Health Promotion International, 2017;32:312–321
doi: 10.1093/heapro/dav120
Advance Access Publication Date: 27 January 2016
Article

Intersectoral collaboration to implement school-based health programmes: Australian perspectives

Rebecca Tooher[1,*], Joanne Collins[2], Annette Braunack-Mayer[1], Teresa Burgess[1], S. Rachel Skinner[3], Maree O'Keefe[4], Maureen Watson[5], and Helen S. Marshall[2]

[1]School of Public Health, University of Adelaide, Adelaide, SA, Australia, [2]Vaccinology and Immunology Trials Unit, Womens and Children's Hospital, Adelaide, SA, Australia, [3]School of Public Health, University of Sydney, Sydney, NSW, Australia, [4]School of Medicine, University of Adelaide, Adelaide, SA, Australia, and [5]Department of Health, SA Health, Adelaide, SA, Australia

*Corresponding author. E-mail: rebecca.tooher@adelaide.edu.au

Summary

Understanding the processes and the factors influencing intersectoral collaboration is vital for the ongoing success of programmes that rely on effective partnerships between sectors, such as the school-based immunization programme, the school dental health programme and health promotion interventions delivered in school settings. We studied school-based health programmes delivered by partnerships between health, education and the local government sectors. We used purposive sampling to identify 19 people working in school-based health programmes and interviewed them about the barriers and enablers of successful collaboration. Data were analysed thematically. We found that collaboration between complex systems was a skilled endeavour which relied on a strong foundation of communication and interpersonal professional relationships. Understanding the core business, operational context and intersectoral point-of-view of collaborative partners was important both for establishing good intersectoral programmes and sustaining them as contexts and personnel changed. Aligning divergent sectoral agendas early in the collaborative process was essential for ensuring that all partners could meet their core business needs while also delivering the programme outcomes.

Key words: collaboration, health, education, interviews

BACKGROUND

Intersectoral collaboration between the health and education sectors in Australia has a long history. School-based immunization and dental services have been provided in some form since the 1930s, and more formal school-based programmes were introduced in the 1970s (Biggs, 2008; Ward *et al.*, 2013). In the 1990s, the focus of school-based health services widened and shifted with the development of a National Framework for Health Promoting Schools (QUT and AHPSA, 2000) leading to an attempt to embed health and well-being more centrally into school functioning. This policy shift incorporated a focus on schools as healthy settings for learning, and education programmes that focused on mental health, nutrition, physical activity, drug and alcohol (including smoking), safety, sex education and prevention of infectious diseases such as HIV. Increasingly schools are being seen as the ideal setting for delivering health education for almost

any topic from surf safety to piercings to cycling skills education (Gugglberger and Dur, 2010).

For the health sector, the impetus to work together to deliver health outcomes in settings other than clinical environments arises from the recognition that the key drivers of health are socially determined. If it acts alone, the health sector will therefore be limited in its ability to improve health outcomes (Rowling and Jeffreys, 2006). As a consequence, the World Health Organization calls for intersectoral collaboration 'to achieve health outcomes or intermediate health outcomes in a way which is more effective, efficient or sustainable than might be achieved by the health sector acting alone' (WHO, 1997). Furthermore, it has been recognized for some time that collaboration with partners outside of health is necessary for translating evidence into practice, particularly for complex population-based interventions (Kerner, 2008). Inherent in this is the need to understand the complex systems in which health interventions are delivered (Brownson *et al.*, 2014) and the varying understandings of evidence and its place in guiding practice (Ammerman *et al.*, 2014).

Intersectoral collaboration theory suggests that collaboration between sectors or agencies occurs on a continuum. Howarth and Morrison identify five levels of collaboration: communication, cooperation, coordination, coalition, and integration (Howarth and Morrison, 2007). Differing degrees of integration are also recognized, from functionally independent through to fully integrated (Axelsson and Bihari Axelsson, 2006; Shigayeva *et al.*, 2010). As services become more integrated interactions increase in intensity, governance arrangements become increasingly formalized and there is increased sharing of responsibilities and pooling of resources (Horwath and Morrison, 2007). Typically, increasing integration is expected to lead to more successful collaborations, where success is measured by better outcomes, increased efficiency and service-user preference or satisfaction (Shigayeva *et al.*, 2010). However, it is acknowledged that fully integrated services are more complex to deliver, particularly if integration is retro-fitted to existing services (Keshavarz *et al.*, 2010).

