated in the program in order to engage a sufficiently large number of individuals of the population and make progress toward the intended outcomes. Program effectiveness needs to be documented and reported in a way that directly relates the population shift toward the intended outcomes. It is important to recognize that the intended audience for a program represents the entire defined population, not only the subgroup of participants who have signed-up, enrolled and participated to a certain degree. From an applied perspective, all these issues are important and should be recognized and addressed in program design, delivery and evaluation.

1. Purpose

It is the purpose of this report to describe a set of simple rules identified to support population health improvement program design and evaluation. It is posited that this set of simple rules is also directly applicable to enhance the way in which individuals, teams, departments or business units work collaboratively towards shared objectives.

2. Overall Approach

Figure 1 depicts a schematic overview of the proposed model for designing and evaluating health promotion programs. It is characterized as a multi-level cascading model that first addresses critical elements of program design and then considers evaluation components that address program implementation and impact. Several considerations in the overall approach of the model include:

- The model is designed to support practical application and operational reality
- The model is not intended to represent a full program planning model; rather, it is intended to represent key features of program design that can optimize the chances for maximum impact once the program is implemented. Other components of program planning would include prerequisites to planning and evaluation such as the decision and justification for undertaking the effort as well as process models for the various components of program planning described here.[21]
- Following program design, key program evaluation features are outlined in a manner that allows for program impact monitoring. The model is therefore sequential in nature.
- The proposed impact metric recognizes a program user's or consumer's perspective as well as a program administrator's perspective. Whereas the bottom line of program impact may be most easily documented as the product of program participation and effectiveness, significant opportunity for improvement may be gleaned from information regarding various aspects of program implementation. Hence, a meaningful difference is depicted in how to assess the impact from these two perspectives.

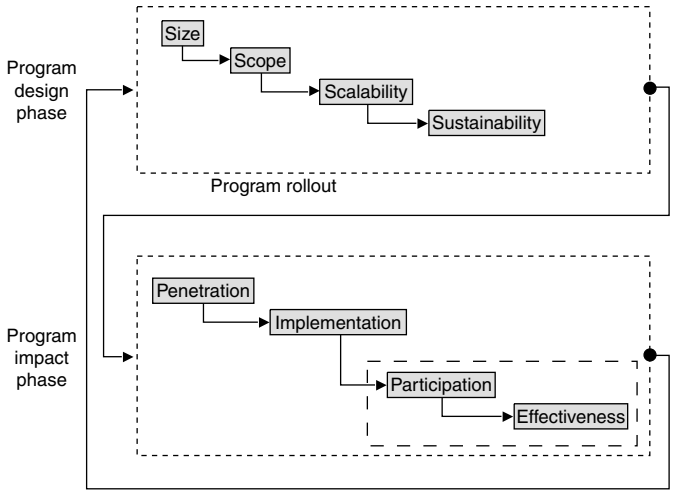

Fig. 1. An overview of the 4-S (size, scope, scalability, sustainability) design phase and the penetration, implementation, participation and effectiveness (PIPE) impact metric used as a model for program design and program evaluation.

Whereas the model outlined is sequential in nature and depicted in an essentially linear fashion, it is recognized that many of the underlying issues the model addresses are highly complex and non-linear. Behavior change, disease management, demand management, and health promotion programs are notoriously complex and inherently non-linear. The feature of the model that addresses this issue is the feedback loop built into the design that provides information gathered from the program evaluation phase that is fed back to the program design phase. This notion is consistent with other models, such as the Plan-Do-Study-Act cycle as outlined by Langley and colleagues.[4]

3. The 4-Ss of Program Design

Overall program design should recognize the challenges of major aims, critical mass and limited resources. Major aims relate

to the intended outcomes of the program. The design of the programs and interventions should not only address the degree to which a given individual needs to improve upon current health status, but also how a critical mass can be reached that allows the population as a whole to reach the desired endpoint. To that end, four critical components of program design are identified and described below. These four components are referred to as the 4-Ss of program design, which are size, scope, scalability, and sustainability.

3.1 Size

Size refers to the magnitude, extent, relative aggregate amount or number, or dose of the program or intervention that impacts upon the user, thereby creating the desired effect (i.e. effect size). Hence, size is a function of multiple aspects of intervention elements. For example, in the context of physical activity programming, size of the intervention relates to how often (frequency) and for how long (duration – accumulated time during the course of the day) a given individual participates in a given activity, the degree of exertion (intensity) involved in participating in a given activity and the type of activity (modality) in which a given individual participates.

