

# Health Promotion Strategies

---

## **A Critical Analysis of the Advance Market Commitment**

Written by Kate Magner

For Michael Goodstadt

Spring 2009

## **A. Introduction**

### ***Health, Health Promotion and Global Health***

The Ottawa Charter conceptualizes health as a positive concept and a resource for everyday life. Defined as such, health is contingent on a range of social, political and economic determinants which exist outside of the health care sector and which have serious implications for physical, mental, emotional and spiritual wellness.

Health promotion is the process of enabling people to increase control over, and improve their health.<sup>i</sup> Given the emphasis on the values of empowerment, participation and inclusion found in health promotion, communities tend to be the central locus for practice. Though enduring and essential, the inherent localism of this tendency renders such practice insufficient for grappling with emerging global health concerns.<sup>ii</sup> Global health refers to the multi-dimensional, transnational impact of globalization<sup>1</sup> upon determinants of health and health issues.<sup>iii</sup> Threats to health, as they are understood by the global health paradigm, operate beyond the scope of individual nations or institutions. Global health issues, therefore, demand a creative, comprehensive, health promotion practice, which is at once both inherently global yet still, acutely aware of community contexts and individual wellbeing. The socio-ecological approach to health promotion offers a framework through which one may conceptualize global health issues and determinants without losing sight of individuals or communities.

### ***Socio-ecological Health Promotion and the Intervention Mapping Approach to Planning and Practice***

The socio-ecological approach to health promotion practice emphasizes the complex interaction between individual behaviour and environmental determinants. It also recognizes that individuals are nested within families, communities, organizations, societies and the global context, and that these varied loci of existence shape health. The socio-ecological approach encourages practitioners to integrate system-wide interventions with person-focused efforts to modify behaviour and/or environments.<sup>iv</sup> Because of its emphasis on complexity and system-wide intervention, the socio-ecological approach has been regarded as challenging to operationalize.<sup>v</sup> The Intervention Mapping approach, as developed by Bartholomew et al, “helps planners take on this complexity in a structured, systematic way, thereby making it more manageable without oversimplifying”.<sup>vi</sup>

This paper will employ elements of the Intervention Mapping approach in order to critically examine the pilot initiative of the GAVI Alliance’s Advanced Market

---

<sup>1</sup> Globalization has been defined in many different ways. For the purposes of this paper, globalization will be understood as “a function of technology, culture, and economics leading to a compression of time, space and cognition (awareness of the world)” (Labonte, Ron. 2007)

Commitment (AMC), from a socio-ecological standpoint. The AMC is an innovative public health initiative, which strives to increase the availability of effective pneumococcal vaccines to developing countries. This paper will provide a background summary of the global health issue, an analysis of the values, theories and evidence which inform the AMC, a discussion of the goals and objectives and an outline of the methods, strategies and activities employed through the intervention. The remainder of the paper will be devoted to a discussion of the shortcomings of the AMC as a health promotion intervention in practice and to a proposition of a more ideal approach to dealing with the global health problem of pneumococcal disease. Finally, this paper will propose an action plan for moving the current AMC intervention toward the recommended ideal.

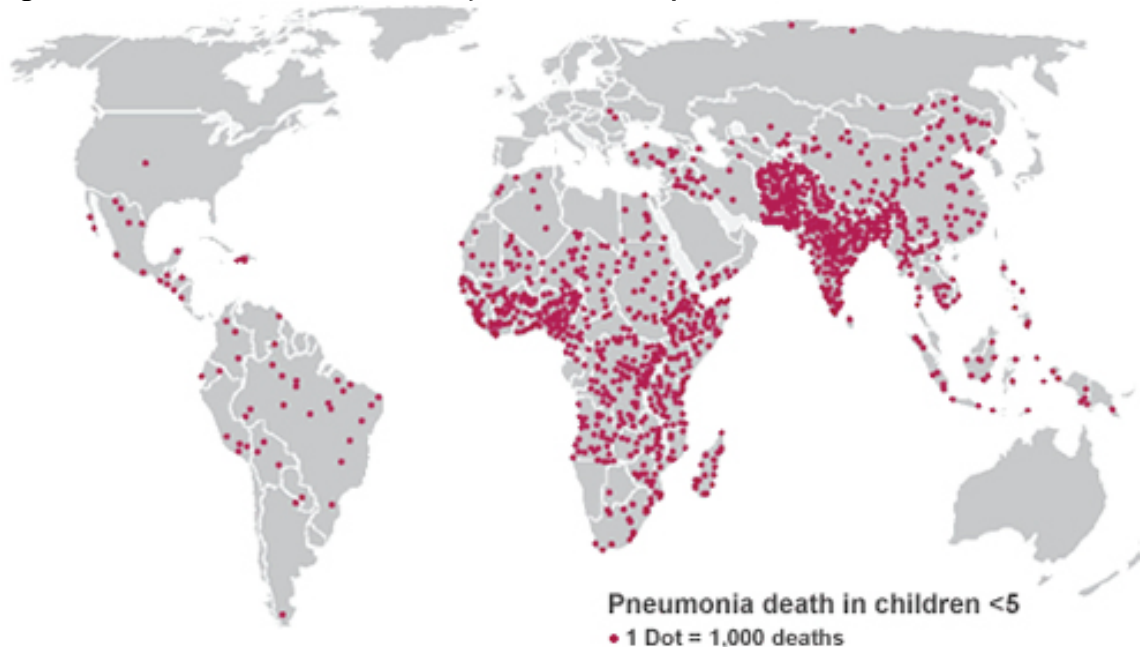
## **B. Background to the Advance Market Commitment**

### ***Pneumococcal Disease***

*Streptococcus pneumoniae*, also known as pneumococcus, is the etiological agent associated with invasive and non-invasive pneumococcal disease. Non-invasive manifestations of the disease include otitis media, sinusitis and bronchitis. Among invasive pneumococcal infections are pneumonia, meningitis and sepsis. In the developed world, the burden of disease associated with pneumococcus falls disproportionately on young children, the elderly and those suffering from chronic disease or immune deficiencies.<sup>vii</sup> Until recently, pneumococcus was very sensitive to penicillin, though even with appropriate antibiotics, invasive disease carries a high risk of mortality. More recently, the emergence of penicillin resistant strains has led to increasing use of cotrimoxazole and amoxicillin, however increasing resistance to these antibiotics is making treatment more difficult and expensive.<sup>viii</sup>

Since 2000, a vaccine against pneumococcal disease has been available in developed countries. Though successful at reducing the burden of disease in these regions, the vaccine does not target the strains of pneumococcal disease most prevalent in the developing world.<sup>ix</sup> This is problematic given that the largest burden of pneumococcal disease lies in developing countries. Indeed, the World Health Organization estimates that about 1.6 million people in developing countries, die every year of pneumococcal pneumonia, meningitis and sepsis. 1 million of these deaths are children under the age of 5 (see Figure 1).<sup>x</sup> In populations with high rates of child mortality, pneumonia is typically the leading infectious cause of mortality and accounts of about 20-25% of all child deaths.<sup>xi</sup> “Pneumonia kills more children than any other illness – more than HIV/AIDS, malaria and measles combined.”<sup>xii</sup>

Figure 1: WHO estimates of child mortality associated with pneumococcus<sup>xiii</sup>



A number of risk factors are associated with the disproportionately high burden of pneumococcal disease in the developing world (See Appendix 1). These encompass a range of social determinants of health including overcrowding, poor hygiene and sanitation, malnutrition, poor indoor air quality and pollution, all of which are directly or indirectly a result of poverty, marginalization and a lack of power.<sup>xiv</sup> In addition to this range of social determinants, factors such as inadequate health services, the deficiency of appropriate vaccines, and a lack of information regarding the burden of disease in the developing world, have a profound impact on the grave epidemiological consequences of the disease.<sup>xv</sup>

Finally, the disregard by the international community for pneumococcal disease can be understood as a force in fuelling mortality attributable to the disease. Until recently, the international response to this public health calamity has been inadequate. Although 98% of deaths attributable to pneumococcal disease occur in the developing world, public health interventions have been largely focused on the manifestations of the disease found in developed countries.<sup>xvi</sup> As such, pneumococcal disease has become scarcely a concern to most of the world's wealthiest countries, institutions and individuals. Indeed, UNICEF describes the disease as the "silent killer of children", since it had, until recently, largely fallen off the radar of those outside the global South.<sup>xvii</sup> This neglect has significant global public health implications and will be a considerable impediment in realizing the fourth Millennium Development Goal of a two-thirds reduction in child mortality by 2015.

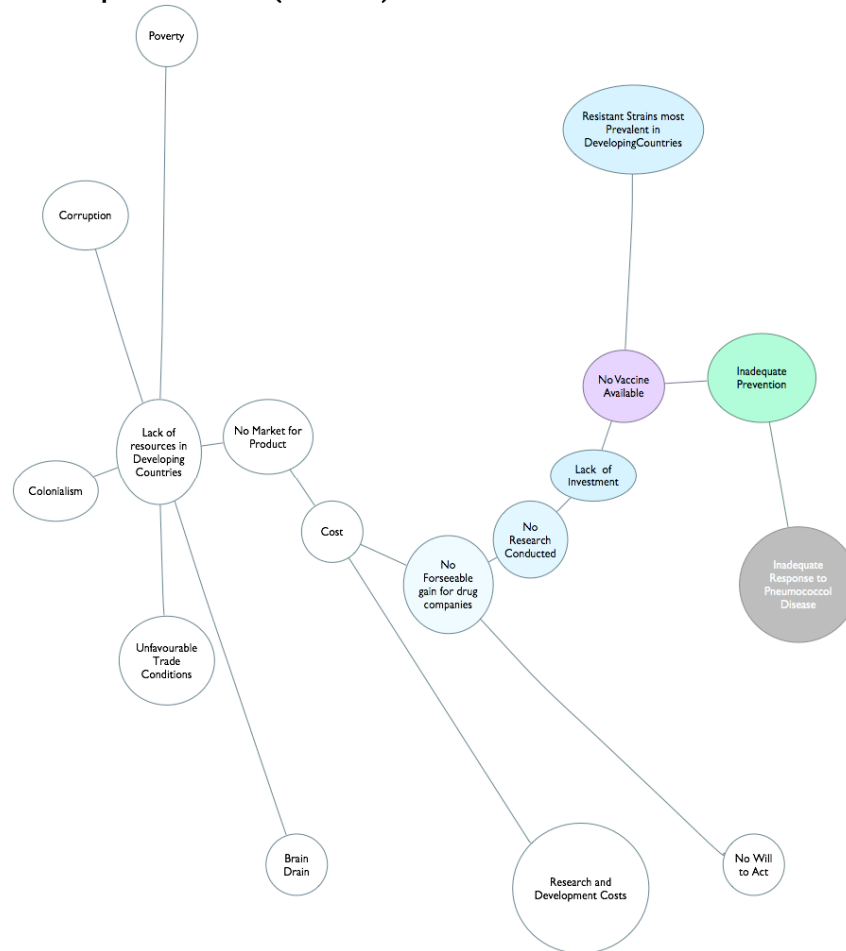
### **Response: The Advance Market Commitment**

Though the factors underlying risk of morbidity and mortality attributable to pneumococcal disease are varied, it is widely believed that vaccines are the most efficient and cost effective mechanism to reduce such risk.<sup>xviii</sup> In 2000, a 7-valent pneumococcal conjugate vaccine was approved in the United States and included in routine childhood immunization programs. It conferred immunity against the seven common strains of *Streptococcus pneumoniae*, found in the US. The vaccination of American children appears to have achieved herd immunity in the country.<sup>xix</sup> Notably, *Streptococcus pneumoniae* has 91 serotypes and between 20 and 25 of these strains are responsible for the vast majority of cases worldwide. The 7-valent pneumococcal conjugate vaccine is therefore, ineffective in many cases across the globe. Moreover, even where deemed effective, the 7-valent pneumococcal conjugate vaccine has been said to be far too expensive for inclusion in immunization programs in the developing world.<sup>xx</sup>

The global need for new, multi-valent vaccines is evident. Accordingly, in 2007, the Global Alliance for Vaccines and Immunization (GAVI Alliance) embarked on a creative, new strategy to provide incentives for pharmaceutical companies to research develop and produce vaccines for developing countries. This strategy is called the Advance Market Commitment (AMC), and its pilot project is pneumococcal vaccines.

It is important to note that, as previously elucidated, pneumococcal disease is a consequence of a range of interrelated determinants, including but not limited to a lack of vaccines. This is illustrated in the problem map in Appendix 1. The GAVI Alliance's AMC strategy, however, only targets one branch of this map, as seen in Figure 2. GAVI's unilateral strategy can be understood as imbedded in both its mission, "to save children's lives and protect people's health by increasing access to immunization in poor countries", as well as in the dominant belief that vaccines are the most effective way to fight the spread of *Streptococcus pneumoniae*.<sup>xxi</sup> Nonetheless, the exclusion of additional determinants from GAVI's explicit consideration may have an impact on the effectiveness of the AMC strategy.

**Figure 2: Problem Map – Prevention (Vaccines) Branch**



### **Governance and the AMC**

The AMC pilot will be established and implemented over a 13-year period, from 2007 to 2020. To best sustain the initiative over this time frame, the AMC functions have been divided and allocated to the World Bank and the GAVI alliance. The World Bank is responsible for providing financial and administrative services for the AMC. The GAVI alliance hosts the AMC Secretariat and supports the operational and programmatic functions of the AMC.<sup>xxii</sup>

The World Bank is a proponent of economic development and is the world's largest source of development assistance. With a vision of inclusive and sustainable globalization, it strives to reduce poverty by providing low-interest loans and interest-free credits to developing countries. Though it purports noble objectives, the World Bank has been widely criticized for its adherence to neoliberal ideology and its dependence on the global free market to allocate development resources. The World Bank is a partner of the GAVI alliance.

