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# Network advocacy and the emergence of global attention to newborn survival

Jeremy Shiffman\*

Department of Public Administration and Policy, School of Public Affairs, American University, 4400 Massachusetts Ave., NW, Washington, DC 20016-8070, USA

\*Corresponding author. Department of Public Administration and Policy, School of Public Affairs, American University, 4400 Massachusetts Ave., NW, Washington, DC 20016-8070, USA. E-mail: jshiffma@american.edu

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Globally 2.9 million babies die each year before reaching 28 days of life. Over the past quarter century, neonatal mortality has declined at a slower pace than post-neonatal under-five mortality: in consequence newborns now comprise 44% of all deaths to children under five years. Despite high numbers of newborn deaths, global organizations and national governments paid little attention to the issue until 2000, and resources, while growing since then, remain inadequate. This study examines the factors behind these patterns of policy attention: the delayed emergence of attention, its sudden appearance in 2000, its growth thereafter, but the dearth of resources to date. Drawing on a framework on global health networks grounded in collective action theory, the study finds that a newborn survival network helped to shift perceptions about the problem's severity and tractability, contributing to the rise of global attention. Its efforts were facilitated by pressure on governments to achieve the child survival Millennium Development Goal and by growing awareness that the neonatal period constituted a growing percentage of under-five mortality, a fact the network publicized. The network's relatively recent emergence, its predominantly technical rather than political composition and strategies, and its inability to date to find a framing of the issue that has convinced national political leaders of the issue's urgency, in part explain the insufficiency of resources. However, since 2010 a number of non-health oriented inter-governmental organizations have begun to pay attention to the issue, and several countries with high neonatal mortality have created national plans, developments which augur well for the future. The study points to two broader implications concerning how neglected global health issues come to attract attention: priority emerges from a confluence of factors, rather than any single cause; and growth in priority may depend on the creation of a broader political coalition that extends beyond the largely technically oriented actors who may first press for attention to a problem.

**Keywords** Global health policy, health policy analysis, neonatal mortality, networks, newborn survival

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## KEY MESSAGES

- Although ~3 million babies aged 28 days and younger die each year, only in the past 15 years have global organizations and national governments begun to prioritize newborn survival, and resources remain inadequate to address the problem.
- Advocacy by an informal network of newborn survival champions and organizations involved in global health contributed to the emergence of global attention to the issue.
- Marked growth in policy attention may require creating a political coalition that extends beyond the health field and finding a framing of the issue that conveys urgency, as has occurred for maternal survival and HIV/AIDS.

## Introduction

Globally, nearly 3 million babies 28 days or younger die each year (United Nations Inter-agency Group for Child Mortality Estimation 2011; UN Inter-agency Group for Child Mortality Estimation 2013), more than 1 million on their day of birth (Lawn *et al.* 2014). Mortality among babies 28 days or younger has declined at a much slower pace than that for children between 29 days and 5 years of age—an annual rate of reduction (ARR) of 2.1 vs 3.4% over the period 1990–2012 (Lawn *et al.* 2014). As a result, newborns now account for 44% of the 6.6 million annual deaths to children <5 years of age (United Nations Inter-agency Group for Child Mortality Estimation 2011; UN Inter-agency Group for Child Mortality Estimation 2013).

Despite high neonatal mortality, global and national attention to this problem emerged only recently. Prior to 2000, no global organization provided more than minimal resources for newborn survival, and few governments of low-income countries had adopted policies and programmes explicitly designed to lower neonatal mortality (Darmstadt *et al.* 2005; Shiffman 2010; Darmstadt *et al.* 2014). Since 2000, a number of global organizations have come to embrace newborn survival as a priority. Also, in 2014 194 countries endorsed a global action plan on newborn survival (World Health Organization and UNICEF 2014). However, global and national resources committed to newborn survival are still incommensurate with the severity of the problem (Darmstadt *et al.* 2014).

Part of a special supplement on global health networks, this article investigates three empirical puzzles:

- Why priority emerged much later for this issue than for other high-burden global health problems
- Why, after a history of neglect, attention appeared suddenly beginning in 2000
- Why resources and priority have grown over the past decade but remain inadequate

To analyse these empirical puzzles, I draw on a framework grounded in theory on collective action that forms the basis for all articles in this special supplement on global health networks (Shiffman *et al.* 2016). I pay particular attention to efforts by an emerging global newborn survival network to shift perceptions about the severity and tractability of the problem. In the sections that follow I review this framework and discuss the study's methodology. I then present a historical narrative on the evolution of global political attention for newborn survival, organized around explaining these three empirical puzzles. In the discussion and conclusion I draw out implications for the

global newborn survival agenda specifically, and for the study of global health networks more broadly.

## Conceptual framework

This study is part of the Global Health Advocacy and Policy Project (GHAPP), a research initiative examining networks that have mobilized to address six global health problems: tuberculosis, pneumonia, tobacco use, alcohol harm, neonatal mortality and maternal mortality. Its aim is to understand why networks crystallize surrounding some issues but not others, and why some are better able to influence policy and public health outcomes. Examining network emergence, evolution and influence requires a historical perspective; therefore, this study, like all the others in this supplement, traces network developments across time, rather than focusing solely on recent occurrences. GHAPP studies draw on a common conceptual framework grounded in theory on collective action from political science, sociology and economics (Kingdon 1984; Snow *et al.* 1986; Stone 1989; Powell 1990; Finnemore and Sikkink 1998; Keck and Sikkink 1998; Marsh and Smith 2000; McAdam *et al.* 2001; Kahler 2009). The introductory article to this supplement presents the framework in detail (Shiffman *et al.* 2016).

The GHAPP studies examine network outputs, policy consequences and impact. Outputs are the immediate products of network activity, such as guidance on intervention strategy, research and international meetings. Policy consequences pertain to global and national policy processes, including international resolutions, funding, national policy adoption and the scale-up of interventions. Impact refers to the ultimate objective of improvement in population health. The framework consists of three categories of factors (Shiffman *et al.* 2016). One category, network and actor features, concerns factors internal to the network involving strategy and structure and attributes of the actors that constitute the network or are involved in creating it. This category pertains to how networks and the individuals and organizations that create and comprise them exercise agency. A second category, the policy environment, concerns factors external to the network that shape both its nature and the effects the network hopes to produce. The third category, issue characteristics, concerns features of the problem the network seeks to address. The idea is that issues vary on a number of dimensions that make them more or less difficult to tackle. GHAPP studies begin with the presumption that no single category of factors is determinative: rather factors in each of the three interact with one another to shape policy and public health effects.