Size, or the relative aggregate volume of an intervention an individual receives, is also closely related to the overall goals and objectives of the program. Again considering the case of physical activity, current guidelines indicate that approximately 1200–1500kcal of energy expenditure per week appears to be related to significant health benefits.[22] However, if the physical activity program is designed to meet goals and objectives in the context of long-term weight loss maintenance, total energy expenditures may need to more closely approximate 2500–3000kcal per week.[23,24] Therefore, depending on the specific aims of the program, intervention size is variable.

3.2 Scope

Scope refers to the range of program operations and the extent of program activities. The scope of a program designed to increase the level of physical activity of a defined adult population may, for example, limit itself to increasing the number of days per week in which individuals engage in moderate levels of physical activity, but will not consider increases in cardiorespiratory fitness. Alternatively, scope may be limited to reach the target population in worksites, medical care clinics and home-settings with targeted outreach approaches but will not include broad-based community outreach. If the primary audience for the program is adults, the program may additionally limit itself to one or more physical activity modalities that are acceptable, appropriate and of interest to the majority of the target population. Hence, the type of physical activity interventions endorsed, supported, addressed and marketed within the scope of this program may include walking and bicycling, but are not likely to include marathon training, high impact aerobics, or windsurfing.

Program scope may also refer to the number of behaviors or risk factors addressed. For example, if the program objectives are focused on improving the care of patients with diabetes, the scope of the program may include self-care strategies, physical activity promotion and achievement of healthy weight.

3.3 Scalability

Scalability refers to the ability of a program to follow a systematically timed, planned and graded series of steps that cumulatively account for the continuously increasing reach of a program until a critical mass is attained or the entire target population is engaged. Scalability is dependent upon multiple factors including, but not limited to, the willingness of members of the target population to participate,[25] per unit costs of the intervention in the context of total resource availability, effective use of all available media to recruit and engage individuals, and partnership potential with other stakeholders supporting similar goals. Marketing and advertising approaches need to be designed to reach and engage individuals within the population. This means that the messages should not only inform and increase awareness, but also engage and persuade individuals to take action.

3.4 Sustainability

Sustainability refers to the long-term, ongoing support for the program in relation to an accepted value proposition that balances allocated resources (e.g. time, money, people, or other available means) against generated revenues or benefits and includes the confirmation of long-term program support through adequate proof of performance.[18] In order to achieve sustainability, a health promotion program needs to be positioned as a sub-system within a higher-order system that involves all key stakeholders, allows for both input and feedback of these stakeholders, and systematically addresses program implementation, measurement, documentation, and monitoring of resource use. This process, described earlier as an integral part of a systems approach to population health improvement,[18] continuously documents the value proposition of the program for each of the key stakeholders in this process. The key stakeholders have previously been identified as the individual, the employer, the clinician or provider, and the health plan.[26]

4. The Penetration, Implementation, Participation and Effectiveness (PIPE) Impact Metric for Evaluating Health Promotion Program Impact

Once program design is completed, the program is activated and implemented. In order to monitor the degree of program impact on its outlined objectives and processes, several factors are identified as critical elements. The elements of this part of the model are termed penetration, implementation, participation and effectiveness, collectively referred to as the PIPE Impact Metric (see figure 1).

In the context of population health improvement programming, these four elements of the PIPE Impact Metric may be considered separate impact measures that each refer to equally important aspects of program activation. Yet, in addition to their unique contribution, they may also be considered integrally related since each single element on its own without the others will generate no impact.

Penetration and implementation are two elements more closely related to the investment of energy and effort that needs to go into bringing programs to the user (proximal to the program administrator, distal to the user/consumer), whereas participation and effectiveness reflect engaged users or consumers (distal to the program administrator, proximal to the user/consumer).[27,28] From a program administration perspective, overall program impact should reflect both the investments made to create the effect as well the outcomes among the population. Therefore, a net impact metric is considered, which is proposed as the multiplicative result of all four distinct elements of the PIPE Impact Metric.