In this study, we investigated the level of integration and collaboration in various school-based health programmes as well as the barriers and enablers to successful intersectoral collaboration between health and education.

METHODS

Recruitment and study procedure

This study is one component of a broader investigation of intersectoral collaboration for the delivery of health programmes in school settings using the school-based immunization programme as a case study (Burgess *et al.*, 2016). The findings in relation to school-based immunization have been reported previously (Marshall *et al.*, 2013; Marshall *et al.* 2014; Braunack-Mayer *et al.* 2015). The study reported here focuses on the broader implications of intersectoral collaboration in a range of school-based health programmes.

We invited stakeholders from the South Australian health, education and local government sectors to participate. Local government stakeholders were included because, in South Australia, local government agencies (i.e. local councils) are contracted to provide immunization services on behalf of the health department and because the *South Australian Public Health Act 2011 (Sec 50–52)* identifies local government as the sector best placed to lead and coordinate public health planning for their local area (SA Health, 2013).

Purposive sampling was used to identify stakeholders involved in the delivery of health programmes in school settings (including both direct service delivery and the policy and planning of school-based health programmes). With the help of our project advisory team, we identified potential participants and invited them to participate in this study via a personalized letter. Snowballing techniques were used to identify additional participants, and these people were also invited to participate via a personalized letter. We continued to recruit participants until we reached data saturation. Data saturation occurred at the point at which no more new information was observed in the data (Liamputtong, 2013).

Semistructured interviews were conducted by one researcher between November 2010 and June 2011. Participants were asked to describe the role they played within their organization and to discuss any health programmes with which they were familiar that were delivered in schools. They were also asked to describe their experience of intersectoral collaboration, how it worked in practice and what they perceived to be the advantages and disadvantages of this type of collaboration.

Interviews were digitally recorded and transcribed verbatim. We used NVivo8 software to manage the data analysis (QSRInternational, 2008).

Study participants

We conducted 19 interviews with stakeholders who were involved in working together to deliver health programmes in schools across the South Australian health, education and local government sectors. Participants included eight from the education sector (five responsible for policy and planning and three for programme delivery), six from the health sector (responsible for policy and planning) and five from the local government sector (responsible for policy, planning and delivery). Interviews lasted between 30 and 100 min.

Data analysis

We analysed the data thematically following the process suggested by Braun and Clarke (2006). The initial coding was undertaken by two researchers. The first stage of the analysis was undertaken by one researcher who read and reread the interview transcripts. This researcher coded each transcript line-by-line with initial codes based on the participants' meaning and content. As the analysis proceeded these codes were organized into meaningful groups, for example role within health/education, type of programme being implemented and implementation challenges, and codes were combined or new codes added as each interview was coded. We used coding memos and notes to ensure consistency and transparency of the coding process. We identified initial themes and subthemes through discussion between the two researchers and the rest of the study team. The second researcher independently repeated the coding to check for consistency and coding differences at this stage were resolved through discussion. In the second stage, the whole study team repeatedly discussed the coding schema and, on the basis of our interpretation of the data and inferences about its meaning, we created a final set of themes. To facilitate this discussion, we used tables and matrices to help identify links between the data and to illustrate concepts for discussion.

Our findings attempt to account for the participants' descriptions of intersectoral collaboration in light of the literature regarding the known barriers and enablers to working in this way, paying particular attention to the place of interpersonal and other communication, the development and maintenance of professional relationships and the degree to which institutional procedures and structures support or hinder effective collaborative efforts. However, we were also alert to the emergence of new or unexpected accounts of the process of working together to ensure that our findings captured ideas that may not have been anticipated from the theoretical or existing research literature.

The study was approved by our institutional ethics board. All participants gave informed written consent before participation.

FINDINGS

School-based health programmes

The stakeholders interviewed for this study described a variety of different health programmes delivered in school settings including school-based immunization, healthy eating and physical activity programmes, medical and other support for students with disabilities, mental health and well-being and bullying programmes and oral health and nutrition programmes. In general, stakeholders reported that these intersectoral collaborations were delivering successful health outcomes in school settings. There were varying degrees of intersectoral collaboration along the full spectrum from stand-alone, 'drive-in-drive-out' programmes to programmes that were highly integrated and in which health or education specialists were employed directly by one or other sector to coordinate, deliver and evaluate health programmes in an educational setting.