In each category, there are several factors that may be particularly influential. Among network and actor features, the

existence of effective leaders (Factor 1) may be one reason networks crystallize in the first place, and why, once they appear, they are able to achieve their objectives. The quality of governance (Factor 2) may also matter: the effectiveness of the institutions network members set up to steer themselves towards collective goals (Buse and Walt 2000). A third factor is composition (Factor 3). Diverse networks that link scientists, advocates, policymakers and others from both high- and low-income countries may achieve better outcomes than uniform ones because diversity improves collective understanding and problem solving, among other benefits (Hong and Page 2004; Page 2007). On the other hand, heterogeneity may hamper cohesion and increase the likelihood that networks disagree on objectives. The fourth factor is framing strategy (Factor 4) (Snow *et al.* 1986; McInnes and Lee 2012): how network actors publicly position an issue to attract attention and resources. Networks may differ in their capacities to discover frames that work.

Several factors in the policy environment may be particularly influential. Among these are potential allies and opponents (Factor 5). If there are many groups whose interests align with a network's goals, that network is more likely to expand and be effective than one that faces a dearth of potential allies. Opponents, such as the tobacco industry, may both hinder and facilitate network outcomes: they may seek to discredit the network but may also inspire mobilization. Substantial funding (Factor 6) may enable a network to flourish; however, a network set up at the behest of donors may be perceived as less legitimate than those that emerge from grassroots activism. Norms (Factor 7)—standards of appropriate behaviour for a particular group of actors—may also be influential (Finnemore and Sikkink 1998; Katzenstein 1996). The starkest examples of influential norms in global health are those that the health-related Millennium Development Goals (MDGs) advanced (Fukuda-Parr and Hulme 2011). These goals raised expectations that states, international organizations and other global actors act to reduce burden from that subset of global health problems selected for inclusion.

Among issue characteristics, severity (Factor 8), tractability (Factor 9) and the nature of affected groups (Factor 10) may be particularly influential. Robust networks may be more likely to emerge when problems lead to high mortality and morbidity or social disruption—or are perceived to do so. Also, individuals and organizations may be more likely to act on problems perceived to be soluble (Stone 1989). In addition, affected populations that inspire sympathy, such as children, may be more likely to inspire network mobilization (Stone 1989; Schneider and Ingram 1993) than those that do not. In addition, positive network results may be more likely if affected populations are able to mobilize on their own behalf, as people living with HIV/AIDS have done.

## Methods

This study uses a process-tracing methodology, which involves drawing on multiple kinds of data to uncover mechanisms that link causes with effects (Bennett 2010; Beach and Pedersen 2013). Employing process-tracing, I pieced together the history of global attention to newborn survival to understand the factors that drove change (milestones noted in Table 1). I selected a case

study process-tracing methodology, since it is better suited to achieving this objective than other approaches such as structured surveys or econometric analyses. This is true because the defining feature of a case study is that it considers a phenomenon in its real-life context, thereby giving it the capacity to reveal underlying causal mechanisms and processes (Yin 2003).

I used four types of sources: key informant interviews; documents from donors, governments, non-governmental organizations (NGOs) and other organizations; published research and observation of professional meetings. Between 2009 and 2014, I conducted 42 key informant interviews with three kinds of individuals: key network actors; external observers of this network in a position to offer authoritative information about their activities and network critics (Box 1). I identified these individuals through publicly available documents, commentaries and consultation with individuals working on the issue—a key informant rather than a sampling selection strategy. I interviewed individuals from ministries of health and other government agencies in low-income countries, civil society organizations in low-income countries, professional associations in low- and high-income countries, United Nations agencies, multilateral and bilateral donors, private foundations, international NGOs and research and academic institutions. Key informants came from Bangladesh, Cameroon, India, Italy, Malawi, Mozambique, Nepal, Norway, Pakistan, South Africa, Sweden, UK and USA. I informed interviewees that they would not be identified in the text unless they assented to be named. I either recorded interviews and had them transcribed or if interviewees felt uncomfortable with this practice took detailed notes. I conducted 17 interviews face-to-face and 25 via telephone or Skype. I used a semi-structured interview instrument with mostly open-ended questions.

### Box 1. Organizational Affiliations of Key Informants

Aga Khan University; All India Institute of Medical Sciences; Columbia University; Bangladesh Neonatal Forum; Family Care International; Bill and Melinda Gates Foundation; University of London Institute for Child Health; Johns Hopkins Bloomberg School of Public Health; London School of Hygiene and Tropical Medicine; Ministry of Health and Family Welfare-Government of Bangladesh; Ministry of Health and Family Welfare-Government of India; Ministry of Health-Government of Malawi; Ministry of Public Health-Government of Cameroon; PMNCH; Save the Children USA; Society For Education, Action and Research in Community Health; SNL; UNICEF; University of Aberdeen; USAID; and World Health Organization

Although I asked some questions of most interviewees (for instance, who he or she thought were the most important individuals and organizations working on the issue), I tailored the selection of questions to each interviewee to elicit his or her unique knowledge. The Institutional Review Boards of Syracuse University and American University granted the study exempt status as they deemed it to have a public policy focus and to pose minimal risk to informants.

Additionally, I gathered and reviewed over 400 published and unpublished documents, reports and articles on newborn

**Table 1** Major developments in the emergence of global attention to newborn survival

<b>Pre-1999: neglect of the issue</b>	<b>2010–15: a new wave of global and national attention</b>
1982: Child survival initiative launched, led by UNICEF's James Grant	2010: G8 announce new commitments of \$7.3 billion for maternal, newborn and child health
1987: Global safe motherhood initiative launched	2010: African Union heads of state make formal declaration of support for maternal, newborn and child health
1989: USAID's maternal health programme, MotherCare, launched; includes some newborn components	2010: UN launches Global Strategy for Women's and Children's Health, including \$40 billion worth of commitments
1990: World Summit for Children; includes neonatal tetanus elimination goal	2012: Inter-Parliamentary Union passes resolution calling for parliaments to take action on MDGs 4 and 5
1996: WHO estimate of 5 million annual neonatal deaths	2012: A Promise Renewed launched, an initiative to end preventable child deaths
Pre-1999: Individuals working on newborn survival in low-income settings doing so largely in isolation from one another	2012: Born Too Soon—a global report on prematurity—reaches more than a billion people via media
Pre-1999: Widespread belief that problem is intractable in low-income settings	2012: World Prematurity Day catalyzes parents in more than 60 countries
<b>1999–2004: attention emerges</b>	2012: US, Ethiopia and India convene forum for heads of state on child survival
1999: Seminar at Johns Hopkins on perinatal deaths in low-income settings	2012: UNICEF hires point person on newborn survival
1999: Bang article on neonatal mortality reduction in rural India published in <i>Lancet</i>	2013: First global conference on newborn survival in Johannesburg
2000: Save the Children USA's Saving Newborn Lives programme forms	2013–14: 17 national and 3 regional consultations to provide input into ENAP (Every Newborn Action Plan)
2000: Healthy Newborn Partnership launched	2013–15: Governments of several low-income countries launch national newborn strategies in conjunction with ENAP
2000: Informal network of newborn survival proponents begins to coalesce	2014: World Health Assembly resolution on ENAP endorsed by 194 states; ENAP officially launched at meeting of PMNCH
2001: MDGs announced; includes a child survival goal	2014: Second <i>Lancet</i> series on newborn survival
2004: USAID hires point person on newborn survival	2014: At summit in Toronto Canadian Prime Minister pledges additional \$3.5 billion for maternal, newborn and child health
2004: USAID launches ACCESS, a \$75 million maternal and newborn health programme	2015: Malawi becomes latest country to adopt a national newborn action plan following ENAP
2004: Nepal launches national newborn action plan—first low-income country to do so	
<b>2005–10: attention grows</b>	
2005: First <i>Lancet</i> newborn survival series	
2005: WHO's <i>World Health Report</i> focuses on maternal, newborn and child health; includes chapter specifically on newborns	
2005: Partnership for Maternal, Newborn and Child Health (PMNCH) forms	
2005: Countdown to 2015 forms	
2005: Saving Newborn Lives receives grant from Gates Foundation for second phase	
2005: Latin American and Caribbean Newborn Health Alliance forms	
2005–07: Gates Foundation provides \$220.5 million in grants with large neonatal components	
2006: Publication of <i>Opportunities for Africa's Newborns</i>	
2008: Countdown to 2015 adds newborn and maternal survival to its child survival mandate	
2008: USAID launches M-CHIP (Maternal and Child Health Integrated Program), a \$600 million successor programme to ACCESS, working in 50 countries	
2008–August 2014: Gates Foundation provides \$565.3 million in grants with large neonatal components	
2008: By this year at least 33 African governments have developed national plans that include neonatal health	
2009: Gates Foundation newborn survival champion has 4-hour meeting with Bill Gates on the subject	
2009: Gates Foundation approves strategy with major emphasis on newborn health	
2010: Healthy Newborn Network launched	
2010: Helping Babies Breathe launched	