From the users' or the customers' viewpoint, the impact that reflects the health generating capacity of the program may be all that counts – impact becomes the multiplicative effect of participation times effectiveness.[27,28] This impact metric, however, is more representative of a gross estimate of the total program impact evaluation. It does not take into account the investment that is needed to bring about participation and the desired effectiveness, whether this investment is considered in general terms of resource use or more specifically as in cost, time, or staff expertise and knowledge. When this investment is taken into account, the need exists to document this investment and subtract it from the gross estimate in order to obtain a net estimate. Using this method, the model can also be considered in the calculation of cost effectiveness estimations or return on investment calculations.

Section 5 describes each of the elements of the PIPE Impact Metric. In addition, an example is used to illustrate how the metric works. Actual data from a population-based physical activity program promotion is used in both the description of each of the elements as well as the discussion of how the metric can identify areas for improvement. The physical activity program is a walking program, called 10 000 Steps, designed to support individual efforts to increase lifestyle physical activity (http:\\www.healthpartners.com/10000steps).[29]

5. Elements of the PIPE Impact Metric

5.1 Penetration

Penetration refers to the proportion of the target population that is reached with invitations to engage in the program or intervention. Since this element represents a rate, it is extremely important that the population is defined *a priori*. Prior to program activation, this denominator needs to be clearly defined in order to avoid miscalculation and misrepresentation of the efforts and impact reported. In cases where the target population may not be explicitly known, a reasonable estimate should be made. If this is not possible, program administrators should consider this a reason to progress cautiously since the likelihood that scalability and sustainability will ever be achieved is doubtful.

The number of individuals in the target population who receive invitations and are exposed to strategies designed to engage them is directly related to the scalability component of the design phase. However, the degree of exposure to program engagement strategies is integral to the implementation element described in section 5.2. Penetration captures the notion of successful outreach to each individual of the target audience, not the intensity of such outreach.

5.1.1 Penetration Example

All HealthPartners (Minneapolis, Minnesota, USA) health plan members diagnosed with diabetes mellitus were identified as the target audience for a walking program promotion. The health plan used its administrative databases to create a registry of members with diagnosed diabetes mellitus and defined this group as the target population,[30] i.e. this group represents the denominator in the rate calculation for assessing program penetration. At the end of the measurement period, program documentation was reviewed and the outreach measurement to each of the individual members provided the numerator. Incorrect addresses, recent deaths, or recent relocations represent limiting factors in the coefficient associated with penetration. The number of members with diagnosed diabetes mellitus included in the registry was 16 968. Due to the limiting factors, 16 574 members were reached with messages about the walking program. Therefore, penetration was calculated as follows: (16 574/16 968) = 0.98 (98%).

5.2 Implementation

Implementation refers to the degree to which the program has been implemented according to the design specifications and the associated work plans. The implementation coefficient reflects program fidelity – the higher the degree of program fidelity, the higher the implementation coefficient since it represents the degree to which a program was implemented as intended. It is important to recognize that this factor is inclusive of all aspects of operations related to the program. That is, it represents work conducted across multiple teams, departments, and settings. All components of the work plan need to be considered here, particularly if individuals can only be reached if multiple settings work together. For example, a health plan sends program materials to a worksite coordinator who presents materials to the intended audience. In such a scenario, the work plan is dependent upon individuals in multiple settings and will be only partially implemented if one of the two groups does not follow-through as needed. Documentation of work plan completion is the data source for the numerator and all the work plan action steps to be implemented by all program providers represent the denominator.

5.2.1 Implementation Example

Following on from the example of the HealthPartners health plan members with diabetes mellitus taking part in a walking program promotion[29] (described in section 5.1.1), a review of the work plan outlined to implement the walking program for patients with diabetes mellitus revealed that 85% of the work plan was considered to have been implemented by the end of the measurement period. Hence, the implementation coefficient equals 0.85 (85%).

5.3 Participation

Participation refers to the proportion of invited individuals who enroll in the program according to program protocol. The denominator for the participation factor is the same as the numerator of the penetration factor, i.e. the proportion of the target population that is reached with invitations to engage in the program or intervention.

Participation is of significant interest by itself, both as a rate, as well as an absolute number. If participation is extremely low, it should prompt program administrators to investigate the reason for this. Participation may be a reflection of communication efforts (marketing, advertising), quality of collaborative materials, ease of enrollment procedures, and cost to the user, among other reasons. In addition, if the willingness of the population to communicate or participate in a health promotion program is low,[25] it may be necessary to shift focus from program implementation to raising awareness of the need to participate.