Some school-based health programmes required more intensive and more integrated collaborative effort than others. The degree of integration seemed to relate to the extent to which the health programme impacted on the core business of schools (i.e. learning and teaching activities and in particular teaching of numeracy and literacy). Programmes which used schools as a site for the delivery of a clinical service did not need the same level of collaboration as those which required schools to change their everyday classroom practices around learning and teaching to accommodate health-related education. Similarly, programmes which sought to change the behaviour of students and/or the ongoing organization of schools (including timetabling, infrastructure, policies and practices) required more intensive integration and collaboration than those which included only an educational or awareness raising component.

Facilitators of effective collaboration

Stakeholders across the sectors were in agreement about the importance of communication and the development of professional relationships and networks for sustaining successful collaborations. As one participant described it, these are the 'working capital' of intersectoral collaboration.

Communication

An underlying theme of many of the issues raised about collaboration was the importance of clear and open communication. This operated both at a formal organizational level (aligned to policies and procedures) and at an interpersonal level. Communication from within organizations about policy decisions and directions was seen to be an important contributor to effective collaboration:

> . . . I think the way that local government works, because given there's 68 councils and LGA [Local Government Association] represents all of those councils, you're going to get some of them that are just not interested in the decision that their neighbour makes and if there's a decision that has to be made, yes we're going to accept this, then they're doing this—they're taking it on grudgingly

> and therefore they're not putting their efforts into it . . . so I think that impacts on our cooperation.
> (Local government stakeholder)

Similarly, clear formal communication of policies and procedures between sectors was also thought to reduce uncertainty and improve programme delivery

> If we have open communication with these stakeholders, it's very simple. It's quite smooth. We develop guidelines and policies and if they know the rules, that's all they want.
> (Health stakeholder)

Formal opportunities to meet to discuss issues in intersectoral collaborative projects were also seen as important by stakeholder across the sectors. However, sometimes direct one-to-one communication between those collaborating was required to facilitate good outcomes for the programme.

> We actually got into the schools and were able to hear what it was that the teachers were talking about . . . just little things that would happen in the day that perhaps didn't require a [health service] intervention, but it builds up a picture of what's going on in the school.
> (Education stakeholder)

Personal relationships

Personal relationships and networks were regarded as vital:

> . . . without having those linkages with all of the different sectors that we have linkages with, then the quality of our program potentially could fall . . . without those strong relationships and our ability to get information out through those networks, I'd be very concerned about the quality of the program.
> (Health stakeholder)

However, many stakeholders raised concerns about the sustainability of these networks, as they were often dependent on the personal relationships of incumbents who might not always remain in their current positions:

> I think one of the things we need to do is end up with the relationships and the partnerships that are going to be sustainable so that when the health people leave and when we leave is there going to be a seamless continuation of this and I think it will be because of the way things have gone for so long.
> (Education stakeholder)

> . . . I've worked with schools for quite a number of years and . . . it's great to have champions at the school, but teachers are quite transient and they move on and move around, so if you've only got one person there that's keeping the whole thing going and if they move, then what happens to the sustainability of the program?
> (Health stakeholder)

Challenges in intersectoral collaboration

Identifying champions

Finding individuals willing to sponsor and promote particular programmes within schools was identified as a necessary condition for successful delivery of health programmes in schools. However, sustainability of programmes was seen to be reliant on more than champions, needing both support of local leaders and, at a broader level, policies that worked to ensure that the practices became embedded rather than vulnerable to changes in personnel

> . . . if there's someone in the school that has a particular interest, so whether it's about drugs strategies, whether it's about physical activity, whether it's about healthy eating. So it depends on whether something sparks the interest of a teacher at school that they will follow it up.
> (Health stakeholder)

> If you've got a principal on board who understands it and gets it, then that filters through his staff. I mean you can—and we work with champions—engage the champions in the school. But if you haven't got your leaders on board, when that champion leaves then the message goes with them. So our work is around engaging leadership and teachers . . .
> (Education stakeholder)

Linking with the curriculum

Linking health-related curriculum with education curriculum was another key to successful collaboration identified by stakeholders in each sector:

> . . . a program for primary schools that looks at promoting fruit, veg and water consumption. It's a program designed to link with the curriculum and be implemented by classroom teachers.
> (Health stakeholder)

> . . . I think someone rang up and said, we're having a bit of a careers day, can you come and talk to us about what you do and then they realised that it would be so beneficial because we talk a lot about the legislation and things that would help them with the course as well.
> (Local government stakeholder)

Such linking reduced the burden on classroom teachers to find space for the health-related curriculum in their existing teaching: ' . . . we have a very short period of time to meet learning outcomes and so anything that is external coming in really has to link with the learning and with the learning outcomes that as a teacher you're frantically trying to teach' (Education stakeholder). When designed

carefully, programmes can be useful in multiple subject areas increasing their utility and likelihood of being taken up.