survival. I identified these materials through archives, organizational websites, consultation with key informants and PubMed and other searches. Among the items I collected were internal network reports, external assessments of network activities, internal documents of the organizations that comprise the networks, external assessment of the activities of these organizations, biographies of key individuals involved in the networks, global resolutions, funding analyses, statistical records, epidemiological and scientific studies, national health plans and national health project assessments. For developments prior to 2005, I relied in part on a previous report on newborn survival (Shiffman 2010) and interviews conducted for that report, supplementing the pre-2005 account with newly acquired documentation and interview material. In addition, between 2009 and 2014 I attended five professional meetings involving network members, where I observed deliberations, spoke with individuals and gathered documents. These included consultative meetings on the Every Newborn Action Plan (ENAP) (discussed later).

Once I had completed the interviews and collected documents, I organized these materials into a database. I used the broad framework categories of network and actor features, policy environment and issue characteristics to code materials. I also coded information chronologically to establish a timeline of key events. I coded largely deductively, assessing causality with reference to the framework; however, I also worked inductively as my understanding of the newborn case in part shaped the framework categories. To code and analyse the data, I used NVIVO 9 software (QSR International, Melbourne, Australia), a program that facilitates the analysis of qualitative data.

Case studies that rely heavily on interviews with involved actors are susceptible to bias. To minimize this possibility, I employed several techniques recommended by case study methodology experts to address potential error (Yin 2003; Brady and Collier 2010; Gerring 2012). First and foremost I triangulated among sources. My information came not just from interviews but also from published sources and independent reports. Second, I did not rely on individual interviews predominantly to check historical accuracy because these were susceptible to recall bias; instead, when interviewees reported a significant event, I checked published literature or reports for corroboration. I also inquired about these events with multiple respondents. Finally, I received and incorporated feedback on a draft of this manuscript from four individuals familiar with the history of global efforts to address newborn survival, including three who were members of the network I studied.

## Results

### Pre-1999: neglect of the issue

Prior to the 2000s, only a handful of individuals focused their careers on newborn survival in low-income countries, and they interacted little with one another (Interview (I) numbers 18 and 31). They faced a widespread perception among health professionals that the problem was largely intractable: the belief that in the absence of expensive hospital-based technology rarely available in resource-deprived settings, very sick newborns could not be saved (Zupan and Aahman 2005; Shiffman 2010; Darmstadt *et al.* 2014). They also faced a perception by

many local community members that newborn deaths were an inevitable part of daily life, a belief that resulted in poor care-seeking (Waltensperger 2001). A pediatrician from a low-income country, who subsequently became a prominent member of an informal network for newborn survival, put it this way (I18):

The landscape was very hostile. The concept of being able to do something for newborn care in developing countries did not exist.... [I was working] completely in isolation. The only people that I empathized with at that time were a few people from the professional organizations.

A physician working from South Asia, who would also come to play a major role in advancing newborn survival, commented (I7):

People didn't complain that newborns were dying because people just thought fatalistically that the newborn ought to die... that God did not desire their survival.

Despite this difficult environment, several pre-2000 developments, and one shortly thereafter, provided favourable conditions for the emergence of attention. Two initiatives that potentially could encompass the newborn—child and maternal survival—were gaining momentum. In 1982, UNICEF's head James Grant launched a child survival initiative focused on four interventions that came to be known by the acronym GOBI: growth monitoring, oral rehydration, breastfeeding and immunizations (UNICEF 1996). As part of global child survival efforts, the 1990 World Summit for Children, with UNICEF as a central organizer, included ambitious goals for reducing infant and child mortality, including eliminating neonatal tetanus by 1995 (UNICEF n.d.). And in 1987, the United Nations Population Fund (UNFPA), United Nations Development Programme (UNDP) and World Bank sponsored a conference in Nairobi, Kenya that launched a global safe motherhood initiative designed to reduce maternal mortality levels by half by the year 2000. In addition, data existed pointing to the severity of the problem. In 1996, the World Health Organization (1996) (WHO) estimated there were 5.08 million neonatal deaths in the previous year, comprising two-thirds of infant mortality. Moreover, in 2001 United Nations member states agreed to eight MDGs—global poverty alleviation objectives to be achieved by 2015. Goals 4 and 5 concerned child and maternal survival, respectively.

### 1999–2004: attention emerges

A series of developments from 1999 sparked growth in awareness among global health organizations of the severity of the problem and a dramatic shift in perceptions of the problem's tractability (Shiffman 2010). In 1999, a seminar at Johns Hopkins University helped to form initial connections between individuals concerned with perinatal deaths in low-income settings (Child Health Research Project 1999). With funding from the US Agency for International Development (USAID), a group of child survival researchers aware that newborn deaths constituted a large percentage of child mortality brought together experts to identify causes of and interventions for perinatal and neonatal mortality (I21). The

most important development at the seminar was to introduce these individuals to the work of an Indian physician, Abhay Bang, who with colleagues had shown the effectiveness of home-based neonatal care delivered by village women. This research was published in *The Lancet* later the same year (Bang *et al.* 1999). At the seminar Bang presented results from a controlled study that showed a 62% reduction in neonatal mortality in the intervention area. His results surprised and encouraged seminar participants, most of whom had never thought that this kind of care could produce such dramatic results (I23).