Whereas enrollment is an observable criterion for participation to be documented, attrition is also a consideration worthy of acknowledgment. In the PIPE Impact Metric it is suggested that the combination of participation and effectiveness (described in section 5.4) will effectively address the issue of attrition since participation in the context of effectiveness is linked to success. Attrition, on the other hand, indicates the notion that individuals did not meet a programmatically driven objective even though they may have been successful at meeting the program success criterion. For example, individuals may have dropped out prior to completion of the program, but this may be due to achieving their objectives prior to the last session.

Participation results should be considered in the context of how the population is defined. For example, public health types of programs are implemented for a large number of people. Even relatively low participation may bring about large differences in health risk reduction between participants and non-participants, especially if those of higher needs participated more fully.

5.3.1 Participation Example

In the HealthPartners health plan members with diabetes mellitus example used thus far,[29] 2752 patients were enrolled in the walking program as a result of the outreach program. Hence, the coefficient for the participation factor in this example equals (2752/16 574) = 0.17 (17%).

5.4 Effectiveness

Effectiveness refers to the rate of successful participants. It is considered in the context of programming conducted in the real-world setting. The criterion for success is defined as part of the design phase and should be closely related to the anticipated health benefit that, in turn, is associated with reduction of health risks.

Effectiveness is sometimes difficult to quantify due to lack of individual-level program outcomes. Particularly in the context of real-world health improvement programs, the need for simple, yet sufficiently informative measures of effectiveness is high. This type of measure may be based on self-report, clinical data or program administration data. Unfortunately, the incentive for individuals to continue to report on their progress is often lacking. Therefore, it is important from a program administration perspective to build incentives and continued contact opportunities into the program design.

The denominator used for the calculation of effectiveness is the same as the numerator of the participation factor, i.e. the proportion of the target population that is reached with invitations

to engage in the program or intervention. The numerator for the calculation of effectiveness is represented by the number of individuals who met the success criterion for the program.

5.4.1 Effectiveness Example

In the example of the walking program for health plan members with diabetes mellitus,[29] success was defined as reaching on average a minimum of 8000 steps per day during the last week of an 8-week intervention designed to increase the number of accumulated steps to 10 000 per day. Due to the program design, documentation is only available from those individuals who returned their 8-week step-log. Despite the availability of incentives to return walking logs at the end of 8 weeks, not all participants returned the log. Hence, the criterion for success among the participants is considered a conservative estimate. Of the total number of participants, 1250 met the success criterion. Hence, the effectiveness coefficient was (1250/2752) = 0.45 (45%).

6. Calculation of the PIPE Impact Metric

To complete the calculation of the PIPE Impact Metric from an administrative and a user's perspective, each of the factors and its coefficients (subscores) are used as follows: the impact from a program administration perspective is represented by the product of all PIPE Impact Metric elements, i.e. penetration × implementation × participation × effectiveness. Using values derived from the walking program for health plan members with diabetes,[29] an example of this is as follows: $0.98 \times 0.85 \times 0.17 \times 0.45 = 0.0637$ (6.37%). The impact from a user perspective is calculated as the product of participation and effectiveness, i.e. $0.17 \times 0.45 = 0.0765$ (7.65%).

The difference between the administrative and the user/consumer perspective is not large, a reflection of the relative high scores in the coefficients of penetration and implementation. A review of all subscores points out that the participation factor reflects the greatest opportunity for improving overall program impact. Questions should be asked regarding how and where changes in the overall approach of the program should be made. For example, program administrators may ask:

- Did the communication strategy clearly describe the enrollment process?
- Did the target audience recognize the benefits of the program?
- Was there sufficient time for the target audience to consider enrollment between the invitations and the participation measurement time?
- Were the incentives to enroll sufficiently strong?
- Was the outreach strategy of a sufficient intensity to anticipate a higher participation rate than what was observed?
- Is the participant enrollment fee too high?
- What are the potential barriers to participation as considered from the target audience perspective?

Considering that participation reflects the greatest opportunity for improving impact, it may well be that scalability in design is lacking, perhaps due to lack of effectiveness or volume of program marketing efforts. If this is considered a reasonable assumption, the implementation step and the work plan may be adjusted. The PIPE Impact Metric can then again be used to document changes in impact for the next measurement period.