Timing of collaboration

Many of the stakeholders interviewed had a long history in the development of intersectoral collaborative projects. These stakeholders identified early collaboration as one of the keys to successful collaboration as this increased shared ownership:

> I think if you've got all the players on board in the beginning, that's certainly the best way to go.
> (Health stakeholder)

> So that's been the fundamental key . . . the missing piece of the puzzle is in the design stage and in the idea . . . Right back there is when you engage with schools and with [the Education Department] . . .
> (Education stakeholder)

Early consultation and a co-design approach to programme development increased the chances that the idea or programme proposed would match the intersectoral context and, for education stakeholders in particular, align with the curriculum drivers current in the education sector.

Negotiating roles and boundaries

The need to be clear about roles and responsibilities of each partner in a school-based health programme created challenges to successful intersectoral collaboration, particularly if there was some permeability of the boundaries between health and education:

> . . . they're very clear in the education system that we are teachers and we're not mental health professionals. So it's always trying to harness people who are very eager to go that one step further.
> (Education stakeholder)

> When I came into the program . . . I found a lot of the workers . . . were doing school stuff, like cooking and education . . . because they didn't have clear boundaries—so . . . then made it very clear that no we don't do curriculum—we step right back—it's not our skill set.
> (Health stakeholder)

Aligning divergent sectoral agendas

Stakeholders were skilled at aligning agendas so that goals of participating agencies could be met simultaneously, providing a 'win-win' scenario.

> . . . if they looked at what's available they could see a lot of what they're doing does fit into a universal whole school approach . . . that's what we're saying: well look at what you're doing already, see how that fits in, then you can do these other things to support that.
> (Education stakeholder)

Considering all partners' agendas in the development of policies and programme was thought to increase likely uptake and acceptance of the policy across the collaborating partners.

> . . . the people that are involved in that intersectoral collaboration about the policy feel they have ownership of it and therefore will take the policy once it's been ratified and accepted and just . . . communicate it in their own area.
> (Health stakeholder)

However, conflicting sectoral agendas were identified as a potential stumbling block to successful collaboration. In particular, the political context and the decision of policymakers at the highest level (the responsible Minister) were seen as particularly troublesome, interfering with the effective working relationships at a professional interpersonal level which normally enable agendas to be aligned: 'What stands in the way I think sometimes is conflicting agendas. I think that politics and politicians sometimes get in the way' (Health stakeholder).

Working with different conceptualizations of 'evidence'

For health professionals, the issue of ensuring evidence-based practice was an important consideration, with health professionals sharing a broad understanding of what constitutes evidence and its translation to practice. However, understandings and assumptions about what counts as evidence had the potential to disrupt effective collaborations, as education stakeholders (including teachers and parents) might not attribute the same level of importance to evidence-based practice as it did not address the core business of schools:

> You talk about evidence-based programs but they [parents and teachers] don't necessarily want to hear about evidence-based programs because it doesn't necessarily resonate . . .
> (Education stakeholder)

Furthermore, differences in what counts as evidence could confuse health stakeholders about why education stakeholders would adopt certain health programmes over others that seemed (to the health stakeholders) *self-evidently* better:

> There's always seemed to me to be quite a plethora of programs being chucked at schools . . . how do schools know which ones are being supported by the department, are ones that maybe have been more rigorous in their development and based on evidence?
> (Health stakeholder)

Developing shared understandings of intersectoral point-of-view

We found that stakeholders from the health and education sectors held sometimes divergent views when describing their own sector and the other sector—we have called this their *intersectoral point-of-view*.