A few months after the Johns Hopkins seminar, the head of health and nutrition at Save the Children USA sat down with his colleagues to discuss health priorities for the organization (I3) (Shiffman 2010). Influenced by the seminar report, Bang's research and data on newborn death levels, they hit upon newborn survival as a new area for Save the Children's work (I3; I8). Shortly after this discussion, the health and nutrition head approached the health chief at the Gates Foundation—which had been founded 2 years prior—with an idea for a global programme on newborn survival. At the time, the Foundation was looking for reliable organizations to carry out large global health programmes, so there was a match in interests between Save the Children and the Foundation. The Gates global health chief, who had not been thinking about newborn survival, latched on to the idea immediately (I8):

Childhood survival was getting the attention; maternal mortality was getting the attention; but newborn mortality was not getting attention. It was sort of like it didn't exist... Here was something that you could address immediately with relatively low costs, easy to use technologies that already existed, so I was very receptive... It's like finding a great buy in a department store.

Save the Children submitted a six-page proposal for a 5-year, \$50 million programme (Save the Children USA 2000). The programme aimed to draw attention to newborn deaths, promote the adoption of effective interventions in countries with high neonatal mortality and support research to improve newborn survival. At the time, the Foundation did not have an elaborate bureaucracy, and the proposal passed through the grant review process swiftly. Save the Children received the entirety of the amount it requested, and in June 2000 launched its Saving Newborn Lives (2006) (SNL) programme. SNL initially focused on six countries—Bangladesh, Bolivia, Malawi, Mali, Nepal and Pakistan—and established smaller programmes in seven more.

Later in 2000, SNL sought to formalize an alliance of organizations with an interest in newborn survival: it helped to create and was the secretariat for the Healthy Newborn Partnership, an entity that linked SNL with several major actors in global health, including Johns Hopkins University, USAID, UNICEF, the World Bank and the World Health Organization (Tinker *et al.* 2010). The partnership's aims were to raise awareness of newborn survival and facilitate communication among organizations concerned with the issue (Lawn *et al.* 2004). Among other activities it conducted a high-level briefing at the 2002 United Nations General Assembly Special Session for Children (Tinker *et al.* 2010). It met annually—three times in low-income countries—and grew to include 40 organizations. It

lasted until 2005 when it was incorporated into a broader Partnership for Maternal, Newborn and Child Health (PMNCH).

SNL evolved into far more than a programme: it became a global guiding institution for the issue, acting as an agent of diffusion of the idea that the world had a responsibility to save the lives of newborn babies (Shiffman 2010). It collected evidence on the severity of the problem, supported research on solutions, linked organizations, pushed governments and advocated with international institutions, all with the aim of getting actors to address the issue. Effective leadership, a focused mission, strong country-level personnel and sufficient funding enabled it to perform these roles effectively. One external observer commented that SNL had (I26):

...an implementation agenda, an advocacy role, a technical role in advising around newborn interventions and indeed helping to drive the research agenda: it's a bit like a mini-UN agency.

Of equal importance for the emergence of global attention to newborn survival was the formation of an informal network of health professionals in the first half of the 2000s, which exercised global leadership on the issue alongside SNL (Shiffman 2010), particularly by developing an evidence-base on how to address the issue and by encouraging global health organizations to become involved. The network's core consisted of no more than 15 researchers and officials (I15; I18; I19; I22; I24; I27; I28; I31). These individuals were well-positioned to exercise agenda-setting power in global health: all had established reputations in the specialties of child and maternal survival, and most worked at prominent global health organizations, including UN agencies, bilateral donor agencies, private foundations and major research institutions, giving them authority and access to financial and technical resources. Several were affiliated with SNL or received funding from the Gates Foundation. These individuals had no formal mechanisms for co-ordination and did not explicitly refer to themselves as a network (Shiffman 2010). However, they functioned as one, meeting frequently at international gatherings and collaborating on projects. At least one of the core members stood behind nearly all major global initiatives for newborn survival across the decade.

### 2005–10: attention grows

The years 2005–10 marked a period of growth in global attention to the issue, although this expansion largely was confined to organizations involved in health with a concern for child or maternal survival, rather than a broader set of political actors. This growth was due in part to promotion by SNL, the Gates Foundation, USAID and several other organizations, as well as members of the informal network, who disseminated information on the severity and tractability of the problem and encouraged organizations to address newborn survival. It was due also to emerging recognition that neonatal mortality constituted an expanding share of child mortality, and that achievement of the child survival norm advanced by MDG 4 required lowering the number of newborn deaths.

A series on newborn survival in the prominent medical journal, *the Lancet*, helped to spark this growth. Aware of a 2003

series on child survival and recognizing the journal's growing authority in global health, in 2004 an SNL official and member of the informal network contacted the journal's editor with the idea for a series on newborns (I15). The editor responded quickly and positively. An authorship team worked closely with the editor to produce a set of articles, published in 2005 (Darmstadt *et al.* 2005; Knippenberg *et al.* 2005; Lawn *et al.* 2005; Martines *et al.* 2005). One of the series' steering team members indicated that the experience solidified many of the ties that now exist between these individuals, commenting that, 'there was a pioneering spirit... a missionary zeal to do some substantive work which would prove that something could be done' (I18).

The series received widespread attention, becoming a global point of reference on the causes, severity and tractability of the problem of neonatal mortality (Shiffman 2010). Its key messages made the case for addressing the issue that were repeated in numerous outlets in the years following: 4 million babies die in the first month of life; three-quarters of these babies can be saved with low-tech, low-cost interventions and MDG 4 cannot be achieved without lowering neonatal mortality. Forty thousand English copies were printed of the series, and it was translated into French, Spanish and Portuguese (Lawn *et al.* 2006). Approximately 150 newspapers worldwide covered the series, including the five largest circulation US newspapers (Lawn *et al.* 2006).

The three organizations that up to 2005 had invested the most in newborn survival—the Gates Foundation, Save the Children and USAID—augmented their involvement during this period. Between 1999 and 2004, the Gates Foundation gave only two grants with large newborn components, worth \$75.6 million in total—\$49.6 million of which was for the first phase of SNL (Bill and Melinda Gates Foundation 2014). Already committed to the child survival agenda and the health MDGs, and recognizing the growing share of child mortality occurring in the neonatal period (I28), the Foundation increased its grant-making between the years 2005 and 2007, providing 13 grants with large neonatal components worth \$220.5 million—including \$76.3 million for a second phase of SNL (Bill and Melinda Gates Foundation 2014). From 2008 on the Foundation's support of newborn survival grew even further. One reason was the influence of an informal network member and former SNL employee, who joined the organization in 2008 and became an internal champion for prioritizing this issue. In a 4-hour meeting with Bill Gates and others in January 2009, he provided the Foundation leadership with detailed information about the scope of the problem and the interventions that could address newborn conditions (I28). Bill Gates, who had requested this meeting, arrived well-informed, having read in advance many of the articles provided to him by this individual (I28). This internal advocacy had concrete results. In 2009, the Foundation approved a maternal, newborn and child health strategy that included a major emphasis on newborn health. And between 2008 and August 2014 its funding for newborn survival rose to its highest level to date: 96 grants with large neonatal components worth \$565.3 million (including \$40 million for a third phase of SNL) (Bill and Melinda Gates Foundation 2014).