The GAVI Alliance is a multi-sectoral alliance of stakeholders in both the public and private sectors, which strives to increase effective immunization in developing

countries.<sup>xxiii</sup> Its membership includes country governments, research and technical institutes, the vaccine industry, civil society organizations, the World Bank, WHO, UNICEF, and the Bill and Melinda Gates Foundation. In its attempt to fund and support immunization programs, the GAVI Alliance has employed a number of unique strategies, which are built on the synergies that they believe to emerge from public-private partnerships.

## PART 2: FOUNDATIONS

### A. Values, Theories, Evidence

#### *Epistemological underpinning of the AMC*

Although the AMC's underlying goals and objectives are broad and multifaceted, the intervention's core objective is to improve vaccine production, and accordingly its tactics are targeted primarily at the individual and environmental determinants of the production outcomes. The following analysis, will, therefore, concentrate chiefly on the values, theories, evidence and epistemology that lie behind the AMC intervention at the level of production.

The AMC is informed by a positivist epistemology. Positivism presumes that science is relatively neutral and can serve as an unbiased, non-ideological instrument for discovering reality.<sup>xxiv</sup> Often equated with experimentation and hypothesis testing, positivism claims a single, objective way of knowing.<sup>xxv</sup>

The positivist epistemological underpinnings of the AMC mediate the foundations of the intervention. Indeed, the values, theories and evidence employed by the AMC reflect an adherence to positivist ways of knowing. These multidimensional foundations are depicted in Figure 5.

Figure 5: Foundations of the AMC





## **Values**

The underlying values of the AMC explicate the rationale behind the intervention. Indeed, one of the central, stated values of the AMC is equity. Its strategy therefore is guided by the principle of promoting health equity within and between countries through immunization services. In conjunction with equity, the AMC is informed by an ethic of social justice. This is inferred by the intervention's overt commitment to achieving the Millennium Development Goals, and in particular to its dedication to ending preventable child mortality. Interestingly in addition to principles of equity and social justice, the AMC values competition. The initiative understands competition as a necessary force fuelling innovation, which is another fundamental value of the intervention. It is clear that the AMC values innovation since it operates based on a creative and inventive funding model, and it encourages scientific innovation on the part of pharmaceutical companies.<sup>xxvi</sup>

In addition to these conceptual values, the AMC also values tangible results, high-level performance, sustainable development and autonomous decision-making.<sup>xxvii</sup> Accordingly, it is heavily reliant on forecasting and evaluation and it encourages transparency at every level of operations. It does, however, promote country driven decision-making, nationally driven priority setting and autonomous, country-based budget processes. These efforts are an endeavor to promote sustainable, locally defined development.

## **Theories and Ideologies**

As posited by David Buchanan, in the positivist perspective, theories form statements about relationships, from which hypotheses can be deduced.<sup>xxviii</sup> The most common uses of theories therefore, are to assert explanations and to make predictions. It is in this light that theory underpins the AMC intervention.

The central ideology that guides the AMC and informs its theoretical foundations is liberalism. Liberalism is a political ideology that considers individual liberty and equality to be the most important political goals. In its effort to achieve these lofty and arguably contradictory objectives, liberalism promotes minimalist governments, privatization and free market economics. Specifically, liberal theories believe in Adam Smith's "invisible hand", or the power of the market to allocate resources efficiently, in order to promote growth. Implicit in this assumption is the hypothesis that if GDP grows, then development ensues through the 'trickle down effect'.<sup>xxix</sup> While this hypothesis has been widely refuted by development practitioners and theorists, it continues to shape most large-scale global development initiatives.

Liberalism (and its modern manifestation, neoliberalism) and its theory of market-based development underpin the AMC. Specifically, the AMC understands markets to be the most efficient way to allocate resources. They acknowledge, however, that markets have a tendency to marginalize the poor. Accordingly, Michael Kremer, the originator behind the AMC concept claims that the intervention

is a unique way by which to utilize markets for development, since it makes markets work for the poor. In his landmark report *Making Markets for Vaccines*, Kremer claims that the AMC would “stimulate the allocation of commercial research funds to neglected diseases and so harness the energy, experience and expertise of the private sector”.<sup>xxx</sup> Accordingly, rather than disrupt the workings of the market in order to achieve development objectives, the AMC works with the market and creates market-based incentives to motivate pharmaceutical companies to allocate their resources.

In this instance, pharmaceutical companies are assumed to be acting in a self-interested fashion so as to minimize their costs, or risks, and maximize their benefits. This behaviour exemplifies rational choice theory.<sup>xxxii</sup> Indeed, the notion that economic intervention can alter market neglect though the creation of incentives presupposes that such incentives will be seen as beneficial and will influence decision-making.<sup>xxxiii</sup> This presumption is a fundamental feature of the AMC’s strategy. One may deduce, therefore that rational choice theory is an underlying foundation of the intervention.

Another underlying foundation of the intervention is its allegiance to the public-private effect. GAVI claims that “building on public sector expertise in health and development, with the acumen of private individuals and organizations the power of the public-private partnership continues to deliver”.<sup>xxxiii</sup> This claim may be indicative of the coalition theory. The coalition theory suggests that individuals and groups form partnerships to manage and influence their environments.<sup>xxxiv</sup> Although each of these individual factions may represent unique interests, they all share one common goal. Coalitions cycle through three stages including formation, maintenance and institutionalization.<sup>xxxv</sup> In the case of the AMC, the intervention was the central goal and the GAVI Alliance operated as the lead agency for formation, thereby creating linkages between the various public and private partners. Coalitions such as the public private partnership behind the AMC, are said to be powerful entities since they unite the public sector’s obligation to public health, with industry’s expertise in research and development. There appears to be great potential in public-private partnerships, therefore, to remove social and economic barriers to issues global health development.

## **Evidence**

The AMC is currently in its pilot phase. As such it is relatively ground breaking and cannot be easily compared to other broad-based public health initiatives. It is, therefore, difficult to determine whether a causal relationship exists between the intervention and the desired outcome, since no longitudinal studies have been conducted on this specific topic.

Evidence has, however, been used in the planning and development of the AMC intervention. Indeed, the use of evidence in the AMC is two-pronged. First, biomedical evidence informed the decision to target pneumococcal disease for the AMC pilot. Recommendations from numerous governments, UN agencies,

foundations and experts played an influential role in shaping this decision. Of particular note were randomized control trial evidence suggesting increasing antibiotic resistance to treatment of pneumococcal infections.<sup>xxxvi</sup> Additionally, speculative evidence based on historical experience suggested that in the absence of a broad-based strategy such as the AMC, no pneumococcal vaccines would reach the world's poorest populations until 2023.<sup>xxxvii</sup>

Secondly, economic modeling was employed as a form of evidence in order to speculate on the effectiveness of the intervention. Indeed, economic forecasting appears to have been an essential factor in determining the initiation of the AMC.<sup>xxxviii</sup>

## **B. Goals and Objectives**

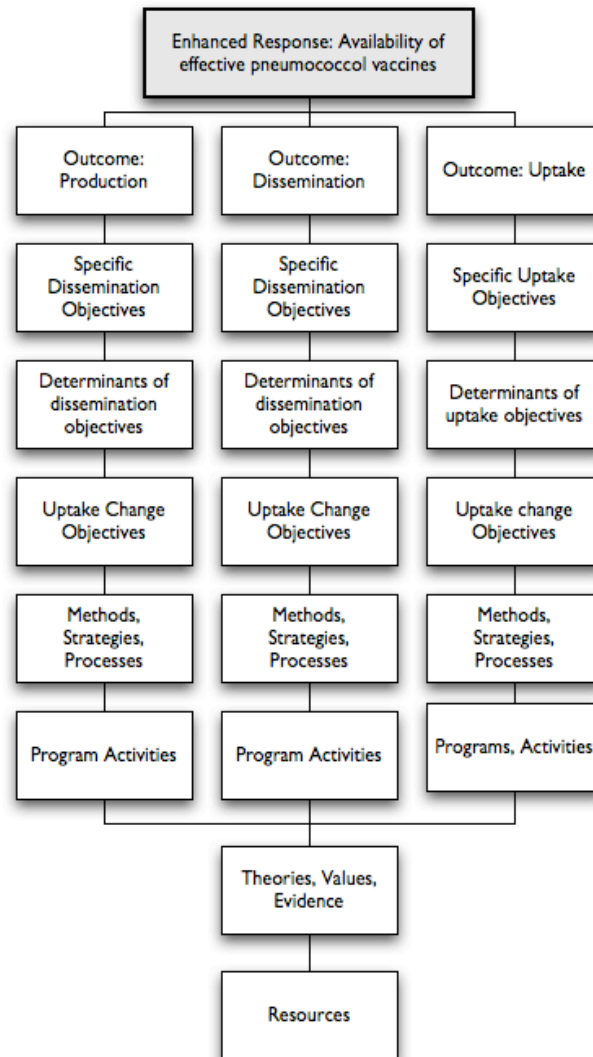
### ***The AMC and its Underlying Goal***

Developing countries can rarely afford to incorporate new, expensive and patented vaccines into their immunization strategies, despite the potential public health benefits of doing so. Market failures of this type inhibit rapid product development since the pharmaceutical industry has little motivation for investing in the research and development of drugs that are likely to have weak uptake, including those targeted at diseases found predominantly in the developing world. Accordingly, in 2007, the GAVI alliance launched the AMC as a means to create stronger incentives for pharmaceutical companies to make investment in these important and often ignored areas of disease. Specifically, the AMC creates incentive for pharmaceutical companies by making the financial commitment to purchase a set number of vaccines and to create an affordable market for these vaccines in the long run.<sup>xxxix</sup>

The AMC is an example of a public-private approach to public health financing. The pilot AMC, which will target pneumococcal disease, was launched in 2007. Canada, Italy, Norway, Russia, the United Kingdom and the Bill and Melinda Gates Foundation have committed a total of \$1.5 billion to the launch of this initial AMC.

The underlying goal of the pilot AMC is to increase the availability of effective pneumococcal vaccines. As seen in Figure 3, this goal can be understood as contingent on two environmental outcome variables, associated with production and dissemination; and one individual outcome variable, associated with the uptake of the vaccines. Although production is the crux of the AMC strategy, the GAVI alliance recognizes dissemination and uptake as fundamental factors in determining the success of the intervention.

Figure 3: Intervention Map: the AMC (adopted from Bartholomew et al and Snowden et al.)



### Specific Objectives

The specific objectives of the AMC are related to the three central outcome objectives of production, dissemination and uptake of vaccines (see Figure 4). Each of these outcome objectives is incorporated into the Target Product Profile, a scheme developed by GAVI to delineate the specifications for a potentially eligible vaccine. The guiding principle of these specifications is the suitability of the product for use in the countries targeted for the program.<sup>xi</sup> The Target Product Profile outlines criteria regarding the public health impact and appropriateness of the product, covering measures such as vaccine efficacy, safety, sustainability, dose-scheduling, target population, vaccine presentation and appropriate packaging.<sup>xli</sup>

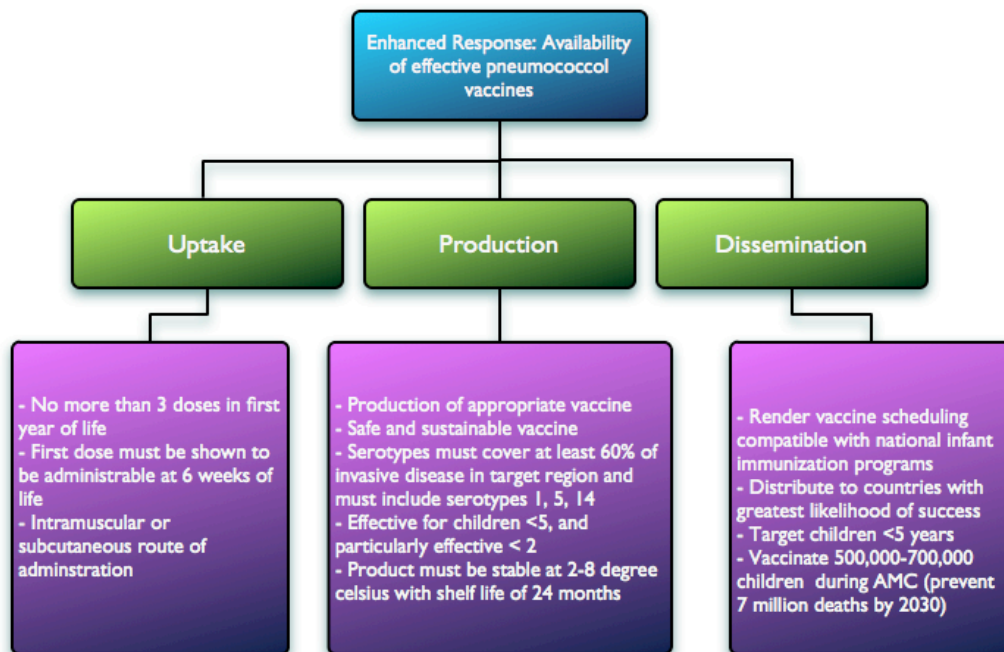
Broadly speaking, the production objectives of the AMC entail increasing private sector investment in pneumococcal vaccine research and development.

Specifically, this involves creating safe vaccines, which are effective with serotypes found in developing countries, which cover at least 60% of the disease in the region, and which have a number of product properties such as a 24-month shelf-life and stability at 2-8 degrees Celsius. Production objectives also involve an explicit focus on generating vaccines for children under the age of 5, and expressly those under the age of 2.

Correspondingly, the dissemination objectives of the AMC involve targeting children under 5 in order to vaccinate between 500,000 and 700,000 during the AMC period. Additional dissemination objectives include purposively targeting countries with the financial capacity, political will and health status, to ensure the success of the program, and integrating the pneumococcal vaccine into the national infant immunization programs of these countries (See Appendix 2 for list of GAVI-approved countries).