How the sectors view themselves

Stakeholders from both sectors saw themselves as functioning in a resource-constrained environment. Stakeholders from the health sector described themselves and their sector as operating with financial constraints which impacted directly on willingness to collaborate with other sectors, and within economic climates that worked to limit the good will needed to sustain collaborations. Rather than focusing on funding and costs, stakeholders from the education sector emphasized lack of time. They described themselves as very busy—as 'saturated vessels'—in many ways overwhelmed by the competing demands to meet the goals of a new national education curriculum and at the same time respond to multiple requests to participate in health and social programmes

> . . . this is a conversation I've had with [the health sector] . . . children learn in all sorts of settings—they don't just learn in schools—and we are saturated—we are absolutely saturated—because everyone goes, I've got a good idea—let's do that in schools.
> (Education stakeholder)

In a similar way, stakeholders in both sectors recognized they had a duty of care to students, but they understood their duty of care differently. Health sector stakeholders, particularly those delivering a clinical service in a school setting, described how their practices were guided by a clinical duty of care which had a specific meaning associated with their sense of professional identity. For example, in the school-based immunization programme, nurses delivering immunizations were very clear about the clinical need to observe students for any signs of adverse reactions after immunization, and workers providing medical support to students with significant medical conditions were clear about the series of practices required to assist the student: ' . . . we have a shared duty of care. The main duty of care is the school . . . but what we do is come and support the health needs' (Health stakeholder).

For education stakeholders duty of care was somewhat broader than the clinical notion of duty of care and extended to the general well-being of children and young people as it relates specifically to their education:

> . . . schools are massively busy places and whilst schools value the health message and understand it and they get it, their context is learning and their core business is learner outcomes and . . . their core business is literacy and numeracy primarily.
> (Education stakeholder)

Furthermore, the education stakeholders' duty of care extended to the parents/carers of the children and young people in schools and other educational settings:

> We've got the website, the mental health website and a child and student wellbeing website that has some material up on there the other part of that information has been able to provide information for parents and carers and for some people they themselves haven't ever sought help and may well have mental health issues.
> (Education stakeholder)

How the sectors view each other

From the perspective of health stakeholders, schools were the obvious place to deliver health programmes. First, schools presented a captive audience for the delivery of health programmes; they were almost universally identified as the only or best place for delivery of many programmes, especially those seeking universal coverage (such as mass immunization programmes). Health stakeholders also identified that schools were more convenient for parents than the alternative of taking a student to a doctor's surgery, and therefore much more likely to achieve high coverage. Second, in part because of the captive population, health stakeholders considered that schools provided significant budget savings compared with other methods of service delivery. Third, for programmes with an educational component, health stakeholders considered that students might be more receptive to health educational messages delivered in an educational setting, because schools were already in the business of education:

> I think it's an absolute opportune time to deliver information to these students. They have the capacity to learn. I think as long as the information is presented well and presented in a way that they can understand it. I think this is the age group that we need to really concentrate on. They often will be quite influential on the decisions that the parents make about their health care.
> (Health stakeholder)

In contrast, education stakeholders tended to talk about the health sector in terms that suggested a form of health 'imperialism' (Camargo, 2013) in which multiple health programmes and agencies competed to access the captive student audience, taking for granted that schools would be open to these approaches:

> Health tends to design programs and put money into programs and projects and design them and then bring them

over and say, we've got a good idea—can you implement it in schools?
(Education stakeholder)

. . . quite simply, you could have a school contacted five times in one week by five different agencies, all of whom are trying to help achieve the same outcome.
(Education stakeholder)

The health sector was sometimes perceived to be insensitive in its dealings with the education sector because health service providers did not always appreciate how health programmes and health education could intrude into the core business of schools. Education sector staff perceived this as a barrier to effective collaboration:

I think colleagues in health see this as a barrier to working with [the education department], because they see it as, well you don't have to have an education background to understand schools—we all went to school—and I say, well I've been to the hospital too but I don't understand how to work in hospitals.
(Education stakeholder)

. . . knowing that we're working with service providers who are going into schools, we adopt an approach from the outset that required a clear understanding that with the emerging priorities in schools, that the priority around healthy eating and physical activity might be something which isn't automatic. That as much as schools can appreciate there's an important need around it, they're just already swamped with priorities.
(Education stakeholder)

These sensitivities were recognized by some health stakeholders as well:

. . . it's very much your attitude. You have to work with the school and understand their situation. You can't go in being all bombastic . . . you have to understand, from their point of view, that it [the health program] is an extra thing.
(Health stakeholder)