With a new grant from the Foundation for the period 2005–11, SNL re-oriented its focus to the first week of life when most

newborn deaths occurred, and to the discovery of strategies for scaling-up existing interventions (EnCompass LLC 2012). One mechanism it used to achieve these goals was to foster networks of individuals and organizations working on newborn survival. It established global technical working groups (including on newborn infection, kangaroo mother care and indicators) to find ways to promote the adoption of interventions (Saving Newborn Lives 2011). It helped create a Latin American and Caribbean Newborn Health Alliance in 2005 to support governments in developing and executing newborn action plans (Saving Newborn Lives 2011); 14 ministers of health endorsed a strategy for the region in 2007 (Tinker *et al.* 2010). Following the *Lancet* series, it worked to convene 9 organizations and 60 authors, many from Africa, to produce a publication (Lawn and Kerber 2006) offering programmatic guidance to address neonatal mortality on the continent (I22). The publication was launched at the 2006 Pan African Congress (Tinker *et al.* 2010). In 2010, it established the Healthy Newborn Network, an online platform to disseminate knowledge about newborn health (<http://www.healthynewbornnetwork.org>).

Historically SNL's closest ally in addressing newborn health, USAID also augmented its support for the issue. A programme focused on maternal health begun in 1989, MotherCare, incorporated some newborn components. Marking the beginnings of a newborn survival strategy for the agency, in 2004 USAID hired a point person on the issue, who would come to play a major role in promoting newborn survival globally (I16; I19; I23). It also initiated a 5-year \$75 million maternal and newborn health programme (named ACCESS) working in 26 countries (United States Agency for International Development, n.d.-a). In 2008, a \$600 million successor programme was established, working on maternal, neonatal and child mortality in 50 countries (United States Agency for International Development n.d.-b). In 2010, the agency launched a public-private partnership (Helping Babies Breathe) in collaboration with SNL, the American Academy of Pediatrics and other partners to address birth asphyxia, which kills a million babies annually (American Academy of Pediatrics n.d.).

Recognizing the large burden of neonatal mortality, and encouraged by SNL and informal network members, other organizations also stepped up their involvement in newborn survival in 2005 and the years that followed. The Partnership for Maternal, Newborn and Child Health (2014a) formed in that year, replacing three alliances and growing to link more than 500 organizations dedicated to generating greater focus and attention to these issues. SNL and informal network members secured seats on its board and pushed to ensure the representation of newborn interests in the organization's work. UNICEF hired specialists in neonatal survival at its global headquarters, and country offices started programmes with a focus on neonates (I17; I20). The Countdown to 2015 (2008) also formed in that year, an alliance of organizations dedicated to ensuring government accountability for achieving the child and maternal survival goals through the use of country-specific data. Originally focused solely on child survival, it added newborn and maternal survival to its mandate in 2008. Also in 2005, WHO's flagship publication, the World Health Report, focused on maternal, newborn and child health, and in a

process connected to *the Lancet's* newborn series, devoted a chapter specifically to newborn babies (World Health Organization 2005). The publication explicitly advocated for 'the repositioning of MCH as maternal, newborn and child health (MNCH)' (World Health Organization 2005). The chapter included data from an initiative led by an SNL official and informal network member that for the first time systematically identified the major causes of neonatal mortality—infections, preterm birth complications and birth asphyxia—responsible for 77% of neonatal deaths (I15; I122).

### Effects of global initiatives: 2000–10

These global initiatives helped to spark national-level attention to newborn survival. After publication of *the Lancet* newborn survival series, at least 20 African governments approached the World Health Organization for technical advice on addressing the issue (Lawn *et al.* 2006). Encouraged by the African regional office of the World Health Organization, by 2008 at least 33 African governments had developed national plans that included neonatal health (de Bernis and Wolman 2009). With support from development partners, Nepal and Bangladesh adopted national newborn action plans in 2004 and 2009, respectively, and in both countries newborn survival emerged as a health priority (Smith and Neupane 2011; Shiffman and Sultana 2013). Studies of policy progress in nine countries (Bangladesh, Bolivia, Ethiopia, Malawi, Mali, Nepal, Pakistan, Tanzania and Uganda) found that over the period 2000 to 2010 all except Ethiopia had achieved more than half of a set of policy benchmarks concerning preparedness to scale-up newborn survival interventions (Khan *et al.* 2012; Mbonye *et al.* 2012; Moran *et al.* 2012; Pradhan *et al.* 2012; Rubayet *et al.* 2012; Zimba *et al.* 2012). These studies found that informal network members and development partners played crucial roles in advancing policy attention, alongside domestic advocacy, pre-existing government concern for child survival, pressure on states to achieve the child survival norm in MDG 4 and locally generated evidence.

Over this time period neonatal mortality decline accelerated: between 1990 and 2000 the global average ARR stood at 1.3% (Lawn *et al.* 2014); this rose to 2.1% between 2000 and 2010 (United Nations Inter-agency Group for Child Mortality Estimation 2011; Hill *et al.* 2012; Lawn *et al.* 2012). However, it is difficult to assess the extent to which network activity shaped this acceleration. Other factors almost certainly contributed, and one study whose authorship team included several members of the informal network found evidence that over the decade 2000–10 neonatal mortality reduction was more closely associated with contextual changes including socioeconomic factors and fertility change than increasing coverage of interventions (Lawn *et al.* 2012).

Despite the progress, a number of difficulties surrounding global strategy and national priority had emerged. Tension had appeared between the global newborn survival network and its two closest allies: the maternal and child survival communities (Shiffman 2010). Some maternal survival advocates worried that the focus on the baby would displace growing attention to the well-being of the mother (I14; I26; I30) and some child survival advocates feared the splintering of that movement into narrower concerns (I21). Also, observers expressed a concern

that a small number of organizations had taken up the mandate and dominated the field, and that other organizations—particularly UN agencies—that should be involved acted as if they were off the hook (EnCompass LLC 2012). In addition, national-level obstacles were hindering newborn survival promotion, including government changes, poorly functioning health systems and insurgencies (Khan *et al.* 2012; Mbonye *et al.* 2012; Pradhan *et al.* 2012; Rubayet *et al.* 2012; Zimba *et al.* 2012).