Finally, the uptake objectives, which are more individually focused, are centered on appropriate dosage and route of administration.

**Figure 4: Intervention Map: Objectives of the AMC (adopted from Bartholomew et al and Snowden et al.**



### Determinants of Objectives

According to the Intervention Mapping approach, the achievement of outcome objectives is contingent upon certain, specific performance objectives. Performance objectives refer to the particular actions that actors will take in order to change behaviour or modify an environment. These performance objectives are, in

turn, mediated by a series of individual and environmental determinants. Determinants, in this instance, are considered to be the factors that influence the accomplishment of outcome objectives.

As demarcated in the intervention map depicted in Figure 3, each of the AMC's outcome objectives is shaped by a number of individual and environmental determinants. A critical analysis of the AMC intervention elucidates the complexity of these variables. Though proponents of the intervention explicitly acknowledge some pertinent determinants, others are more nuanced and can only truly be inferred.

Bartholomew suggests that "those factors which rest within individuals and are subject to their direct control" can be understood as personal determinants of change objectives.<sup>xlii</sup> Drawing from the work of Bartholomew et al, this paper will employ the notion of individual determinants, rather than personal determinants. This will be done in order to acknowledge that the AMC intervention is not attempting to change the personal behaviour of those at-risk of disease, but rather is attempting to change the individual and organizational behaviour of those who have the potential to prevent the disease, such as pharmaceutical companies, donors, governments and health providers. While the success of the AMC is indirectly contingent on the uptake behaviour of those at-risk, this is not the primary objective of the intervention.

Similarly, Bartholomew identifies environmental determinants as those factors, which operate outside of the control of the individual and influence their health behaviour or environmental conditions. Once again, for the purposes of this paper, the individual will not be conceptualized as the person at risk of disease, but rather will be understood as those with potential to prevent the disease.

The individual determinants of the AMC outcome objectives operate in varied ways to influence each of the outcomes independently. Individual determinants of production objectives are the factors that mediate the behaviour of pharmaceutical companies to respond to pneumococcal disease via the production of vaccines. These include the knowledge of how to produce vaccines, a belief that such production will result in positive returns and a valuing of scientific discovery, public recognition for such discovery, and financial reward for such discovery. Individual determinants also include organizational self-efficacy, or the belief on the part of the pharmaceutical company that it is capable of executing a course of action (research and development), to attain a certain goal (vaccine production).

The environmental determinants of the AMC's production objectives include social influences such as the socio-political pressure to produce vaccines for neglected diseases, the social expectation of innovation on the part of the pharmaceutical industry, and the intersectoral competition associated with intellectual property and new pharmaceuticals. Environmental determinants also include structural influences such as access to resources and capital, an organizational capacity to produce vaccines and a certain level of research competence. In the case of the AMC, underlying forces of altruism and empathy, exhibited by Bill and Melinda Gates, largely shape these environmental determinants.

Indeed, the Bill and Melinda Gates foundation has contributed \$1.5 billion to the GAVI Alliance.<sup>xliii</sup>

Many of the individual and environmental determinants of production have been identified and accounted for through the AMC. Conversely, determinants of dissemination and uptake have only received cursory attention in the AMC strategy. The individual determinants of vaccine dissemination include the national knowledge about the efficacy of vaccines, the national belief that vaccines are effective and desirable public health measures and the national values of public health and disease prevention. They also include a strong sense of national self-efficacy, or the internal belief that the country is capable of disseminating vaccines and that doing so will have favourable implications.

The environmental determinants mediating dissemination include social influences such as national support for immunization. Importantly the dissemination of vaccines is also heavily reliant on a number of structural determinants such as resources and logistics. Indeed, effective dissemination is mediated by vaccine procurement, human resources and training, national financial capacity and stability and physical resources to support the cold-chain storage and safe administration of the vaccine.

Although the efforts of the AMC to produce pneumococcal vaccines, are ultimately intended to have an impact on individual lives, the intervention does not explicitly address determinants of uptake by individual recipients. In this instance, Bartholomew's definition of personal and environmental determinants as affecting individual behaviour is more relevant and will be employed for analysis. Personal determinants associated with the uptake of vaccines for pneumococcal disease include holding the belief that immunization will have favourable health consequences, holding value in western medicine, and having knowledge about the efficacy of vaccines. Environmental determinants include social trust and norms around immunization and resources needed to access immunization programs.

## **PART 3: ACTIONS**

### **A. Methods, Strategies and Processes of the AMC**

In the Intervention Mapping approach, and for the purposes of this paper, methods are general techniques for influencing changes in the determinants that inform performance objectives. Strategies, then, are the specific activities undertaken for the application of methods within a given context.<sup>xliv</sup> Finally, though not explicitly addressed by Bartholomew et al, processes are considered in this paper as the mechanisms through which strategies or activities unfold.

Broadly speaking, the methods, strategies and processes employed by the AMC are compatible with its operational paradigm of market liberalism. The AMC understands the global market as the most effective way to allocate scarce resources such as medicines, vaccines, and research and development investment. The actions of the AMC, therefore, reflect an adherence to market ideology and an attempt to work *with* markets and private enterprise rather than striving to transform the broader social, political and economic determinants of pneumococcal disease.

Organizational change is the central health promotion method employed by the AMC, as it strives to stimulate a reorientation of the pharmaceutical industry, toward a concern for neglected diseases. As an impetus for organizational change, the AMC further employs methods such as advocacy, enabling, visible expectations, intersectoral collaboration, and evaluation. Corresponding with each of these methods are specific strategies, which are in turn bolstered by particular health promotion processes.

#### ***Organizational Change***

While the AMC aims to reorient the research and development activities of the pharmaceutical industry, it does not strive for radical organizational change. Rather, it endeavors to support the industry as it is, while making incremental punctuations in the particular activities of pharmaceutical companies. Weick and Quinn have classified this type of change as “first-order” change.<sup>xlv</sup>

Planned organizational change is typically the result of a failure to create continuously adaptive organizations.<sup>xlvi</sup> This observation is relevant to the case of the pharmaceutical industry, where an inadequate response to global changes around normative issues in health and access to treatment resulted in pressure for organization change.

The normative shift was spurred in 2001, when the Pharmaceuticals Manufacturers Association used trade pressures and litigation to uphold the protection of patents and property as defined under the WTO’s TRIPS, in order to prevent the South African government from gaining access to affordable AIDS



medicines.<sup>xlvii</sup> Working with activists around the world, South Africa's Treatment Action Campaign, WHO and Nelson Mandela, among other individuals and organizations, mounted an international day of action criticizing pharmaceutical companies for charging exorbitant prices for AIDS medicines.<sup>xlviii</sup> This global social movement garnered considerable media attention, calling into question the tendency to protect property and financial gains over health and human life, and compelling shareholders to question the economic implications of this new, unfavorable industry image.

The global reputation and integrity of the pharmaceutical industry was compromised and their perceived failure to respond to moral imperatives of health and human life, were seen to be calamitous. Indeed, these events defined a marked shift in popular global perceptions of the pharmaceutical industry. It could be contended, therefore, that the recent increase in corporate attention being paid to neglected diseases is a corollary of the industry's experience with AIDS medicines. Indeed, the organizational change observed within the pharmaceutical industry over the past decade may be attributed to corporate endeavors to adapt to emerging global normative values around access to medicines, and more specifically, to "minimize reputational damage resulting from the failure to address developing country needs".<sup>xlix</sup> The Theory of Planned Behaviour supports this deduction through its assertion that visible social expectations influence behaviour change.<sup>1</sup>

While the events surrounding AIDS medicines can be understood as having catalyzed organizational change within the pharmaceutical industry, these events were necessary but not sufficient to propel investment in neglected diseases research, since the questions of marketability and returns on investment in developing countries, remain salient. Accordingly, the AMC intervention can be understood as having significant potential to affect organizational change within the pharmaceutical industry, since it attends to these issues by guaranteeing a financial return on vaccine development.

The concept of episodic change is relevant in this instance since it refers to infrequent, strategic and deliberate change defined by inertia, triggers for change, and replacement. Inertia refers to an "inability for organizations to change as rapidly as environments".<sup>ii</sup> As previously elucidated, the pharmaceutical industry was in a period of inertia leading up to events surrounding AIDS medicines in the early 2000's. The events, themselves, can be understood as triggers for change. Additional triggers for change include the strategies of the AMC intervention. Finally, replacement refers to the substitution of one organizational element with another. In this case, the element being replaced is the organizational approach to neglected diseases.

Implicit in the concept of episodic change are Lewin's five assumptions about change, which are: 1) change operates on a linear trajectory through time, 2) movement is progressive from lesser to better, 3) movement is toward a set goal, 4) movement requires disequilibrium, 5) movement is planned and managed by actors who are separate from the system.<sup>iii</sup> Each of these assumptions is accounted for in the method of organizational change that the AMC evoked within the

pharmaceutical industry. Of note, the fifth assumption, that actors outside of the system manage change, is particularly relevant this case, since the AMC has, through strategies and processes, a certain degree of jurisdiction over the organizational change of the pharmaceutical industry.

The AMC is a “pull” mechanism, operating outside of the pharmaceutical industry, to bring about organizational change so as to drive private sector resources into public health.<sup>liii</sup> Accordingly, the strategies utilized by the AMC to induce organizational change in the pharmaceutical industry, are aimed explicitly at shifting the industry’s allocation of research and development resources toward neglected diseases, such as pneumococcal disease. The central strategy of the AMC is to create a market for pneumococcal vaccines that is credible and ample enough to stimulate private investment in research and development. Specifically, the creation of a market for pneumococcal vaccines will involve donors supplementing the purchasing power of developing countries, and thereby incentivizing drug companies to act. The prospect of sustainable markets for vaccines in developing countries is projected to stimulate change in the pharmaceutical industry since it will make certain that companies are able to recover their investment.<sup>liv</sup>

The processes through which organizational change is realized are multi-dimensional and have significant overlap with each of the other methods employed in the intervention. These processes include visioning, resource management, collaboration and cooperation, and evaluation. Each of these processes will be elaborated upon in the following sections. Particular attention, however, must be given at this point, to the process of visioning, in establishing the main method and strategy of the AMC. Indeed, visioning by Michael Kremer, the economist and innovator behind the AMC, was an essential component of the development of the intervention. Coupled with his expertise, creativity, intellectual capacity and confidence, Michael Kremer devoted indefatigable effort to persuade the public of his idea.<sup>lv</sup> It is Kremer’s leadership that defines visioning for organizational change in this instance. Like Kremer, Bill Gates has assumed a leadership role in the formation and execution of the AMC and has, therefore, been a champion for organizational change.<sup>lvi</sup> Indeed, his public persona coupled with his normative and financial commitment to global health has had considerable implications for the social desirability of the intervention. Furthermore, Gates’ contribution of \$1.5 million, to the AMC, likely provided a motivational factor for Canada, Norway, Italy, Russia and the UK, in their decision to donate to the intervention.<sup>lvii</sup>

## **Advocacy**

Organizational advocacy is an important mechanism for facilitating the uptake and institutionalization of a health promotion innovation within organizations. The Diffusions of Innovations Theory asserts that decision makers are often reluctant to take up new innovations when effectiveness has not been demonstrated in their specific context or field of practice.<sup>lviii</sup> Accordingly, a social marketing, or advocacy piece, is often included in the innovation development phase. Outside consultants

are typically responsible for facilitating the adoption of new health promotion innovations, and are therefore tasked with persuading target groups to adopt the innovation within their setting or organization.<sup>lix</sup> Innovations, therefore, must be framed to target groups as relevant to their organizational culture and mandate. Innovations must also be seen to offer relative advantage over what was previously in place, be easy to use and offer improved, measurable results.<sup>lx</sup> An important practical implication, is the fact that innovations must fit well with organizations. Rogers contends that this fit is largely dependent on how the innovation is framed during communication through mass media and personal interactions. He further emphasizes the value of social networks and interpersonal channels in influencing innovation adoption.<sup>lxi</sup>

The AMC was developed with both the concerns of developing countries and the interests of the pharmaceutical industry in mind. Gaining trust, support and eventually commitment from both developing countries and the pharmaceutical industry was essential to the adoption of the AMC innovation and accordingly its design fits with both the corporate culture of the industry and the health concerns of developing countries.

Proponents of the AMC have used organizational advocacy extensively as a method by which to garner trust from the pharmaceutical industry and to promote the initiative to the governments of developing countries. Here, advocacy refers directly to methods such as the provision of information, persuasion, negotiation and technical assistance.

Specifically, AMC stakeholders employed a number of advocacy strategies in order to spread knowledge of the AMC and promote uptake by to the pharmaceutical industry and developing countries. From 2005 until 2008, the World Bank, the GAVI Alliance and the AMC Donor Advisory Committee sought stakeholder input for the planning and execution of the AMC pilot project.<sup>lxii</sup> The goal was to incorporate opinions and recommendations from various economists, global health experts, medical practitioners, scientists, manufacturers and civil society organizations, into the design of the AMC. Input was sought through expert groups, consultations, meeting and roundtables.<sup>lxiii</sup> These strategies were collaborative in nature, and the results were incorporated into the strategic objectives of the AMC.

Once the AMC design was established in April 2008, the Implementation Working Group provided briefings on the program to both civil society organizations and the pharmaceutical industry. Subsequently, they extended the offer of further consultation to pharmaceutical manufactures, and eventually participated in one-on-one discussions with representatives from a number of pharmaceutical companies including Wyeth, GlaxoSmithKline, Merck and Serum Institute of India.<sup>lxiv</sup> Once again input and recommendations were incorporated into the modifications made to the AMC.