DISCUSSION

Delivering health outcomes in school settings is challenging. It requires that at least two social complex adaptive systems—the education system (Keshavarz *et al.*, 2010) and the health system (Plsek and Greenhalgh, 2001)—work together to jointly achieve better health for the young people served by both systems. Complex adaptive systems consist of multiple nested subsystems that are driven by uncertainty, constantly adapting or changing in response to changes in context (Keshavarz *et al.*, 2010). Social complex adaptive systems are unpredictable because change is seen to emerge from the interactions between agents (Plsek and Greenhalgh, 2001), but are nevertheless amenable to guided change that takes advantage of the creativity and flexibility of the system (Best *et al.*, 2012). Thus, collaboration between these two sectors is a highly skilled endeavour.

The stakeholders who participated in this study were identified by our advisory group and by snowballing precisely because they were known to be highly skilled intersectoral collaborators. It follows that the factors they identified as important for successful intersectoral collaboration might extend beyond those identified as important from the theory and literature. We have summarized these findings in Figure 1. Although they could describe a range of barriers and facilitators to collaboration these seemed to be, in some ways, less important for the success of collaborative efforts than the extent to which the programme in question was aligned with the core business of the agencies involved. The literature suggests that successful intersectoral collaboration requires a shared mandate and goals for the programme (Horwath and Morrison, 2007). However, we found, at least for the programmes the stakeholders described, that shared goals were not essential to successful collaboration. More important was that programme goals needed to align with the core business or mission of the agency and sector and that all involved in the collaboration understood these drivers.

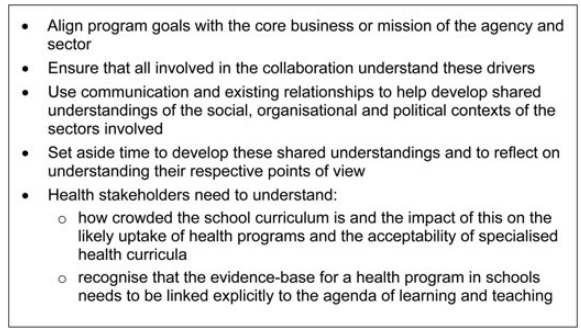

Fig. 1: Practical suggestions to facilitate intersectoral collaboration between the health and education sectors.

Thus successful collaborations hinged on the extent of shared understanding of the social, organizational and political contexts of the sectors involved and how much this was mobilized both to avoid potential problems (by building in safeguards) and to resolve difficulties as the programme developed. Factors such as communication and relationships, known to be related to success of collaboration (Johnson *et al.*, 2003; Atkinson *et al.*, 2005; King and Meyer, 2006; Alexander *et al.*, 2010; Langley *et al.*, 2010; Varda *et al.*, 2011; Chircop *et al.*, 2014), were important for development of this shared understanding.

The need to understand contexts has been previously described (Deschesnes *et al.*, 2003; Johnson, *et al.*, 2003; Axelsson and Bihari Axelsson, 2006; Bruce *et al.*, 2012; Weist *et al.*, 2012; Busch *et al.*, 2013). Our focus on understanding the intersectoral point of view suggests that the interpersonal skills of empathy and insight are important characteristics for those wishing to collaborate in this way (Deschesnes *et al.*, 2003; Harris *et al.*, 2012). Moreover, collaborative teams might need to set aside time to develop these shared understandings and to reflect on understanding their respective points of view. This has been identified as important in interdisciplinary teams (Weist *et al.*, 2012), but it has not necessarily been highlighted for intersectoral collaborations which can have a broader policy-related rather than practice-based focus.

A key finding of our study, consistent with many others (Wyn, 2007; Gugglberger and Dur, 2010; Weist *et al.*, 2012; Busch *et al.*, 2013), is that the school context, in particular as it relates to curriculum, is already very crowded. To work effectively with schools, health stakeholders need to understand the impact of this on both the likely uptake of health programmes and the acceptability of specialized health curricula. In addition, differing conceptualizations of evidence must be acknowledged and accommodated, in particular the value education stakeholders place on practice-based evidence (Rowling and Jeffreys, 2006). Our study found that, for education stakeholders to understand and accept the evidence-base for a health programme, it needs to be linked explicitly to the agenda of learning and teaching, particularly impacts on literacy and numeracy. If this is not feasible, it is likely that health curriculum will be seen as taking time away from the core business of schools. Evaluations of health programmes in schools could consider widening the definition of outcomes to capture factors that matter to education stakeholders to assist in providing justification for fitting health into the education curriculum. Health stakeholders who stay abreast of curriculum developments and concerns, such as, in Australia, the development of the national curriculum, should be well positioned to take advantage of opportunities to get health on the agenda as they arise.