### 2010–15: a new wave of global and national attention to newborn survival

Through 2010 global attention to newborn survival, while expanding, was confined largely to organizations working in the health sector—predominantly Save the Children USA, USAID, the Gates Foundation, PMNCH and the WHO. Although these organizations collaborated on some initiatives such as *the Lancet* series, they had yet to develop a common global strategy. Two developments from 2010 on marked a departure from the past. One was the emergence of newborn survival—as part of growing priority for child and maternal survival—on to the agendas of several global and regional political institutions beyond the field of health. A second was explicit co-ordination and harmonization of strategy among these organizations, spurred by several initiatives organized by the informal network. These developments sparked a new wave of national-level attention to newborn survival.

From 2010 through 2012 maternal, newborn and child survival emerged for the first time as a major item on the agendas of four inter-state institutions: the G8, the African Union, the office of the United Nations Secretary-General and the Inter-Parliamentary Union. Heads of state, UN leaders and parliamentarians cited slow progress on MDGs 4 and 5 as reasons to act. In all four cases, one of the actors that had taken on board the newborn cause in the mid-2000s—The Partnership for Maternal, Newborn and Child Health (2011, 2012b)—played an advocacy role, lobbying officials to ensure the inclusion of these issues on organizational agendas (Lawn and Kerber 2006). At the G8 (2010) summit in Muskoka, Canada, the G8 countries and several other donors announced new commitments of \$7.3 billion for maternal, newborn and child health. One month later at an African Union (2010) meeting in Kampala, Uganda, African heads of state referenced the G8 Muskoka declaration in making their own formal declaration of support for maternal, newborn and child health, including a call for states to waive health facility user fees for pregnant women. Shortly thereafter, in September 2010 at the MDG Summit in New York City, United Nations Secretary-General Ban-Ki Moon launched the Global Strategy for Women's and Children's Health, with the aim of saving 16 million lives in the world's poorest 49 countries (Partnership for Maternal, Newborn and Child Health 2011). He announced \$40 billion worth of commitments towards this end, approximately a quarter of which included newborn survival as a component (Darmstadt *et al.* 2014). In follow-up, at the request of the Secretary-General and to ensure implementation of the Global Strategy, the WHO set up a Commission on Information and Accountability for Women's and Children's Health (World Health Organization 2011). The Commission included several



newborn indicators to monitor progress, including under-five mortality with the proportion of newborn deaths, and postnatal care for mothers and babies (Commission on Information and Accountability for Women's and Children's Health 2011), evidence that addressing neonatal mortality reduction was one aim of the strategy. In addition, in an April 2012 meeting of the Inter-Parliamentary Union in Kampala, Uganda, delegates from nearly 120 parliaments passed a resolution calling for parliaments to take all possible action to achieve MDGs 4 and 5 (Partnership for Maternal, Newborn and Child Health 2012b).

In June 2012, UNICEF director-general Anthony Lake announced the launch of 'A Promise Renewed', an initiative in support of the Global Strategy that further involved national political leaders in ending preventable child deaths. Lake's words revealed the influence of the MDG child survival norm in the decision to create this initiative: 'In 2000, the global community made a promise to children to reduce the under-five mortality rate by two-thirds between 1990 and 2015. With < 2 years left until the deadline, our promise and our credibility are in jeopardy' (UNICEF 2013). The initiative's primary initiators, along with UNICEF, were the governments of USA, Ethiopia and India, which in June 2012 convened a forum of heads of states on child survival. Newborn survival was on the minds of these initiators, as 1 month prior, informal network members had launched Born Too Soon—a global report on prematurity that reached more than a billion people via traditional and social media and that generated more than 30 pledges from governments, donors, UN agencies and other organizations to address the problem (I38) (March of Dimes *et al.* 2012; Blencowe *et al.* 2013).

The Global Strategy, A Promise Renewed and Born Too Soon helped spur developments leading to the creation of the world's first global action plan on newborn survival, the Every Newborn Action Plan (ENAP), named to mirror the title of the Global Strategy's movement (Every Woman, Every Child) (World Health Organization and UNICEF 2014). The ENAP called for all countries to reduce neonatal mortality to below 10 per 1000 live births and stillbirths to below 10 per 1000 births by 2035, coinciding with the target year for A Promise Renewed (World Health Organization and UNICEF 2014). Informal newborn survival network members, including those working in USAID, SNL, UNICEF, the WHO and the Gates Foundation, came up with the idea and guided its creation (I34; I36; I38). The idea first emerged as part of a desire by informal network members to capitalize on momentum from Born Too Soon, and from World Prematurity Day 6 months later, an event that catalyzed parents in more than 60 countries, including some from high-income settings (I34; I36; I38).

The first ever global conference on newborn survival—in Johannesburg, South Africa in April 2013—provided a venue to flesh out some of the initial details of the action plan (I34). A brainchild of informal network members, it was sponsored by USAID, UNICEF, the Gates Foundation, M-CHIP (USAID's maternal and child health programme) and Save the Children. The conference set in motion a series of 17 national consultations (including Afghanistan, India and Nigeria), three regional consultations (in Senegal, Nepal and South Africa) and an official WHO global consultation (that garnered more than 300

comments) to provide input into the ENAP and to identify bottlenecks in the scale-up of newborn survival interventions (Dickson *et al.* 2014; Riggs-Perla 2014). UNICEF, the World Health Organization and SNL convened these consultations, and the two UN agencies emerged as co-coordinators of the action plan development process. Informal network members in USAID and the Gates Foundation secured grants from their respective agencies to support the development of the action plan (I36). The Gates grant was for \$1.49 million.

This process marked a major expansion in UNICEF's engagement with newborn survival, prompted in part by research that had convinced UNICEF officials that investing in newborn survival was among the most cost-effective and equity enhancing moves the agency could make (Chopra *et al.* 2012) (I41). In 2012, UNICEF hired a public health physician to take leadership on newborn survival (I36). She reached out to maternal and newborn health advisors across the UNICEF system, convincing them to lead bottleneck analyses in their countries of responsibility, to secure national government attendance at the Johannesburg conference, and to participate in the action plan development process (I36; I37; I38). She joined with the long-standing head of the World Health Organization's Department of Maternal, Newborn, Child and Adolescent Health to co-chair the action plan management team.

WHO, UNICEF and informal network members succeeded in garnering the attention of UN member-states, and in May 2014 194 states endorsed the ENAP in a resolution at the 67th World Health Assembly (2014). Passage was not smooth as several African countries objected to included language on reproductive health issues, causing an African co-sponsor to set up last minute consultations to attempt to allay their concerns (I36; I42). Organizers officially launched the Plan one month later at a meeting of the Partnership for Maternal, Newborn and Child Health (2012a). Timed to coincide with the launch of the Action Plan, a second *Lancet* series on newborn survival (Bhutta *et al.* 2014; Darmstadt *et al.* 2014; Dickson *et al.* 2014; Lawn *et al.* 2014; Mason *et al.* 2014) also appeared in June 2014. Involving several of the informal network members who authored the first series, the series took stock of newborn survival developments since the 2005 series and publicized the action plan's key messages.