Diffusion of Innovations Theory suggests that innovation uptake is more likely when advocacy and communication occur as a mutual exchange process rather than “merely persuading an audience to take action”. It is notable, therefore, that collaborative communication was an important health promotion process employed

throughout the development, design, and revision of the AMC. Indeed, effective communication processes were employed widely by proponents of the AMC and were seen to be successful in promoting the adoption of the AMC innovation by both pharmaceutical manufactures and developing countries.<sup>lxv</sup>

### **Enabling**

Enabling is a key method of health promotion, and has been a fundamental factor in catalyzing organizational change within the pharmaceutical industry, as well as in building capacity in developing countries. For health promotion, enabling means taking action to empower groups or individuals to mobilize human and/or material resources, to promote and protect health.<sup>lxvi</sup> By mobilizing resources to create a market for pneumococcal vaccines, the AMC has enabled pharmaceutical manufactures to invest research and development into pneumococcal disease. The upshot of this mobilization of resources has been a strengthening of the future capacity of developing countries to access much needed vaccines.

The particular enabling strategy employed by the AMC include setting the AMC price per vaccine dose at \$7, meaning that manufactures have potential to receive a reasonable return for their product and therefore have incentive to invest. This strategy includes the caveat of the AMC cost-sharing commitment to fund \$3.50 of this price in the form of a subsidy, so as to enable governments of developing countries to access vaccines at a substantially reduced price.<sup>lxvii</sup>

Enabling, in this instance, is realized through the process of capacity building. Capacity building is the development of sustainable organizational structures and material resources so as to ensure prolonged health gains over time.<sup>lxviii</sup> The AMC ensures sustainability through the *Minimum Supply Agreement*, which states that “firms should be required to make a commitment of a minimum of 10 million doses annually, over 10 years”.<sup>lxix</sup> This commitment ensures that countries have sustained and adequate access to vaccines, and thus have the potential to witness real reductions in pneumococcal incidence over this time frame.

### **Visible Expectations**

Though most often applied at the individual level, the Theory of Planned Behaviour can also be effectively applied at the organizational level. Of particular interest for this paper, is the assertion in the Theory of Planned Behaviour that the presence of visible social expectations influences behaviour change.<sup>lxx</sup> The provision of visible social expectation has been instrumental for the effectiveness of the AMC in two ways.

First, as previously mentioned, the global shift in normative perceptions of health and access to medicines, had a profound effect on the corporate behaviour of pharmaceutical companies who saw the potential economic losses associated with continued disregard for neglected diseases. Secondly, a number of the strategies employed by the AMC serve the purpose of establishing a set of visible expectations

for all AMC stakeholders (including donors, recipient countries and pharmaceutical manufactures). These expectations ensure that all stakeholders are compelled by certain behavioral norms.

The primary strategies utilized for promoting visible expectations include clearly defining roles and responsibilities for each stakeholder body (See Table 1), and establishing a robust legal framework for the AMC, built on a series of legal agreements. (See Table 2).

**Table 1 : Roles and Responsibilities of Stakeholders**

<b>Stakeholder</b>	<b>Role and Responsibility</b>
Donors	Donate. Provide input into technical design and processes for the AMC during the establishment phase.
World Bank	Monitor the implementation and progress toward AMC's objectives Support programmatic and financial functions of the AMC. Manage donor commitments and AMC disbursements. Provide financial and fiduciary administration.
Developing Countries	Cover an increasing proportion of the cost of vaccines during the AMC period and beyond
GAVI Alliance	Co-financing during the AMC period
Pharmaceutical Manufactures	Research and Development in Neglected Diseases.

**Table 2: Legal Agreements of the AMC**

<b>Legal Agreements</b>	<b>Description</b>
AMC Terms and Conditions	Describes AMC mechanism
Offer Agreement	Commitment between World Bank and GAVI to subsidize future purchase of vaccines
Stakeholders Agreement	Between GAVI, World Bank and grantors: sets out AMC mechanisms for pharma manufacturers
Donor Grant Agreements	Between AMC donor and World Bank: sets out grantor obligation, payment schedule and details.
GAVI-WHO Memorandum of Understanding	Anticipated to be signed by WHO and GAVI for review of the AMC vaccines

	through the WHO pre-qualification process
IAC Charter	Defines the functions of the Independent Assessment Committee
IAC Bylaws	Defines the operational procedures of the Independent Assessment Committee

The processes employed in order to realize these strategies include effective communication between stakeholders, which has occurred through the establishment of advisory committees, work groups and a series of external consultations.<sup>lxxi</sup> Cooperation and planning have also been important processes for establishing visible expectations. Indeed, decision-making that takes the recommendations of all key actors into consideration has been a feature of the development of the AMC. This has resulted in a great deal of “buy-in” amongst stakeholders and hence a strong commitment to the expectations delineated by the AMC.

### ***Intersectoral Collaboration***

Intersectoral collaboration is the coming together of various participants to work toward a common purpose and to share risk, responsibility, resources, competencies, power, and benefits.<sup>lxxii</sup> Partnerships of this kind are important for health promotion because they facilitate upstream change. The benefits of intersectoral collaboration include increased availability and access to resources, a building of capacity, a strengthening of political clout, and a widening of perspectives that enables a more creative practice.

The specific collaboration strategy employed by stakeholders of the AMC, is a public-private partnership (PPP). PPPs are cooperative ventures between the public sector and one or more private actors, which build on the expertise of each partner and strive to meet public needs through the sharing of resources, risk and rewards.<sup>lxxiii</sup> There are a number of public and private sector benefits associated with PPPs. Public sector benefits include the capacity to utilize private sector innovation for public objectives and the ability to leverage diverse ideas, resources and expertise to create powerful mechanisms for change. Benefits to the private sector include an increase in policy-making influence, direct financial returns in the form of tax breaks and market penetration, and enhanced corporate authority, visibility and social legitimacy.<sup>lxxiv</sup>

In the case of the AMC, a PPP has been built between the GAVI alliance, donor countries, the Bill and Melinda Gates Foundation, WHO, the World Bank, UNICEF and the pharmaceutical industry. The processes that render this partnership effective involve inclusive communication, effective coordination and cooperation, and relationship building across sectors.

## Evaluation

Robust health promotion programs should include an evaluation component so as to measure the efficiency and effectiveness of the intervention. Evaluation is also a crucial means by which to introduce feedback into programming and to ensure that the greatest return for program resources is being achieved.<sup>lxxv</sup> Particularly for large-scale interventions, evaluation is an important tool for ensuring transparency and accountability. Finally, evaluation is important for generating knowledge, propagating successful programming and spurring future innovation.

Evaluation is a crucial method being employed as a part of the AMC pilot since stakeholders are interested in evaluating the design and implementation of this new innovation. Evaluation for the AMC falls under the jurisdiction of the Monitoring and Evaluation Subgroup of the AMC Donor Committee.<sup>lxxvi</sup> The Subgroup is concerned with both process and outcome evaluation, and has established *The Monitoring and Evaluation Framework*. The framework will help to assess four categories. The first category is concerns rationale issues, including the need for the intervention, the availability of alternatives and the potential for more cost-effective interventions. The second category concerns design issues, including the fundamental concept of the AMC and the terms, conditions and mechanisms of the intervention. The third category concerns process issues, including the overall efficiency of the program, the effectiveness of roles and responsibilities and the adherence to budgets and timelines. Finally, the fourth category concerns outcomes, including whether the targeted results were achieved. Specifically, whether a pneumococcal vaccine was developed and whether it met the needs and capacities of GAVI-eligible developing countries.<sup>lxxvii</sup>

The Monitoring and Evaluation Strategy proposed by the Monitoring and Evaluation Subgroup includes 3 specific strategies. The first strategy is a baseline study that is to be conducted in order to garner measurements for comparison for future evaluations. This baseline assessment will measure baseline investment in research and development, and production capacity with respect to pneumococcal vaccines. It will also measure the status of immunization and health in GAVI-eligible developing countries.<sup>lxxviii</sup>

The second strategy is to annually monitor the progress of the AMC and its program accomplishments with respect to its public health goal. Monitoring will be conducted by individual stakeholders and compiled into periodic reports.

The third strategy is to conduct process and outcome evaluations to detect how well the AMC is working. Biannual process evaluations will be conducted to ensure that the AMC mechanism is functioning effectively and as predicted. Additionally, outcome evaluations will be conducted every four years to assess the extent to which the AMC is achieving its objectives.<sup>lxxix</sup>

The Monitoring and Evaluation Subgroup has proposed a number of processes to be used for evaluative purposes. These include conducting a literature and document review examining the context for the AMC, as well as any

documentation of the conception and implementation of the intervention. Secondly, the Subgroup has proposed that surveys and interviews of key stakeholders be used to measure attitudes regarding the AMC processes and outcomes. Thirdly, the Subgroup has suggested pulling industry data to assess the impact of the AMC on the behaviour of pharmaceutical manufacturers. Finally, the Subgroup contends that immunization and health data should be measured through UNICEF and WHO, for the purposes of evaluating the effectiveness of the intervention in changing health outcomes.<sup>lxxx</sup>

## **B. Socio-ecological Analysis of the Variety of Methods, Strategies and Processes**

Health promotion planners should, where relevant, employ interventions that have direct or mediating implications at all levels of the socio-ecological system. This is most likely with higher-order interventions since change at these levels is apt to trickle down through the system. Problematically, higher-order interventions have the potential to lose sight of the individual and therefore fail to appropriately address individual health issues.

The methods, strategies and processes of the AMC strive to address the social determinants of health that inform accessibility to pneumococcal vaccines in developing countries. While seemingly an effective strategy for incentivizing pharmaceutical companies to produce vaccines, the AMC largely fails to look upstream at broader determinants of health such as poverty and power. Simultaneously, the AMC loses sight of the individual in its programming, and thus may have difficulty realizing its objectives of reducing rates of pneumococcal disease. The following section will apply a socio-ecological lens both to the health issue of pneumococcal disease, and to the AMC intervention for the purposes of identifying relationships and synergies among methods, strategies and processes.

### ***Socio-ecological Understanding of the Issue***

The socio-ecological model acknowledges that health is mediated by individual, interpersonal, community, organizational, social and supranational forces. Attending to each of these loci is essential for understanding the multilayered dimensions of health and health issues. The nature and origins of disease due to infection with *streptococcus pneumoniae* can best be explained using a socio-ecological model (See Figure 5).

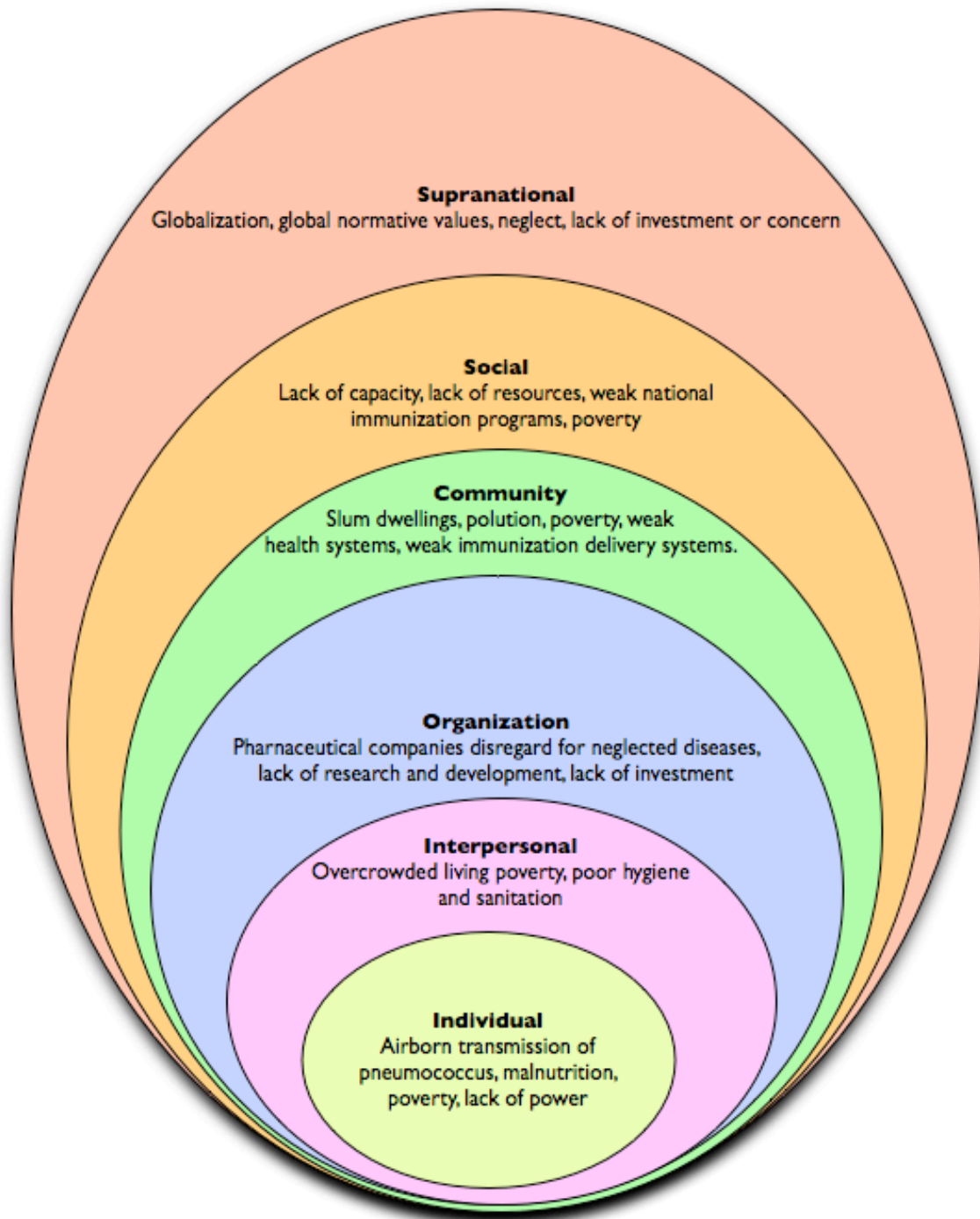
In developing countries, Pneumococcal disease predominantly affects children under the age of 5. Transmitted through air droplets, *Streptococcus pneumoniae* is highly contagious and extremely virulent, leading to rapidly progressive illness with high morbidity and mortality. Factors such as overcrowded living conditions and poor hygiene and sanitation contribute to contagion. Accordingly, individuals who live in conditions of poverty, lack food security and are systemically disempowered, are at an increased risk of pneumococcal disease.