Limitations

Our study of how stakeholders in health and education sectors work together identified key themes consistent with previous research. Our key findings, regarding intersectoral point of view and the alignment of divergent sectoral agendas, are also likely to have wide applicability. However, there might be factors specific to the local context in South Australia that mean our findings cannot be directly applied without a consideration of local factors in other jurisdictions. In particular, the organization of health care in other jurisdictions and countries might limit the ability of the sectors to work together, in particular where universal health care is not offered. This appears to be one of the factors that has limited the development of school-based immunization in the USA (Kessels *et al.*, 2012). Furthermore, given that our broader study used school-based immunization as a case study rather than other more integrated programmes, it might be that some of the findings presented here are more applicable to these types of school-based programmes.

CONCLUSION

In this study, successful intersectoral collaboration was built on a foundation of strong interpersonal professional relationships and effective communication. This provided the necessary underpinnings of a well-developed understanding of intersectoral point-of-view and allowed divergent sectoral agendas to be aligned to ensure that all parties to the collaboration were able to meet their own organizational goals.

ACKNOWLEDGEMENTS

We acknowledge the contribution of Heather Ashmeade and thank all those who gave up their time to be interviewed for this project.

FUNDING

This work was supported by the Australian Research Council (grant number LP1002000007).

REFERENCES

Alexander J., Christianson J., Hearld L., Hurley R., Scanlon D. (2010) Challenges of capacity building in multisector community health alliances. *Health Education & Behavior*, **37**, 645–664.

Ammerman A., Smith T. W., Calancie L. (2014) Practice-based evidence in public health: improving reach, relevance, and results. *Annual Review of Public Health*, **35**, 47–63.

Atkinson M., Doherty P., Kinder K. (2005) Multiagency working: models, challenges and key factors for success. *Journal of Early Childhood Research*, **3**, 7–17.

Axelsson R., Bihari Axelsson S. (2006) Integration and collaboration in public health—a conceptual framework. *International Journal of Health Planning and Management*, **21**, 75–88.

Braun V., Clarke V. (2006) Using thematic analysis in psychology. *Qualitative Research in Psychology*, **3**, 77–101.

Braunack-Mayer A., Skinner S., Collins J., Tooher R., Proeve C., O'Keefe M., *et al*. (2015) Ethical challenges in school-based immunisation programs for adolescents: a qualitative study. *American Journal of Public Health*, **105**, 1399–1403.

Best A., Greenhalgh T., Lewis S., Saul J., Carroll S., Bitz J. (2012) Large-system transformation in health care: a realist review. *The Milbank Quarterly*, **90**, 421–456.

Biggs A. (2008) Overview of Commonwealth involvement in funding dental care. In Parliament of Australia (ed). *Parliamentary Library Research Paper no. 1, 2008–2009*. Australian Parliamentary Library, Canberra.

Brownson R. C., Roux A. V. D., Swartz K. (2014) Commentary: Generating rigorous evidence for public health: the need for new thinking to improve research and practice. *Annual Review of Public Health*, **35**, 1–7

Bruce E., Klein R., Keleher H. (2012) Parliamentary inquiry into health promoting schools in Victoria: an analysis of stakeholder views. *Journal of School Health*, **82**, 441–447.

Burgess T., Braunack-Mayer A., Tooher R., Collins J., O'Keefe M., Skinner R., *et al*. (2016) Optimising inter-sectoral collaboration between health and education: the Health Bridges study. *Journal of Public Health*. In Press.

Busch V., de Leeuw J., de Harder A., Schrijvers A. (2013) Changing multiple adolescent health behaviours through school-based interventions: a review of the literature. *Journal of School Health*, **83**, 514–523.

Camargo K. (2013) Medicalization, pharmaceuticalization, and health imperialism. *Cad Saude Publica*, **29**, 844–846.

Chircop A., Bassett R., Taylor E. (2014) Evidence on how to practice intersectoral collaboration for health equity: a scoping review. *Critical Public Health*, **25**, 178–191.