### Effects of global initiatives: 2010–15

These global initiatives—Born Too Soon, A Promise Renewed, the Johannesburg conference, the ENAP and the second *Lancet* series—sparked a new wave of global commitments to address neonatal mortality. At a summit in Toronto just prior to the World Health Assembly resolution on the Action Plan, the UN Secretary-General and the heads of the Gates Foundation, UNICEF, World Bank and WHO made public statements on the need to prioritize newborn survival. At the same summit Canadian Prime Minister Stephen Harper pledged an additional \$3.5 billion for maternal, newborn and child health (Partnership for Maternal, Newborn and Child Health 2014b). A June 2014 document details 40 commitments specifically for the Action Plan from philanthropic foundations, UN agencies, civil society institutions and other organizations, although a number represented prior pledges (World Health Organization

and A Promise Renewed 2014). Fourteen of these commitments came from the private sector—a relatively new entrant to these newborn survival initiatives—including a pledge by Laerdal, a Norwegian medical company, to establish a non-profit company that would support training and product development to save newborn and maternal lives (World Health Organization and A Promise Renewed 2014).

These initiatives also sparked a new burst of national commitments. In June 2013, in follow-up to A Promise Renewed, the government of Ethiopia brought together African political leaders in Addis Ababa, and secured their pledge to reduce under five child mortality to under 20 per 1000 live births by 2035 (UNICEF 2013). As of 2014, 178 governments had signed a pledge to implement A Promise Renewed, leading many governments, including Bangladesh, Zambia, India, the Democratic Republic of the Congo and Liberia, to enact new national targets for newborn, maternal and child survival (UNICEF 2013, 2014). With support from UNICEF, USAID and other development partners, and with the direct involvement of informal network members, in 2013–15 the governments of a number of countries with high neonatal mortality—including Indonesia, Ghana, Nigeria, India, Bangladesh, Afghanistan, Kenya and Malawi—either launched national newborn strategies or held national consultations geared towards producing or revising such strategies (I40) (Every Newborn 2014; Ministry of Health and Family Welfare Government of India 2014; Ministry of Health Ghana 2014; Ministry of Health Republic of Indonesia 2014; World Health Organization and UNICEF 2015). In several instances, newly emergent domestic newborn survival proponents were the prime movers. In India, for instance, a senior official in the Ministry of Health and Family Welfare who had attended the Johannesburg conference was the main champion of the plan (I34; I35).

Organizers of these initiatives understand these recent developments to represent inflection points for newborn survival, pointing to the expansion of the global network of organizations committed to newborn survival, the unity among these organizations, the quality of consultation and the wave of national commitments to address neonatal mortality (I34; I36; I37). Other observers and participants have raised questions surrounding country-level effects and network inclusiveness. For instance, a contributor from eastern Africa to an ENAP consultation commented:

Global initiatives can be chaotic at country level. There are so many launches. What do they mean for implementation?

A person working on newborn survival in Asia echoed a similar sentiment, calling the Action Plan in the country, ‘something imposed’, clarifying that ‘interests at the global level can move country people away from their usual work’ (I40). Noting that in at least two Asian countries multiple, disjointed processes were underway to develop national newborn plans, that person expressed a markedly different view from some of the global actors on harmonization at the global level (I40):

First there was A Promise Renewed, then a child survival action plan, then ENAP [every newborn action plan], now

there is talk of EMEN [every mother, every newborn]... I wish advocacy at the global level was more coordinated...

Another participant, while noting that organizers of the Action Plan consultations made extensive efforts to be inclusive, observed that these processes did not resolve long-standing differences between champions for newborn and maternal survival (I38). The same observer also raised concerns on prospects for network expansion (I38):

There was a big boom in the network: it went from a small core group to a fast moving big train. But are people going to stay on the train, or will it go back to being a small group?

Another concern observers raise is that despite a decade and a half of advocacy, global and national resources and priority remain incommensurate with the severity of the problem. Only 4% of child health investments go to newborn health (Darmstadt *et al.* 2014). The total value of donor non-research disbursements for newborn health, while growing over the past decade (Arregoces *et al.* 2015), was only \$613 million as of 2010 (Darmstadt *et al.* 2014), less than one-tenth the \$7.6 billion in development assistance donors provided in that year to address HIV/AIDS (Institute for Health Metrics and Evaluation 2014). Also, outside of South Asia there is little firm evidence that countries with high neonatal mortality levels, despite developing national plans, have allocated significant public financing to address the problem (de Bernis and Wolman 2009; Darmstadt *et al.* 2014).

## Discussion

### Factors behind historical developments

This study has aimed to explain three features of the trajectory of attention to newborn survival: delayed appearance, sudden emergence in the early 2000s and growth but insufficiency as of 2015. The conceptual framework, along with evidence on the history of priority for newborn survival, point to factors that have shaped these patterns (Table 2).

The primary reason global attention to newborn survival emerged later than that for other high-burden health conditions such as HIV/AIDS and maternal mortality is that prior to 1999, few individuals or organizations believed the issue was tractable in low-income settings (Framework Factor Number 9). Among those who knew of the problem, most viewed it as insoluble or a matter of fate. These perceptions shaped prospects surrounding the issue for the emergence of leadership (Factor 1), a governance structure (Factor 2), funding (Factor 6) and favourable norms (Factor 7—expectations that actors move to address the problem). Because virtually no one thought that much could be done, no global organizations lined up to address the issue or to offer funding. Moreover, in contrast to the broader category of children under five years, no widely shared expectation emerged prior to 1999 that national governments had an obligation to mobilize to save the lives of newborns. Although prior to 1999 there were some factors that later would support the emergence of priority, including WHO evidence on the severity of the problem (Factor 8), and

**Table 2** Factors behind historical developments in global attention to newborn survival

Framework categories	Framework factors	Major historical developments	Framework factors connected to historical developments
Network and actor features	1. Leadership 2. Governance 3. Composition 4. Framing strategies	Absence of attention prior to 1999	Few believe problem is <i>tractable</i> (Factor 9) therefore no emergence of <i>leadership</i> (1), <i>governance</i> (2), <i>funding</i> (6) or <i>favourable norms</i> (7). However, existing evidence in <i>severity</i> (8) and potential <i>allies</i> (5) in form of maternal and child survival initiatives portend well for emergence of attention.
Policy environment	5. Allies and opponents 6. Funding 7. Norms	Emergence of attention from 2000 on	Evidence appears on <i>tractability</i> (9). That combined with prior evidence on <i>severity</i> (8) facilitates emergence of <i>leadership</i> (1), <i>governing structures</i> (2), <i>funding</i> (6) and <i>favourable norms</i> (7).
Issue characteristics	8. Severity 9. Tractability 10. Affected groups	Growth in but insufficiency of attention from 2000 to 2015	Same factors that shape emergence of attention (severity, tractability, leadership, governing structures, funding, favourable norms) also shape growth in attention. Attention hampered by fact that network <i>composition</i> (3) has been largely technical in nature, and <i>framing strategies</i> (4) have not provided strong sense of urgency for issue. Since 2013 composition has broadened, however.