Compounding the interpersonal nature of disease determinants, are the organizational forces at play. Poorly organized and under-resourced health care systems often fail to deliver timely and effective treatment. Problematically, the emergence of penicillin resistant strains poses an added challenge for already over-stretched health systems.

Inadequate community resources, slum settlements, and pollution often characterize urban community environments in the developing world, and affect individual, interpersonal and organizational determinants of disease. A lack of capacity coupled with scarce resources has implications for society's ability to improve health at other socio-ecological levels in a context of infectious disease. Finally, at the supranational level, a number of factors inadvertently propagate the spread of pneumococcal disease. These include the global markets, which reinforce conditions of poverty and disempowerment at the local level. These also include neglect on the part of the international community, for diseases that primarily affect those residing in developing countries. The consequence of this neglect is a lack of effective prevention, treatment or health promotion activities targeting pneumococcal disease and its determinants.

Figure 5: A socio-ecological understanding of the origins of pneumococcal disease (adapted from Bartholomew et al)



### ***Socio-ecological Analysis of the Current AMC Intervention***

Although pneumococcal disease is determined by a number of socio-ecological factors, the methods, strategies and processes of the AMC, target, for the most part, the organizational level. Indeed, pharmaceutical companies are explicitly targeted in the AMC strategy, and encouraged to produce appropriate vaccines. While the activities of the AMC are largely confined to the organizational level, the synergies of these activities have implications at other loci in the socio-ecologic system.

All of the methods, strategies and processes employed by the AMC operate as “pull” factors to haul private sector resources into public health.<sup>lxxxi</sup> This “pull” will be characterized by first-order organizational change, which will explicitly shift pharmaceutical industry resources toward research and development in pneumococcal disease. This organizational change will come to bear as a result of the synergistic relationship between the methods that underpin each of the AMC’s strategies and processes. Specifically, organizational change, in this instance, is most likely to unfold if the other methods of advocacy, visible expectations, intersectoral collaboration, and evaluation are each realized. The successful implementation of each of these methods may seem like an overwhelming undertaking, however, the fact that most of these methods are simultaneously buttressed by the same, or similar, health promotion processes will facilitate their concurrent implementation. For example, the processes of communication, coordination and cooperation operate synergistically to facilitate the methods of advocacy, enabling, and intersectoral collaboration. These collaborative exchange processes, then, intersect synergistically with processes such as visioning, planning and leadership, thereby resulting in a health promotion innovation that is both thorough and forward thinking.

The AMC functions creatively and effectively at the organizational loci of the socio-ecologic system. It does not, however, devote explicit attention to other levels in this system. This shortcoming is arguably problematic, and these limitations will be elaborated upon in the following section. Notably, however, the interventions executed by the AMC at the organizational level have significant, albeit inadvertent, implications at other levels.

First, the AMC does not expressly target the societal level of the system. However, the influx of vaccines available in developing countries, that will ensue if the AMC is successful, will have a dramatic effect on these societies. Indeed, governments will have to devote capacity to incorporating a pneumococcal vaccination scheme into their existing health systems. It is for this reason that the AMC delegates to governments the decision-making regarding participation in the intervention. By allocating decision making to governments, the AMC divorces itself from the responsibility for ensuring sustainable national immunization. Although this may be seen as problematic, there are benefits associated with allowing developing countries to make autonomous decisions in regard to their health. These benefits

include normative factors such as democracy and autonomy, as well as the health promotion benefits of self-efficacy and, in cases where it is deemed favorable, increased buy-in to the intervention.

Finally, although the AMC intervention does not expressly target the supranational loci, its actor, policies, and activities transpire at this level of the system. Indeed, the assessment of need was global, the PPP that shapes the intervention is comprised of global bodies, and the moral norms that have compelled the pharmaceutical industry to act, are held around the globe. Thus the implications of the AMC are global in nature. Moreover, as the first of its kind, the AMC intervention may have broad, global, repercussions for health, if it is seen to be successful. Indeed, given the far-reaching support that it has received from public and private actors in the international community, the AMC, and its PPP premise, may act as model for future global health campaigns and programming.

## **PART 3: GAPS**

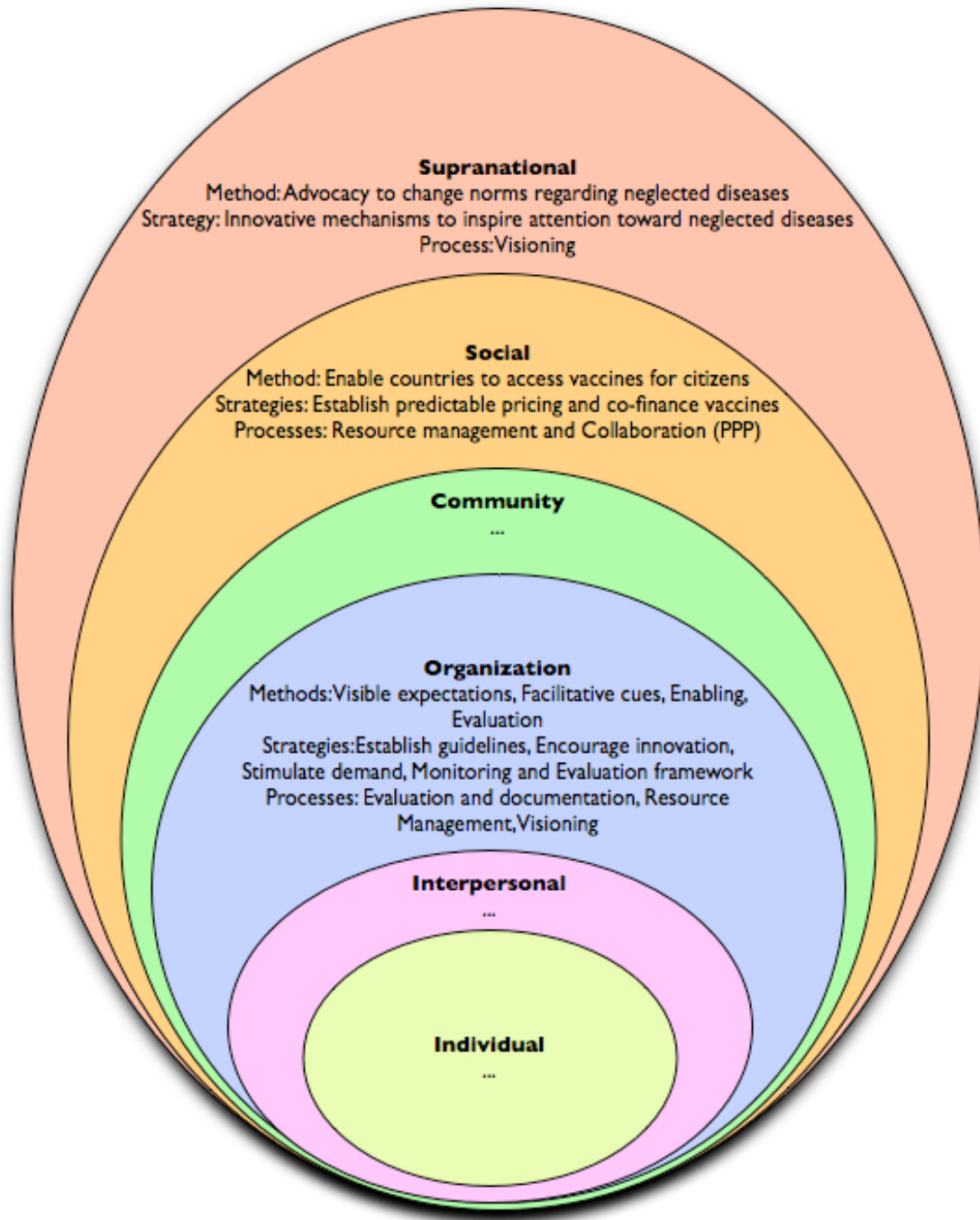
### **A. Socio-ecological Gaps**

Problematically, the efforts of the AMC are concentrated predominantly at the organizational level, with cursory attention being paid to the social and supranational levels. Though the higher-order interventions of the AMC certainly have an influence on the individual, interpersonal and community loci, these levels are not attended to explicitly in the AMC intervention. Accordingly there are systemic socio-ecological gaps in the AMC (See Figure 6).

The first of these gaps is the lack of attention devoted to the individual within the system. Even though uptake of the vaccine is of undeniable importance for the success of the intervention, the AMC does not explicitly consider determinants at the individual level. Importantly, elements such as culture, perceived social norms, self-efficacy, access to resources, knowledge and perceived benefit will have tremendous impact on an individual's decision to get themselves or their children vaccinated. Yet, none of the methods, strategies or processes employed by the AMC, are targeted at these elements operating at the level of the individual.

Similarly, the actions of the AMC overlook factors at the interpersonal and community loci. This oversight occurs despite the fact that supportive interpersonal norms and community resources will be necessary to ensure the uptake and dissemination of vaccines in developing countries.

Figure 5: Socio-ecological model of the AMC intervention (adapted from Bartholomew et al.)



## **B. Consonances and Dissonances between Actions and Underlying Foundations**

### ***Goals and Objectives***

The methods, strategies and processes applied by the AMC intervention are largely congruent with their stated goal of increasing the availability of effective pneumococcal vaccines. Indeed, the actions of the intervention focus on stimulating organizational change by incentivizing pharmaceutical companies to invest in pneumococcal vaccine development, which will ideally result in an increased availability of vaccines. Problematically, however, by focusing exclusively on their primary goal of production, the AMC does not employ methods, strategies or process to adequately meet their specific, long term objectives, related to dissemination or uptake.

As previously elucidated, vaccine dissemination is contingent on local knowledge about the efficacy of vaccines, the belief that vaccines are effective and desirable public health measures, and the national values of public health and disease prevention. It is also dependent on a robust health system, an vaccine procurement strategy, human resources and training, national financial capacity and stability and physical resources to support the cold-chain storage and safe administration of the vaccine.

The AMC has accounted for some of these variables. Indeed, it will partner with UNICEF to carry out the procurement of the vaccines. It will also fund the cost of the vaccine, the syringe and the shipping charges. Although UNICEF is responsible for delivering the vaccine to the country's port of entry, from there it defers responsibility to the country and its NGO partners. The country is then responsible for delivering the vaccine to health clinics. This may be problematic in instances where health services are under-staffed, under-resourced or under-qualified to manage the dissemination of the vaccine. Accordingly, although the AMC tacitly strives for a number of dissemination objectives, the methods, strategies and processes of the intervention itself does not fully account for the nuanced determinants mediating these objectives. This oversight may generate an unintended burden of consequences for countries and their health systems.

Although the efforts of the AMC to produce pneumococcal vaccines, are ultimately intended to have an impact on individual lives, the intervention does not explicitly address determinants of uptake by individual recipients. Determinants of uptake include holding the personal and cultural belief that immunization will have favourable health consequences, holding value in western medicine and having knowledge about the efficacy of vaccines. None of these factors are attended to through the methods, strategies or processes of the AMC.

### ***Values***

Health equity and social justice are the core values informing the AMC. The actions of the AMC represent an endeavor to promote health equity within, and

between countries through immunization services. In so doing, however, the AMC fails to attend to broader social determinants of global health inequity. Indeed, poor housing, pollution, poverty, disempowerment, overcrowding, and a lack of hygiene and sanitation infrastructure are all determinants of ill health and health inequity. While widespread pneumococcal vaccination will undoubtedly reduce rates of disease, it will have little effect on promoting health equity, if we understand health, as we do in health promotion, in its broadest sense.

In addition to equity, the AMC also values transparency, accountability and sustainable development. Accordingly, the intervention's use of visible expectations and evaluative methods is harmonious with its stated operational values.

### ***Theories and Ideologies***

Liberalism is the central ideology that informs the AMC. Liberalism, and its modern manifestation, neoliberalism, believe in the power of the market to efficiently and effectively allocate scarce resources. The methods, strategies and process of the AMC appear largely harmonious with this ideology, as they work with the market and create market-based incentives to motivate the pharmaceutical industry to allocate its research and development resources toward pneumococcal disease. Notably, however, liberalism argues against government intervention and suggests that markets should be left to their own devices. The AMC is, in part, a government supported entity, and its actions require substantial interference with markets. Accordingly, the actions of the AMC largely contradict the fundamental tenets of the theory that forms its foundation, but likely reflect the complexity of the real world.

The AMC adheres to the coalition theory, which suggests that individuals and groups form partnerships to manage and influence their environments.<sup>lxxxii</sup> Therefore, it employs the public-private effect by forming multi-sectoral partnerships that include both public governments and organizations, and private corporations. The methods, strategies and processes employed by the AMC are, to a large extent, in use for the purposes of upholding and strengthening this partnership. Indeed, collaboration and communication, as well as visioning and leadership, are important activities for insuring a continuously effective partnership. The public-private effect is well exercised through the methods, strategies and processes of the AMC and thus the public-private partnership appears to be highly effective.

### ***Evidence***

Evidence shows that vaccination is the most effective way by which to manage pneumococcal disease around the world.<sup>lxxxiii</sup> The methods, strategies and processes of the AMC are targeted at vaccine production. The intention behind the methods, strategies and processes, therefore, can be understood as highly congruent with evidence.