Deschesnes M., Martin C., Jomphe Hill A. (2003) Comprehensive approaches to school health promotion: how to achieve broader implementation? *Health Promotion International*, **18**, 387–396.

Gugglberger L., Dur W. (2011) Capacity building in and for health promoting schools: Results from a qualitative survey. *Health Policy*, **101**, 37–43.

Harris P. J., Kemp L. A., Sainsbury P. (2012) The essential elements of health impact assessment and healthy public policy: a qualitative study of practitioner perspectives. *BMJ Open*, **2**, e001245.

Horwath J., Morrison T. (2007) Collaboration, integration and change in children's services: critical issues and key ingredients. *Child Abuse and Neglect*, **31**, 55–69.

Johnson L., Zorn D., Tam B., Johnson S. (2003) Stakeholders' views of factors that impact successful interagency collaboration. *Exceptional Children*, **69**, 195–209.

Kerner J. (2008) Integrating research, practice and policy: what we see depends on where we stand. *Journal of Public Health Management and Practice*, **14**, 193–198.

Keshavarz N., Nutbeam D., Rowling L., Khavarpour F. (2010) Schools as social complex adaptive systems: a new way to understand the challenges of introducing the health promoting schools concept. *Social Science & Medicine*, **70**, 1467–1474.

Kessels S., Marshall H., Watson M., Braunack-Mayer A., Reuzel R., Tooher R. (2012) Factors associated with HPV vaccine uptake in teenage girls: a systematic review. *Vaccine*, **30**, 3546–3556.

King G., Meyer K. (2006) Service integration and co-ordination: a framework of approaches for the delivery of co-ordinated care to children with disabilities and their families. *Child: Care, Health and Development*, **32**, 477–492.

Langley A., Nadeem E., Kataoka S., Stein B., Jaycox L. (2010) Evidence-based mental health programs in schools: barriers and facilitators of successful implementation. *School Mental Health*, **2**, 105–113.

Liamputtong P. (2013) *Qualitative Research Methods*. Oxford University Press, South Melbourne, VIC.

Marshall H., Proeve C., Collins J., Tooher Tooher., O'Keefe M., Burgess T., Skinner S., Watson M., Ashmeade H., Braunack Mayer A. (2014) Eliciting youth and adult recommendations through citizens' juries to improve school based adolescent immunisation programs. *Vaccine*, **32**, 2434–2440.

Marshall S., Collins J., Sullivan T., Tooher R., O'Keefe M., Skinner S. R., Watson M., Burgess T., Ashmeade H., Braunack-Mayer A. (2013) Parental and societal support for adolescent immunization through school based immunization programs. *Vaccine*, **31**, 3059–3064.

Plsek P., Greenhalgh T. (2001) The challenge of complexity in health care. *British Medical Journal*, **323**, 625–628.

QSRInternational (2008) Nvivo, Qualitative Data Analysis Software.

QUT and AHPSA (2000) *A National Framework for Health Promoting Schools (2000–2003)*. Queensland University of Technology School of Public Health and Australian Health Promoting Schools Association, Sydney.

Rowling L., Jeffreys V. (2006) Capturing complexity: integrating health and education research to inform health-promoting schools policy and practice. *Health Education Research*, **21**, 705–718.

SA Health. (2013) *South Australian State Public Health Plan*. SA Health, Government of South Australia, Adelaide.

Shigayeva A., Atun R., McKee M., Coker R. (2010) Health systems, communicable diseases and integration. *Health Policy and Planning*, **25**(Suppl 1), i4–20.

Varda D., Shoup J., Miller S. (2012) A systematic review of collaboration and network research in the public affairs literature: implications for public health practice and research. *American Journal of Public Health*, **102**, 564–571.

Ward K., Quinn H., Menzies R., McIntyre P. (2013) A history of adolescent school-based vaccination in Australia. *Communicable Diseases Intelligence*, **37**, E168–E174.

Weist M., Mellin E., Chambers K., Lever N., Haber D., Blaber C. (2012) Challenges to collaboration in school mental health and strategies for overcoming them. *Journal of School Health*, **82**, 97–105.

WHO (1997) *Modified from Intersectoral Action for Health: A Cornerstone for Health for All in the 21st Century*. World Health Organization, Geneva.

Wyn J. (2007) Learning to 'become somebody well': challenges for educational policy. *The Australian Educational Researcher*, **34**, 35–51.