For full presentation of framework see Shiffman *et al.* (2016).

potential allies in the forms of global child and maternal survival initiatives (Factor 5), in the absence of a perception that the problem was tractable, these elements were insufficient to give rise to global attention.

A confluence of factors facilitated the first appearance of global attention to the issue from 1999. One was the emergence of solid evidence on tractability (Factor 9). Combined with existing data on severity (Factor 8), this evidence facilitated the rise of leadership and a governance structure to address the issue (Factors 1 and 2), and of funding and favourable norms (Factors 6 and 7). Specifically, when Abhay Bang presented evidence of the efficacy of home-based care at the 1999 Johns Hopkins seminar, he began a process that shifted perceptions towards the view that the problem could be surmounted. Save the Children USA and other organizations subsequently became interested in taking on the issue, and formed the Healthy Newborn Partnership to link institutions. Also, approached by Save the Children USA, and convinced by evidence on severity and tractability, the Gates Foundation became interested in providing financial support. This initial set of governing institutions facilitated the emergence of an informal network of proponents, who, along with these organizations, pushed effectively to alter global norms. Specifically, they leveraged the child survival MDG to argue that this goal could not be achieved without attention to newborns, and that national governments had an obligation to intervene to save the lives of their very youngest citizens.

Between 2000 and 2015, these proponents produced a substantial body of research on interventions, helped to secure the involvement of other global organizations in newborn survival—the coalition expanded to include among others USAID, the WHO, UNICEF and PMNCH—and produced a World Health Assembly-endorsed global plan to harmonize strategy. The same factors that explain the appearance of attention also stand behind these outcomes: the quality of their leadership, their ability to generate evidence on severity and tractability, and their effectiveness in tying newborn survival to

the child survival norm promoted by MDG 4. The composition of the network (Factor 3) also contributed. Almost all of the informal network's core members were researchers with established reputations in the fields of maternal and child health, working in prominent institutions. Much like malariaologists, they possessed the expertise to generate evidence—or guide others to do so, the organizational placements to take advantage of connections in the world of global health, and the legitimacy to convince others to act.

However, the network's composition also had disadvantages. They were researchers and programme officers, not politicians, civil society activists or the leaders of their organizations. Although they did engage in some political mobilization, they were more accustomed to marshalling evidence than rallying bureaucracies and societies. This orientation shaped their framing strategies: in contrast to maternal survival proponents who successfully positioned the issue as a pressing women's rights and social justice concern (Smith and Rodríguez 2016), to date newborn survival proponents have not been able to provide rationales for addressing the issue that large numbers of national political leaders find compelling and urgent. The largely technical rather than political composition of core network members, as well as their framing strategies, partially if not fully explain why global and national financial commitments for newborn survival remain inadequate.

This being said, newborn survival is newer than other global health initiatives, including those for HIV/AIDS, polio, child survival and maternal survival, and has had less time to evolve and build coalitions. Moreover, some evolution is occurring: since 2010 inter-state organizations outside the health sector have begun to pay attention to the issue, and more and more national governments are adopting official neonatal mortality reduction targets. It could be that the initiative is entering a new phase, moving from a predominantly technical effort to one also with a political orientation. The challenge will be to ensure that meaningful national commitments move beyond

the confines of health ministries, and are embraced by ministers of finance, sub-national governments, parliamentary leaders and heads of state—those with the power to back up policy pledges with public financing and credible commitments to take interventions to scale—and by civil society institutions with the power to pressure politicians to act. One factor that might facilitate that process would be the expansion of the set of actors who constitute the core of the network—to include not just researchers and programme officers whose connections lie predominantly with UN agencies, health ministries and universities, but also politicians and civil society actors who can mobilize states and social institutions.

A central question concerning the history of attention to newborn survival is to the extent to which the network itself was responsible for the emergence and growth of priority. One way to consider this question is to pose a counter-factual. In the absence of a global newborn survival network, would policy priority have emerged anyway, and neonatal mortality declined at the same pace? One could speculate that these outcomes were an inevitable result of the fact that for at least two decades post-neonatal mortality has been declining at a more rapid pace than neonatal mortality; therefore, child survival proponents naturally would turn their attention to the neonatal period, and their initiatives combined with sociocultural and economic changes would inevitably lead to lower numbers of newborn deaths. Alternatively, one could speculate that the formation of this network was a contingent phenomenon—that there was nothing inevitable about its crystallization—and that its work resulted in a degree of policy change and pace of mortality decline that would not have occurred otherwise. There is no way to know with certainty either way, as we cannot rerun history and compare outcomes in worlds with and without a newborn survival network. What we can do is make a cautious inference based on the evidence considered above that this network accelerated change but not to the extent that its members hoped for when they began their work—or at least not yet.

Although the network sought to raise global political attention and generate resources, its larger goal was to facilitate neonatal mortality decline. It is important to note that while political attention may facilitate mortality change, it is only one of many determinants, and even political systems that adequately fund newborn survival may not achieve the declines their leaders seek. Neonatal mortality reduction depends on a complex set of social and health systems changes, including intervention scale-up, shifts in health-seeking behaviours, improved access to care and strengthened health facilities.

### Implications for the study of global health networks

This study of a global newborn survival network has two broader implications for research on global health networks. First, it provides evidence that the emergence of attention to neglected global health issues is not a function of any single force but rather of a confluence of factors. Global attention to newborn survival emerged not because of any single individual, partnership, organization, data source on severity, study on intervention efficacy, grant or global agreement. Rather, there was a convergence of forces that altered perceptions of the problem's severity, tractability and import—including network advocacy, global agreements and evidence from research. To use the language of

the framework, there were interactions among factors in each of the three categories—network and actor features, policy environment and issue characteristics—and in their conjunction attention emerged. The implication is that researchers studying the global emergence of priority for health issues may find it more productive to inquire into how forces converge rather than to try to pinpoint singular causal factors as determinative.

Second, the study suggests the need for global health networks to evolve in a political direction if they wish to expand influence. Many global health initiatives are sparked by health professionals and scientists, individuals who have spent their careers worrying about health burdens posed by particular conditions. Their first inclination is to develop evidence that demonstrates the severity of a problem, and the interventions needed to address it. Such a focus may be wise in the early phase of an initiative: in the absence of evidence on severity and tractability, initiatives may never take off. However, while these may be necessary conditions for political attention, they are rarely sufficient. To get ministers of finance and other politically influential officials to allocate the resources needed to have impact on population health, scientists must convince them of the urgency of the issue, parliamentarians and civil society activists must push them to take action, and perhaps most importantly, all of these proponents must urge them to become network members themselves.

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## Ethical approval

The study protocol was cleared through the Institutional Review Boards of American University and Syracuse University, which granted the study exempt status, as it focused on public policy and was deemed to pose minimal risk to informants.

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