Notably, however the AMC is currently in its pilot phase. As such it is relatively ground breaking and cannot be easily compared to other broad-based public health initiatives. Accordingly, there is no evidence to demonstrate the effectiveness of an intervention like the AMC. It is for this reason that the AMC is highly intent on conducting multiple process and outcome evaluations. The methods, strategies and processes of evaluation employed by the AMC, are therefore harmonious with its intention to build knowledge and evidence to support the AMC model.

#### **PART 4: IDEAL INTERVENTION**

The Ottawa Charter for health promotion defines health and health promotion in the following way:

“Health promotion is the process of enabling people to increase control over, and to improve, their health. To reach a state of complete physical, mental and social well-being, an individual or group must be able to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment. Health is, therefore, seen as a resource for everyday life, not the objective of living. Health is a positive concept emphasizing social and personal resources, as well as physical capacities. Therefore, health promotion is not just the responsibility of the health sector, but goes beyond healthy life-styles to well-being”<sup>lxxxiv</sup>

Based on these definitions, the Dalla Lana School of Public Health has delineated eight core principles of health promotion.<sup>lxxxv</sup> Ideal health promotion programs or interventions are those that account for each of these principles. These principles are:

1. Empowering: enabling individuals and communities to increase control over the factors that affect their health.
2. Equitable: guided by a concern for equality and social justice
3. Participatory: involving those concerned at all stages of the processes
4. Holistic: fostering physical, mental, social and spiritual health
5. Intersectoral: cross-sector collaboration
6. Sustainable: bringing about changes that individuals and communities have the desire and the capacity to maintain once funding has ended
7. Multi-strategy: using a variety of strategies that address different levels of the socio-ecological system
8. Reflexive: acknowledging ones own social location, assumptions and biases in practice.

An ideal health promotion intervention should encompass each of these principles. Problematically, as elucidated throughout the body of this paper the AMC fails to encompass a number of these elements, and accordingly, will likely be

unsuccessful at promoting a holistic, positive conception of health. This is not to say that it will not be effective in improving access to pneumococcal vaccines or in reducing mortality, but rather is to suggest that it could improve its reach, its effectiveness and its sustainability if it were to be more in line with the principles of health promotion.

If the AMC intervention were to be better aligned with the principles of health promotion, it would need to address the following issues:

#### **A. Empowerment**

The AMC does little to empower the individuals or communities whom it aims to target with pneumococcal vaccines. Community development, coupled with health communication and health education would be extremely valuable health promotion processes to ensure both the social acceptability of the vaccines, and the community capacity to assist with the delivery of these products.

#### **B. Participatory**

Much like the principle of empowerment, engaging communities in meaningful participation can have significant implications for the social acceptability of a health promotion intervention. Problematically, by failing to effectively involve communities in each stage of the AMC, the intervention may be eroding local community support, or ‘buy-in’ to the program. This lack of community acceptance may prove to be a hindrance when it comes time to disseminate vaccines and promote community uptake.

#### **C. Holistic**

The AMC draws its evidence heavily from a biomedical model of health. Consequently, its goals and objectives attend exclusively to the physical aspects of health. It ignores the mental and spiritual aspects, and thus lacks the holistic approach favored in health promotion. While the lack of a holistic approach will likely not affect the production, dissemination or uptake of pneumococcal vaccines, it will have implications for global health, conceptualized more broadly. Furthermore, by attending exclusively to one aspect of physical health, the AMC ignores the broader social determinants that underpin ill health in developing countries. This oversight will undoubtedly affect the intervention’s success over time. Moreover, it highlights the fact that the AMC intervention is more or less a “band aid” solution to a problem rooted in larger, structural causes.

#### **D. Multi-strategy**

Health promotion encourages the utilization of a variety of comprehensive, multi-level strategies, which can operate synergistically at various levels in the socio-ecologic system. The strategies of the AMC target the organizational level directly and the supranational and social levels, indirectly. The AMC does not direct strategies at the individual, interpersonal or community levels. As previously elucidated the lack of attention paid to these levels of the socio-ecologic system may

create barriers to dissemination and uptake of vaccines, thereby impeding the effectiveness of the AMC intervention.

### **E. Reflexive**

Reflexivity is a nuanced process, but an important one. For reflexivity to be engendered in health promotion it needs to be given organizational time and attention and it needs to be an embedded part of the institutional culture. Reflexivity is essential to health promotion since it challenges practitioners to question their own privilege and social position, in relation to that of their clients. Accordingly, it may be an important step in rectifying power imbalances and accounting for the biases and assumptions brought forth by the practitioner.

The AMC does not practice reflexivity. Yet it should, since the socioeconomic and political power imbalances between it, and the developing countries that targets are vast. The lack of reflexivity, in this instance, may have implications for social justice since it may result in the reinforcement of inequities within and between nations.

## **PART 5: ACTION PLAN - TOWARD A HEALTH PROMOTING AMC**

While the current AMC approach to pneumococcal disease does not encompass all of the health promotion principles, it is a creative, innovative strategy that may have broad-based implications for global health. Accordingly, in proposing an ideal response, one ought to uphold the integrity of the program, while enriching its actions and endeavors by aligning them more closely to the central tenets of health promotion. This paper has suggested that a more ideal AMC intervention would be characterized by a small number of new objectives and actions to accompany those currently in place, and by an increased investment in the strategic areas of dissemination and uptake. By implementing an added focus in the areas of dissemination and uptake, the AMC will attend more effectively to each of the levels in the socio-ecological system, and will operate more coherently with the values, theories and evidence of health promotion.

### **A. Ideal Objectives**

The current AMC has a number of dissemination objectives, which serve the purpose of identifying target age groups and selecting viable countries that will have the capacity to distribute the pneumococcal vaccine. While these objectives are important for defining the parameters of the AMC, they are inadequate for ensuring effective, equitable and sustainable dissemination of vaccines in developing countries.

The central dissemination objective for an ideal AMC would be to reorient and strengthen health services. Recognizing the financial constraints that characterize service delivery in resource-poor settings, such as developing countries, a particular focus should be made on strengthening primary health care. As defined by the WHO, “primary health care is essential health care made universally accessible to individuals

and families in the community by means acceptable to them, through their full participation and at a cost that the community and country can afford”<sup>lxxxvi</sup>

As outlined in the 2008 WHO Primary Health Care Report, primary health care refocuses the delivery of health services to the locus of the community. Indeed, with an emphasis on promoting and protecting the health of individuals and communities, primary health care systems attend to the unique interests of the people they serve. Moreover, with a focus on health equity, community development and empowerment, primary health care systems embody many of the principles of health promotion. As such, these systems understand health more holistically, and treat it as a resource for everyday life.

This being said, strengthening primary health care systems would be a sustainable way by which to create the infrastructure and support the community and human resource requirements necessary to effectively disseminate pneumococcal vaccines. As such the development and strengthening of primary health care systems in developing countries approved for the AMC, should be an objective of the intervention

A second, equally important objective in a more ideal AMC, should be to improve health communication and community outreach. Vaccines are a futile strategy of disease prevention if only a small proportion of the population get vaccinated. It is important therefore, to engage with individuals and communities in order to communicate the benefits of vaccine uptake. Although health education and health communication are often criticized for being overly paternalistic, for blaming the victim and for failing to recognize the social determinants of health, these methods serve a purpose in instances where individual agency is a significant determinant of outcomes. Here, in the case of the AMC, individual agency is a considerable predictor of vaccine uptake. Accordingly, individuals need to be provided with information so that they might make an informed decision with regard to vaccination.

## **B. Ideal Actions (Methods, Strategies, Processes)**

Notably, the implementation of the proposed objectives for the ideal AMC, would be a resource-intensive undertaking. Herein lies an opportunity to build upon the PPPs that have made the AMC such a success. Indeed, the *Bangkok Charter for Health Promotion* encourages partnerships and coherence across sectors, including the private sector.<sup>lxxxvii</sup> Because PPPs have largely proven to be successful mechanisms for leveraging funds, they serve as an interesting and viable approach to securing resources for health. In the case of the AMC, the PPP structure is already in motion and securing additional funds would simply require an increased commitment from existing partners or the extension of the partnership opportunity to new players. Here, other players may include other OECD countries, NGOs, or the private sector.

### **Strengthening Primary Health Care**

If the ideal AMC is to achieve its objective of strengthening primary health care systems, it will need to employ a number of methods. These include methods to

build human capacity within primary health care systems, such as skills training, team building, professional organizing, and human relations training. Furthermore, methods will be needed in order to develop effective, health promoting organizations and systems. Such methods include procedural factors such as technical assistance. They also include methods such as conscientisation and reflexivity, both seen to be necessary to build a health promoting institutional culture.

Here, specific strategies would include actions such as enabling communities to access training and build skills, modeling technical procedures, engaging in outreach with the community to ensure community interest, commitment, and involvement in the project, and leveraging resources to ensure appropriate infrastructure and equipment is available.

The processes associated with these methods and strategies include visioning and planning, communication, coordination and capacity building. In addition, reflexivity and evaluation are important processes for maintaining the effectiveness, sustainability, and vitality of the project.

### ***Health Communication and Outreach***

The methods required to achieve effective health communication and outreach include those to increase knowledge and those to change attitudes. First, increasing knowledge is essential to promoting buy-in to pneumococcal vaccines, by community members. It is only in knowing the benefits, potential side effects, and consequences of not getting vaccinated, that people will be able to make informed decisions in regard to vaccine uptake. Methods to increase knowledge include active learning, discussion, visual presentations, persuasive communication, facilitation, and fear arousal<sup>2</sup>. Secondly, methods to change attitudes include shifting perspectives, persuasive arguments, modeling and anticipated regret.

Potential strategies that may facilitate these methods include didactic tactics such as information sessions, social forums, and lectures, as well as more participatory educational strategies such as body mapping, or participatory discussions. Strategies further include information campaigns such as billboards, advertisements, flyers and advertisements in television, radio, and newspaper. Finally, the establishment of effective primary health care services can be understood as a strategy for health communication and outreach. Indeed, primary health care is inherently participatory and can therefore, serve as a lubricant for outreach, community engagement and effective health communication.

The relevant health promotion processes, to facilitate the execution of these methods and strategies, include community development and capacity building through skill development, resource sharing and information sharing. Even more

---

<sup>2</sup> Although “fear arousal” may seem slightly off-putting, it is not intended as a tactic of manipulation or coercion. Rather, it is meant to alert individuals and communities to potentially adverse outcomes and to offer strategies for averting such outcomes.

importantly, the processes of effective communication and skilled leadership are necessary, here, to sustain health communication and community outreach.

### **C. Adoption, Implementation and Sustainability**

Bartholomew asserts that health promotion practitioners should establish a linkage system at the beginning of their program planning. The linkage system is comprised of the resource system, comprised of those who support and develop the intervention. It further includes the user system, which are those people or groups who implement the program. Finally, the third component is the linkage system, which includes all those people or groups that mediate change or facilitate collaboration throughout the process of the intervention.<sup>lxxxviii</sup>

Understanding the AMC partners as the resource system, and developing countries as the user system, the obvious point of involvement for a health promoter seeking to endorse the adoption and implementation of an ideal, health promoting AMC, is in the linkage system. Indeed, health promoters can play a role in facilitating intersectoral collaboration in order to leverage resources, and can mediate change on the ground through community development and individual behaviour change. Moreover, given the principles of health promotion and the focus of health promotion on the determinants of health, health promoters can operate within the linkage system to persuade interventions, such as the AMC, to adopt a positive, more holistic conception of health. It is this capacity to mediate and facilitate, that would fill an important niche within the AMC, for health promoters to fill.

Rendering the AMC sustainable will require an ongoing reciprocal exchange between the user system and the linkage system. Indeed, the linkage systems will need to build on the existing capacities and expertise within the user system. Simultaneously, the user system will need to draw on the resources and technical skills of the linkage system. This exchange will build capacity and skills that are locally relevant, salient to the community and effective for strengthening the dissemination and uptake objectives of the AMC.

### **FINAL REMARKS**

Pneumococcal disease is a problem of global proportions. As a global health issue, pneumococcal disease necessitates an inherently global intervention, which is capable of targeting factors and determinants at the supranational scale of the ecologic system. Importantly, therefore, the AMC is serving an important function. An intervention of global magnitude, extensive resources, and world-class expertise and innovation, the AMC is working to address pneumococcal disease on a broad basis. In so doing, it has massive potential to reduce the spread of the disease in many developing countries. Problematically, in operating on such a broad, global basis, the AMC appears to lose sight of the very individuals and communities whom it strives to protect. Indeed, the lack of attention devoted to the strategic areas of

dissemination and uptake, reflects the lack of concern for factors operating at the individual, interpersonal and communities levels of the socio-ecologic system.

Arguably, there is a niche for health promotion in the AMC. Recognizing that health is contingent on a range of social, political and economic determinants, health promoters may have a role to play in strengthening systems of dissemination and improving health communication and community outreach with target groups, to promote vaccine uptake. In sum, the AMC illustrates the importance for global health promotion, of having global ambitions that are in touch with local and community realities.

## ENDNOTES

---

<sup>i</sup> WHO (1986) *Ottawa Charter for Health Promotion*

<sup>ii</sup> Labonte, Ron (2007) Promoting Health in a Globalizing World. *Health Promotion in Canada, Critical Perspectives 2<sup>nd</sup> edition*. Eds Michel O'Neill et al. Canadian Scholars Press Inc, Toronto: p 213

<sup>iii</sup> Smith, Ben, Kwok Cho Tang, Don Nutbeam. (2006) WHO Health Promotion Glossary: new terms. *Health Promotion International*. 21(4):342

<sup>v</sup> Richard, Lucie and Lise Gauvin (2007) Building and implementing ecological health promotion interventions. *Health Promotion in Canada, Critical Perspectives 2<sup>nd</sup> edition*. Eds Michel O'Neill et al. Canadian Scholars Press Inc, Toronto: p 317.