7. Discussion

As outlined in figure 1, the model is designed to inform program administrators about opportunities for improvement. The closed-loop nature[18,19] of the model allows for this to occur at several points. First, administrative impact may be compared with user/consumer impact. If the difference between these two is large, then changes can be instituted relatively quickly by adjusting the work plan and/or increasing the number of people invited to the program. If the difference between the two is small, then a review of the work plan components as well as the program design elements will be needed, especially if participation, effectiveness, or both have low coefficients.

Secondly, the PIPE Impact Metric total score, as well as its individual subscores, should be considered in the context of the 4-Ss of program design. Total and subscores may inform program administrators about areas for improvement. For example, penetration coefficients may be considered in the context of program design aspects of scope and scalability whereas effectiveness may be considered in the context of size. Clearly, each coefficient may drive a series of questions that will have a direct effect on changes and improvements of the program and its evolution.

In the context of limited resources, program administrators are always forced to question major issues and considerations – how many people are affected, what kind of return will the effort produce, does the effort match organizational priorities? Considering a defined population, the question becomes fairly simple, fairly quickly: 'How can we reach most or all people with the least amount of resources and the best outcomes?' From this perspective, it becomes clear that all elements of the 4-Ss of program design and the PIPE Impact Metric are relevant. In fact, outcome measures may be considered in a variety of domains and still all elements of the model remain relevant. Behavioral outcomes (physical activity, smoking, substance abuse), clinical health outcomes (glycosylated hemoglobin, low density lipoprotein), cost outcomes (inpatient costs, outpatient costs), or indirect costs (absenteeism, quantity of work performed, quality of work performed) all fit the same process outlined in the model. In addition, the model may be considered not only in health promotion and

disease prevention programs, but also in medical management, case management, or other aspects of care delivery. All elements of the model are considered equally important, as exemplified by the nature of the PIPE Impact Metric – if any of the four PIPE elements is equal to zero, the entire effort will have zero impact (since the impact from a program administration perspective is represented by the product of all PIPE Impact Metric elements, as outlined in section 6).

7.1 Collaboration

One of the consequences of implementing the model is that it creates an opportunity to quantify the reason for effective collaborations among intra- and inter-organizational entities. Often, multiple departments or organizations work together to achieve agreed upon objectives for the benefit of all involved. However, since different departments and organizations often function as independent units with little operational overlap, a silo-effect occurs and gaps in operational efficiency create loose connections and loss of effectiveness. The proposed model allows for a means to document overall impact as well as several critical elements of operational performance. Reflecting upon each of these elements may support the identification of disconnects among multiple stakeholders and, perhaps more importantly, reduce the identified gaps and improve connectiveness.

7.2 Limitations and Strengths

In the absence of normative data, the precise meaning of the overall PIPE Impact Metric score remains unknown. Furthermore, the meaning of the inter-relationship among each of the PIPE Impact Metric elements and the interaction among the PIPE elements and the 4-Ss of design is not known. However, these interactions are clearly related to opportunities for improvement. At this time, applications of the model to various interventions and programs may serve as unique case studies until further research allows for identification of trends and normative data. These data could emerge as a result of disease-specific, behavior-specific, or outcomes-specific evaluation efforts being applied to the application of large-scale, real-world health improvement efforts.

On the other hand, strengths of the proposed model include its simplicity. A simple approach that systematically guides program administrators to follow a path leading to critical elements of program design and impact measurement will also allow for the systematic identification of program improvement and, ultimately, higher levels of success and impact. In addition, the approach can support collaborations within and among organizations that is the result of and the impetus for sustained program success.

8. Conclusion

A simple model has been outlined that describes a systematic approach to health promotion program design and evaluation. The model outlines four simple steps to program design (size, scope, scalability and sustainability) and four elements related to program impact measurement (penetration, implementation, participation and effectiveness). This model has been derived from work conducted in the applied setting, however it is based on scientific theory and appears congruent with findings from existing, but more complicated, models. The result of the application of the model appears to confirm the presence of a set of simple rules related to critical health improvement program design and evaluation features. Whereas additional experience with the model will allow for further modifications and evolution, early experience indicates it serves program planners and administrators well in terms of systematic program improvement and documentation of effort and impact.

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