<sup>vi</sup> Bartholomew, L, Guy Parcel, Gerjo Kok, Nell Gottlieb (2006) *Planning Health Promotion Programs An Intervention Mapping Approach*. Jossey-Bass: San Francisco:

12

<sup>vii</sup> WHO (2003) *Weekly epidemiological record*. 78(14): 110

<sup>viii</sup> Levine, Orin et al. (2006) Pneumococcal vaccination in developing countries. *Lancet*. 367(9526): 1897

<sup>ix</sup> Gadot, Laurent (2008) Advance Market Commitments: are they worth the hype? *Putting Patients' Needs First, New Directions in Medical Innovation*. Medics Sans Frontiers.p 28.

<sup>x</sup> WHO (2003) *Weekly epidemiological record*. 78(14): 110

<sup>xi</sup> Levine, Orin et al. (2006) Pneumococcal vaccination in developing countries. *Lancet*. 367(9526): 1897

<sup>xii</sup> Warlaw, Tessa, Emily Johansson, Matthew Hodge et al. (2006) Pneumonia: the silent killer of children. *UNICEF Publications*. P 7

<sup>xiii</sup> pneumoAPID (2008) *Pneumococcal Disease*. Retrieved 11 February:  
[http://www.preventpneumo.org/diseases/pneumococcal\\_diseases/index.cfm](http://www.preventpneumo.org/diseases/pneumococcal_diseases/index.cfm)

<sup>xiv</sup> Cripps, Allan W, Amanda Leach, Deborah Lehmann (2006) Pneumococcal Vaccination in Developing Countries *Lancet*. 367(9526): 1880-2

<sup>xv</sup> Turner, Desmond et al. (2008) Improving Public Health by Preventing Pneumococcal Disease. *Report from the All-Party Parliamentary Group on Pneumococcal Disease in the Developing World*.

<sup>xvi</sup> Turner, Desmond et al. (2008) Improving Public Health by Preventing Pneumococcal Disease. *Report from the All-Party Parliamentary Group on Pneumococcal Disease in the Developing World*. P 9.

<sup>xvii</sup> Turner, Desmond et al. (2008) Improving Public Health by Preventing Pneumococcal Disease. *Report from the All-Party Parliamentary Group on Pneumococcal Disease in the Developing World*. P 9.

<sup>13</sup> GAVI Alliance. (2009) *AMC Pilot Progress*. Retrieved 3 February 2009:  
<http://www.vaccineamc.org/progress.html>



- <sup>xix</sup> Turner, Desmond et al. (2008) Improving Public Health by Preventing Pneumococcal Disease. *Report from the All-Party Parliamentary Group on Pneumococcal Disease in the Developing World*. P 15
- <sup>xx</sup> Turner, Desmond et al. (2008) Improving Public Health by Preventing Pneumococcal Disease. *Report from the All-Party Parliamentary Group on Pneumococcal Disease in the Developing World*. P 15
- <sup>xxi</sup> GAVI Alliance. (2009) Retrieved 3 February 2009: <http://www.gavialliance.org/>
- <sup>xxii</sup> World Bank and GAVI (2006) *Framework Document: Pilot AMC for pneumococcal vaccines. Prepared for Donor Working Group*. Retrieved 10 February 2009: <http://www.vaccineamc.org/files/Framework%20Pneumo%20AMC%20Pilot.pdf>
- <sup>xxiii</sup> GAVI Alliance. (2009) Retrieved 3 February 2009: <http://www.gavialliance.org/>
- <sup>xxiv</sup> Eakin, John, Ann Robertson, Blake Poland, David Coburn and Richard Edwards. (1996) Toward a critical social science perspective on health promotion research. *Health Promotion International*. 11(2):157
- <sup>xxv</sup> Buchanan, D.R. (1998) Beyond positivism: humanistic perspectives on theory and research in health education. *Health Education Research*. 13(3): 439
- <sup>xxvi</sup> GAVI Alliance (2009) *Principles*. Retrieved 10 February 2009: <http://www.gavialliance.org/vision/strategy/principles/index.php>
- <sup>xxvii</sup> GAVI Alliance (2009) *Principles*. Retrieved 10 February 2009: <http://www.gavialliance.org/vision/strategy/principles/index.php>
- <sup>xxviii</sup> Buchanan, D.R. (1998) Beyond positivism: humanistic perspectives on theory and research in health education. *Health Education Research*. 13(3): 441
- <sup>xxix</sup> Stiglitz, Joseph. (2008) Turn Left for Growth. *The Guardian*. Retrieved 13 February 2009: <http://www.guardian.co.uk/commentisfree/2008/aug/06/economicgrowth.useconomicgrowth>
- <sup>xxx</sup> Levin, Ruth, Michael Kremer and Alice Albright. (2005) Making Markets for Vaccines Ideas to Action. *Report of the Center for Global Development*. Center for Global Development: x
- <sup>xxxi</sup> Vanberg, Viktor (2008). On Economics and Moral Preferences. *Journal of Economics and Sociology*. 67(4): 606.
- <sup>xxxii</sup> Shogren, Jason and Laura Taylor (2008) On Behavioral-Environmental Economics. *Review of Environmental Economics and Policy*. 2(1): 27
- <sup>xxxiii</sup> GAVI Alliance (2009) *Innovative Partnership*. Retrieved 10 February 2009: [http://www.gavialliance.org/about/in\\_partnership/index.php](http://www.gavialliance.org/about/in_partnership/index.php)
- <sup>xxxiv</sup> Bartholomew, L, Guy Parcel, Gerjo Kok, Nell Gottlieb (2006) *Planning Health Promotion Programs An Intervention Mapping Approach*. Jossey-Bass: San Francisco, 161.
- <sup>xxxv</sup> Bartholomew, L, Guy Parcel, Gerjo Kok, Nell Gottlieb (2006) *Planning Health Promotion Programs An Intervention Mapping Approach*. Jossey-Bass: San Francisco, 161.

- <sup>xxxvi</sup> GAVI and the World Bank. (2006) *AMC Pilot Proposal*. Retrieved 12 February 2009: <http://www.vaccineamc.org/files/AMCPilotProposal.pdf>: p4
- <sup>xxxvii</sup> GAVI and the World Bank. (2006) *AMC Pilot Proposal*. Retrieved 12 February 2009: <http://www.vaccineamc.org/files/AMCPilotProposal.pdf>: p4
- <sup>xxxviii</sup> World Bank and GAVI (2006) *Framework Document: Pilot AMC for pneumococcal vaccines. Prepared for Donor Working Group*. Retrieved 10 February 2009: <http://www.vaccineamc.org/files/Framework%20Pneumo%20AMC%20Pilot.pdf>
- <sup>xxxix</sup> Department of Finance Canada. (2007) *Canada's New Government Doubles Its Contribution to the Global Effort to Develop and Produce Vaccines for Diseases in Developing Countries*. Retrieved 9 February 2009: <http://www.fin.gc.ca/no7/07-011-eng.asp#backgrounder>
- <sup>xl</sup> Goldblatt, David. (2008) Part Two: Target Product Profile(TPP) for the Advance Market Commitment (AMC) for Pneumococcal Conjugate Vaccines. *World Health Organization Pneumococcal TPP expert committee*. Report p 5.
- <sup>xli</sup> Goldblatt, David. (2008) Part Two: Target Product Profile(TPP) for the Advance Market Commitment (AMC) for Pneumococcal Conjugate Vaccines. *World Health Organization Pneumococcal TPP expert committee*. Report p 5.
- <sup>xlii</sup> Bartholomew, L, Guy Parcel, Gerjo Kok, Nell Gottlieb (2006) *Planning Health Promotion Programs An Intervention Mapping Approach*. Jossey-Bass: San Francisco, 277.
- <sup>xliii</sup> GAVI Alliance (2009) *The Bill and Melinda Gates Foundation*. Retrieved 10 February 2009: [http://www.gavialliance.org/about/in\\_partnership/gates/index.php](http://www.gavialliance.org/about/in_partnership/gates/index.php)
- <sup>xliv</sup> Bartholomew, L, Guy Parcel, Gerjo Kok, Nell Gottlieb (2006) *Planning Health Promotion Programs An Intervention Mapping Approach*. Jossey-Bass: San Francisco, 318.
- <sup>xlv</sup> Weick, Karl and Robert Quinn.(1999) *Organizational Change and Development. Annual Review of Psychology. 50: p 362*
- <sup>xlvi</sup> Weick, Karl and Robert Quinn.(1999) *Organizational Change and Development. Annual Review of Psychology. 50: p 362*
- <sup>xlvii</sup> Forman, Lisa (2008) "Rights" and Wrongs: What utility for the right to health in reforming trade rules on medicines. *Health and Human Rights. 10(2): 44*
- <sup>xlviii</sup> Forman, Lisa (2008) "Rights" and Wrongs: What utility for the right to health in reforming trade rules on medicines. *Health and Human Rights. 10(2): 44*
- <sup>xlx</sup> Forman, Lisa (2008) "Rights" and Wrongs: What utility for the right to health in reforming trade rules on medicines. *Health and Human Rights. 10(2): 39.*
- <sup>l</sup> Bartholomew, L, Guy Parcel, Gerjo Kok, Nell Gottlieb (2006) *Planning Health Promotion Programs An Intervention Mapping Approach*. Jossey-Bass: San Francisco, 105
- <sup>li</sup> Weick, Karl and Robert Quinn.(1999) *Organizational Change and Development. Annual Review of Psychology. 50: p 367*
- <sup>lii</sup> Weick, Karl and Robert Quinn.(1999) *Organizational Change and Development. Annual Review of Psychology. 50: p 365*

- 
- liii GAVI Alliance Secretariat (2008) *Preventing Pneumococcal Disease: An Advance Market Commitment for New Vaccines*. Retrieved 30 March 2009: [http://www.vaccineamc.org/files/AMC\\_PneumoFactSheet\\_2.pdf](http://www.vaccineamc.org/files/AMC_PneumoFactSheet_2.pdf)
- liv GAVI Alliance Secretariat (2008) *Advance Market Commitment: Frequently Asked Questions*. Retrieved 30 March 2009: [http://www.vaccineamc.org/files/AMC\\_FAQs.pdf](http://www.vaccineamc.org/files/AMC_FAQs.pdf)
- lv Kremer, Michael (2007) Harnessing ideas to idealism: Arvind Subramanian profiles. *Finance & Development*. 44(4): 6
- lvi Brown, Gordon and Bill Gates (2007) How to Help the World's Poorest Countries. *Speeches and Commentary*. Retrieved: <http://www.gatesfoundation.org/speeches-commentary/Pages/bill-gates-2006-poorest-children-oped.aspx>
- lvii Brown, Gordon and Bill Gates (2007) How to Help the World's Poorest Countries. *Speeches and Commentary*. Retrieved: <http://www.gatesfoundation.org/speeches-commentary/Pages/bill-gates-2006-poorest-children-oped.aspx>
- lviii Oldenburg, Brian and Karen Glantz (2008) Diffusion of Innovations. *Health Behaviour and Health Education* ed. Glantz et al. Josey-Bass, San Francisco: 314
- lix Oldenburg, Brian and Karen Glantz (2008) Diffusion of Innovations. *Health Behaviour and Health Education* ed. Glantz et al. Josey-Bass, San Francisco: 318
- lx Oldenburg, Brian and Karen Glantz (2008) Diffusion of Innovations. *Health Behaviour and Health Education* ed. Glantz et al. Josey-Bass, San Francisco: 319
- lxi Oldenburg, Brian and Karen Glantz (2008) Diffusion of Innovations. *Health Behaviour and Health Education* ed. Glantz et al. Josey-Bass, San Francisco: 323
- lxii GAVI Alliance. *Consultation and Advisory Process for Advance Market Commitment*. Retrieved 30 March: <http://www.vaccineamc.org/files/amcconsultationreportdec.pdf>
- lxiii GAVI Alliance. *Consultation and Advisory Process for Advance Market Commitment*. Retrieved 30 March: <http://www.vaccineamc.org/files/amcconsultationreportdec.pdf>
- lxiv Implementation Working Group (2008). Report on Advance Market Commitment for Pneumococcal Vaccines. Retrieved 30 March: [http://www.vaccineamc.org/files/AMC\\_IWG10JULY08\\_2\\_.pdf](http://www.vaccineamc.org/files/AMC_IWG10JULY08_2_.pdf)
- lxv Oldenburg, Brian and Karen Glantz (2008) Diffusion of Innovations. *Health Behaviour and Health Education* ed. Glantz et al. Josey-Bass, San Francisco: 322
- lxvi The Cancer Council of New South Wales. *Health Promotion Glossary of Terms*. Retrieved 31 March: [http://www.nswcc.org.au/html/schoolsandcommunities/schoolsandchildcare/schoolresources/pdhpe/downloads/PDHPE\\_glossary\\_terms.pdf](http://www.nswcc.org.au/html/schoolsandcommunities/schoolsandchildcare/schoolresources/pdhpe/downloads/PDHPE_glossary_terms.pdf)
- lxvii Implementation Working Group (2008). Report on Advance Market Commitment for Pneumococcal Vaccines. Retrieved 30 March: [http://www.vaccineamc.org/files/AMC\\_IWG10JULY08\\_2\\_.pdf](http://www.vaccineamc.org/files/AMC_IWG10JULY08_2_.pdf)
- lxviii The Cancer Council of New South Wales. *Health Promotion Glossary of Terms*. Retrieved 31 March: [http://www.nswcc.org.au/html/schoolsandcommunities/schoolsandchildcare/schoolresources/pdhpe/downloads/PDHPE\\_glossary\\_terms.pdf](http://www.nswcc.org.au/html/schoolsandcommunities/schoolsandchildcare/schoolresources/pdhpe/downloads/PDHPE_glossary_terms.pdf)

- 
- <sup>lxix</sup> Implementation Working Group (2008). Report on Advance Market Commitment for Pneumococcal Vaccines. Retrieved 30 March:  
[http://www.vaccineamc.org/files/AMC\\_IWG10JULY08\\_2\\_.pdf](http://www.vaccineamc.org/files/AMC_IWG10JULY08_2_.pdf)
- <sup>lxx</sup> Bartholomew, L, Guy Parcel, Gerjo Kok, Nell Gottlieb (2006) *Planning Health Promotion Programs An Intervention Mapping Approach*. Jossey-Bass: San Francisco, 105
- <sup>lxxi</sup> Implementation Working Group (2008). Report on Advance Market Commitment for Pneumococcal Vaccines. Retrieved 30 March:  
[http://www.vaccineamc.org/files/AMC\\_IWG10JULY08\\_2\\_.pdf](http://www.vaccineamc.org/files/AMC_IWG10JULY08_2_.pdf)
- <sup>lxxii</sup> Kapiriri, Lydia. (2009) *Building coalitions and Partnerships*. Talk presented to Global Health Course, University of Toronto.
- <sup>lxxiii</sup> The Canadian Council for Public Private Partnerships. (2009) *Definitions*. Retrieved 31 March 2009: [http://www.pppcouncil.ca/aboutPPP\\_definition.asp](http://www.pppcouncil.ca/aboutPPP_definition.asp)
- <sup>lxxiv</sup> Kapiriri, Lydia. (2009) *Building coalitions and Partnerships*. Talk presented to Global Health Course, University of Toronto.
- <sup>lxxv</sup> Bartholomew, L, Guy Parcel, Gerjo Kok, Nell Gottlieb (2006) *Planning Health Promotion Programs An Intervention Mapping Approach*. Jossey-Bass: San Francisco, 475.
- <sup>lxxvi</sup> Advance Market Commitments (2008). *Advance Market Commitment for Pneumococcal Vaccines: Report of the Monitoring and Evaluability Study*. Retrieved 31 March: [http://www.vaccineamc.org/files/amc\\_mont\\_eval\\_stdy.pdf](http://www.vaccineamc.org/files/amc_mont_eval_stdy.pdf)
- <sup>lxxvii</sup> Advance Market Commitments (2008). *Advance Market Commitment for Pneumococcal Vaccines: Report of the Monitoring and Evaluability Study*. Retrieved 31 March: [http://www.vaccineamc.org/files/amc\\_mont\\_eval\\_stdy.pdf](http://www.vaccineamc.org/files/amc_mont_eval_stdy.pdf)
- <sup>lxxviii</sup> Advance Market Commitments (2008). *Advance Market Commitment for Pneumococcal Vaccines: Report of the Monitoring and Evaluability Study*. Retrieved 31 March: [http://www.vaccineamc.org/files/amc\\_mont\\_eval\\_stdy.pdf](http://www.vaccineamc.org/files/amc_mont_eval_stdy.pdf)
- <sup>lxxix</sup> Advance Market Commitments (2008). *Advance Market Commitment for Pneumococcal Vaccines: Report of the Monitoring and Evaluability Study*. Retrieved 31 March: [http://www.vaccineamc.org/files/amc\\_mont\\_eval\\_stdy.pdf](http://www.vaccineamc.org/files/amc_mont_eval_stdy.pdf)
- <sup>lxxx</sup> Advance Market Commitments (2008). *Advance Market Commitment for Pneumococcal Vaccines: Report of the Monitoring and Evaluability Study*. Retrieved 31 March: [http://www.vaccineamc.org/files/amc\\_mont\\_eval\\_stdy.pdf](http://www.vaccineamc.org/files/amc_mont_eval_stdy.pdf)
- <sup>lxxxii</sup> GAVI Alliance Secretariat (2008) *Preventing Pneumococcal Disease: An Advance Market Commitment for New Vaccines*. Retrieved 30 March 2009:  
[http://www.vaccineamc.org/files/AMC\\_PneumoFactSheet\\_2.pdf](http://www.vaccineamc.org/files/AMC_PneumoFactSheet_2.pdf)
- <sup>lxxxiii</sup> Bartholomew, L, Guy Parcel, Gerjo Kok, Nell Gottlieb (2006) *Planning Health Promotion Programs An Intervention Mapping Approach*. Jossey-Bass: San Francisco, 161.
- <sup>lxxxiiii</sup> WHO (2003) *Weekly epidemiological record*. 78(14): 110
- <sup>lxxxv</sup> WHO (1986) *Ottawa Charter for Health Promotion*
- <sup>lxxxvi</sup> Dalla Lana School of Public Health (2009) *MHSc (Health Promotion Specialization)* Retrieved 6 April: [http://www.phs.utoronto.ca/mhsc\\_health\\_promotion.asp](http://www.phs.utoronto.ca/mhsc_health_promotion.asp)

<sup>lxxxvi</sup> World Health Organization (2009) *Primary Health Care*. Retrieved 10 April:

[http://www.who.int/topics/primary\\_health\\_care/en/](http://www.who.int/topics/primary_health_care/en/)

<sup>lxxxvii</sup> WHO (2005) *Bangkok Charter for Health Promotion in a Globalized World*.

<sup>lxxxviii</sup> Bartholomew, L, Guy Parcel, Gerjo Kok, Nell Gottlieb (2006) *Planning Health Promotion Programs An Intervention Mapping Approach*. Jossey-Bass: San Francisco, 448.

## Appendix 1: Problem Map - Heightened Risk of Mortality attributable to Pneumococcal Disease



## Appendix 2: List of countries approved for pneumococcal vaccination

<b>Countries Approved for GAVI funding</b>
Cameroon
Central African Republic
Congo
Democratic Republic of the Congo
Gambia
Guyana
Honduras
Kenya
Nicaragua
Rwanda
Yemen

---

BIBLIOGRAPHY

- Advance Market Commitments (2008). *Advance Market Commitment for Pneumococcal Vaccines: Report of the Monitoring and Evaluability Study*. Retrieved 31 March:  
[http://www.vaccineamc.org/files/amc\\_mont\\_eval\\_stdy.pdf](http://www.vaccineamc.org/files/amc_mont_eval_stdy.pdf)
- Bartholomew, L, Guy Parcel, Gerjo Kok, Nell Gottlieb (2006) *Planning Health Promotion Programs An Intervention Mapping Approach*. Jossey-Bass: San Francisco.
- Brown, Gordon and Bill Gates (2007) How to Help the World's Poorest Countries. *Speeches and Commentary*. Retrieved:  
<http://www.gatesfoundation.org/speeches-commentary/Pages/bill-gates-2006-poorest-children-oped.aspx>
- Cripps, Allan W, Amanda Leach, Deborah Lehmann (2006) Pneumococcal Vaccination in Developing Countries *Lancet*. 367(9526): 1880-2
- Dalla Lana School of Public Health (2009) *MHSc (Health Promotion Specialization)* Retrieved 6 April:  
[http://www.phs.utoronto.ca/mhsc\\_health\\_promotion.asp](http://www.phs.utoronto.ca/mhsc_health_promotion.asp)
- Department of Finance Canada. (2007) Canada's New Government Doubles Its Contribution to the Global Effort to Develop and Produce Vaccines for Diseases in Developing Countries. Retrieved 9 February 2009:  
<http://www.fin.gc.ca/n07/07-011-eng.asp#backgrounder>
- Eakin, John, Ann Robertson, Blake Poland, David Coburn and Richard Edwards. (1996) Toward a critical social science perspective on health promotion research. *Health Promotion International*. 11(2):157
- Forman, Lisa (2008) "Rights" and Wrongs: What utility for the right to health in reforming trade rules on medicines. *Health and Human Rights*. 10(2): 44
- Gadot, Laurent (2008) Advance Market Commitments: are they worth the hype? *Putting Patients' Needs First, New Directions in Medical Innovation*. Medics Sans Frontiers.p 28.
- GAVI Alliance. (2009) *AMC Pilot Progress*. Retrieved 3 February 2009:  
<http://www.vaccineamc.org/progress.html>



- GAVI Alliance (2009) *The Bill and Melinda Gates Foundation*. Retrieved 10 February 2009:  
[http://www.gavialliance.org/about/in\\_partnership/gates/index.php](http://www.gavialliance.org/about/in_partnership/gates/index.php)
- GAVI Alliance (2009) *Principles*. Retrieved 10 February 2009:  
<http://www.gavialliance.org/vision/strategy/principles/index.php>
- GAVI Alliance (2009) *Innovative Partnership*. Retrieved 10 February 2009:  
[http://www.gavialliance.org/about/in\\_partnership/index.php](http://www.gavialliance.org/about/in_partnership/index.php)
- GAVI Alliance. *Consultation and Advisory Process for Advance Market Commitment*. Retrieved 30 March: <http://www.vaccineamc.org/files/amcconsultationreportdec.pdf>
- GAVI Alliance Secretariat (2008) *Preventing Pneumococcal Disease: An Advance Market Commitment for New Vaccines*. Retrieved 30 March 2009:  
[http://www.vaccineamc.org/files/AMC\\_PneumoFactSheet\\_2.pdf](http://www.vaccineamc.org/files/AMC_PneumoFactSheet_2.pdf)
- GAVI Alliance Secretariat (2008) *Advance Market Commitment: Frequently Asked Questions*. Retrieved 30 March 2009:  
[http://www.vaccineamc.org/files/AMC\\_FAQs.pdf](http://www.vaccineamc.org/files/AMC_FAQs.pdf)
- GAVI Alliance Secretariat (2008) *Preventing Pneumococcal Disease: An Advance Market Commitment for New Vaccines*. Retrieved 30 March 2009:  
[http://www.vaccineamc.org/files/AMC\\_PneumoFactSheet\\_2.pdf](http://www.vaccineamc.org/files/AMC_PneumoFactSheet_2.pdf)
- Goldblatt, David. (2008) Part Two: Target Product Profile(TPP) for the Advance Market Commitment (AMC) for Pneumococcal Conjugate Vaccines. *World Health Organization Pneumococcal TPP expert committee*. Report p 5.
- Implementation Working Group (2008). Report on Advance Market Commitment for Pneumococcal Vaccines. Retrieved 30 March:  
[http://www.vaccineamc.org/files/AMC\\_IWG10JULY08\\_2\\_.pdf](http://www.vaccineamc.org/files/AMC_IWG10JULY08_2_.pdf)
- Kapiriri, Lydia. (2009) *Building coalitions and Partnerships*. Talk presented to Global Health Course, University of Toronto.
- Kremer, Michael (2007) Harnessing ideas to idealism: Arvind Subramanian profiles. *Finance & Development*. 44(4): 6
- Levine, Orin et al. (2006) Pneumococcal vaccination in developing countries. *Lancet*. 367(9526): 1897

---

Levin, Ruth, Michael Kremer and Alice Albright. (2005) Making Markets for Vaccines Ideas to Action. *Report of the Center for Global Development*. Center for Global Development: x

Oldenburg, Brian and Karen Glantz (2008) Diffusion of Innovations. *Health Behaviour and Health Education* ed. Glantz et al. Josey-Bass, San Francisco: 322

pneumoAPID (2008) *Pneumococcal Disease*. Retrieved 11 February:  
[http://www.preventpneumo.org/diseases/pneumococcal\\_diseases/index.cfm](http://www.preventpneumo.org/diseases/pneumococcal_diseases/index.cfm)

Stiglitz, Joseph. (2008) Turn Left for Growth. *The Guardian*. Retrieved 13 February 2009:<http://www.guardian.co.uk/commentisfree/2008/aug/06/economicgrowth.useconomicgrowth>

Shogren, Jason and Laura Taylor (2008) On Behavioral-Environmental Economics. *Review of Environmental Economics and Policy*. 2(1): 27

The Canadian Council for Public Private Partnerships. (2009) *Definitions*. Retrieved 31 March 2009: [http://www.pppcouncil.ca/aboutPPP\\_definition.asp](http://www.pppcouncil.ca/aboutPPP_definition.asp)

The Cancer Council of New South Wales. *Health Promotion Glossary of Terms*. Retrieved 31 March:  
[http://www.nswcc.org.au/html/schoolsandcommunities/schoolsandchildcare/schoolresources/pdhpe/downloads/PDHPE\\_glossary\\_terms.pdf](http://www.nswcc.org.au/html/schoolsandcommunities/schoolsandchildcare/schoolresources/pdhpe/downloads/PDHPE_glossary_terms.pdf)

Turner, Desmond et al. (2008) Improving Public Health by Preventing Pneumococcal Disease. *Report from the All-Party Parliamentary Group on Pneumococcal Disease in the Developing World*.

Vanberg, Viktor (2008). On Economics and Moral Preferences. *Journal of Economics and Sociology*. 67(4): 606.

Warlaw, Tessa, Emily Johansson, Matthew Hodge et al. (2006) Pneumonia: the silent killer of children. *UNICEF Publications*. P 7

Weick, Karl and Robert Quinn.(1999) Organizational Change and Development. *Annual Review of Psychology*. 50: p 365

World Bank and GAVI (2006) *Framework Document: Pilot AMC for pneumococcal vaccines*. Prepared for Donor Working Group. Retrieved 10 February 2009:<http://www.vaccineamc.org/files/Framework%20Pneumo%20AMC%20Pilot.pdf>

WHO (2003) *Weekly epidemiological record*. 78(14): 110

WHO (1986) *Ottawa Charter for Health Promotion*

WHO (2009) *Primary Health Care*. Retrieved 10 April:  
[http://www.who.int/topics/primary\\_health\\_care/en/](http://www.who.int/topics/primary_health_care/en/)

WHO (2005) *Bangkok Charter for Health Promotion in a Globalized World*