

**The school nurse as navigator of the school health journey:
developing the theory and evidence for policy.**

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Brooks, F., Kendall, S., Bunn, F., Bindler, R., Bruya, M., 2007. The school nurse as navigator of the school health journey: developing the theory and evidence for policy. *Primary Health Care Research and Development* 8 (2).

Authors

1. Fiona Brooks, BA, PhD, Reader in Primary Health Care, Head of Adolescent and Child Health Research, CRIPACC, University of Hertfordshire
2. Sally Kendall, B.Sc, PhD, RN, Director of Centre for Research in Primary and Community Care CRIPACC, University of Hertfordshire
3. Frances Bunn, BSc, Msc, Research Fellow in Evidence Based Practice, CRIPACC, University of Hertfordshire
4. Ruth Bindler, PhD, RNC, Associate Professor, Intercollegiate College of Nursing, Washington State University.
5. Margaret Bruya, DNSc, ARNP, FAAN, Professor of Nursing, Intercollegiate College of Nursing, Washington State University.

Author for Correspondence:

Dr Fiona Brooks
Reader in Primary Health Care,
CRIPACC,
Wright Building
College Lane Campus
University of Hertfordshire
Hatfield
Herts AL10 9AB

f.m.brooks@herts.ac.uk

Phone: 01707 285994
Fax: 01707 285995

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Abstract

The aim of this article is to explore how the development of the theoretical and strategic basis of school nursing offers a vehicle for the delivery of an effective public health strategy for children and adolescents. Through a critical examination of the status and scope of school nursing within the UK and US health care systems it is clear that a deficiency exists regarding the theoretical and strategic basis for the functioning of school nursing. Consideration is given to the concept of the school nurse as '*navigator*' for the child along the trajectory of the school health journey. This novel approach to school nursing needs to be developed theoretically and evaluated for effectiveness. A rapid review of the evidence to support school nursing interventions has revealed that the evidence base for school nursing interventions/actions remains very weak, thereby challenging the ability of school nurses to deliver desired outcomes for the present ambitious public health agenda. We argue that a planned approach to developing the evidence for school nursing, based on the UK Medical Research Council (2000) framework for the evaluation of complex interventions, could help to ensure a robust role for the school nurse. This acknowledgement and development of a novel approach to school nursing could contribute to policy implementation around public health goals for the school aged population.

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Introduction

Globally the health status of children and adolescents is increasingly being determined by the prevalence of health risk behaviours (Currie et al., 2004). In the UK alone a quarter of 15-16 year olds smoke, a fifth are likely to have used drugs in the preceding month and sexually transmitted diseases such as Chlamydia now have a rate of one in ten among 16-19 year olds (BMA, 2003, Freedman et al., 1999, Panchaud et al., 2000). In the United States, 21.9% of high school youth are current smokers, 22.4% had used marijuana in the previous month, while 4.1% had used cocaine, and 3.9% had used inhalants in that time period. Thirty-four percent of high school students are sexually active, while only 37% of those who are sexually active used the protection of a condom at last intercourse (MMWR, 2004). Changes in diet and physical activity over the last two decades have led to a dramatic global increase in the prevalence of obesity among children (Janssens et al., 2005, Jotangia et al., 2005, Warren et al., 2003, WHO, 1998).

The construction of risk behaviours among young people involves a multiplicity of complex inter-related determinants; socio-economic status, the environment and gender all play key influential roles in influencing lifestyles. The ability of children to develop strategies of resistance to risk behaviours, and the levels of adult and peer support, also act as overarching influences on the health of children and youth.

Responding to the health needs of children and youth, decreasing risk, and increasing resilience are consequently perceived as significant challenges for public health (Hawkins et al., 1999). In the UK recent health policies have attempted to address not only the health protection needs of children but have also sought to deliver health promotion strategies that ensure and enhance the safety, achievement and well-being of young people and their families (Department of Health, 2004, Department of Health, 2004, DfES, 2003). In the US, both *Healthy People 2010* goals, and the *Healthier US* initiative have set objectives related to health promotion of children and provide information for families regarding health promotion of children, for example, objectives for lowering rates of overweight and obesity in children, reducing proportions of youth with sexually transmitted infections, and reducing tobacco use have specific targeted reductions, and strategies are suggested to achieve goals (United States Department of Health and Human Services, 2000). In both the UK and USA the challenge of responding to the health needs of youth is being seen to require the development of effective multi-sectoral partnerships and collaborations, and particularly the involvement of schools (Department of Health, 2004, United States Department of Health and Human Services, 2000).

The aim of this article is to explore how the development of the theoretical and strategic basis of school nursing may offer a vehicle for the delivery of an effective public health strategy for children and adolescents. Through a critical examination of the status and scope of school nursing within the UK health care system as envisaged through current policy, attention will be given to how policy has been deficient in the provision of a sound rationale for the functioning of school nursing. A

rapid review of the evidence base to support school nursing interventions is reported and developments for future research are indicated. Consideration is then given to the concept of the school nurse as '*navigator*' (Cancer Care Nova Scotia, 2004, Dohan and Schrag, 2005, Freeman et al., 1995, Till, 2003) for the child along the trajectory of the school health journey.

School Nursing: Complexity of the role

The significance of the school environment as a setting for effective health promotion work with children and young people is increasingly being advocated (Currie et al., 2004, Wechsler et al., 2000, WHO, 2000). However health-related work in schools is far from straightforward as competing and diverse demands on the education system may result in schools and teachers feeling ill-equipped to deliver public health messages or simply be unable to prioritise them. This is a problem that appears to exist irrespective of international differences in education systems and welfare policies (Peterson et al., 2001, Tossavainen et al., 2004). Consequently, meeting the public health agenda in schools is likely to require a specialist, a health promotion practitioner, who can traverse the school sector, the community, and champion the public health/ health promotion agenda. One means of achieving the delivery of public health messages for children may lie in the creative deployment of school nursing (Magyary 2002).

A role encompassing a wide range of preventive interventions has been proposed for some time in the USA (Resnicow and Allensworth, 1996):

“School Nursing is a specialized practice of professional nursing that advances the well being, academic success, and life-long achievement of students. To that end, school nurses facilitate positive student responses to normal development: promote health and safety: intervene with actual and potential health problems: provide case management services: and actively collaborate with others to build students and family capacity for adaptation, self-management, self-advocacy, and learning.”
(National Association of School Nursing 6/99 USA)

Despite a long history of health professionals working in schools (Hardy, 2001) until recently the role of school nurses has often been limited to routine screening and surveillance tasks in both the UK and USA (Cotton et al., 2000). In addition, school nursing health promotion work has been predominately limited to very short-term interventions such as one of Personal, Health and Social Education (PHSE) sessions. In the UK policy development is demanding a rapid change to this situation as increasingly the school nurse is being seen as the professional best located to achieve the creation of a healthy school environment (DfeS 2004, DH 2004). UK policy has suggested that that school nurses take a lead on a wide range of health improvement and promotion strategies (Madge and Franklin, 2003). In policy terms this function of school nursing encompasses a multi-dimensional and multi-sectoral understanding of the health promotion and health protection needs of the school age child. In addition, policies addressing the outcome of significant health risk behaviors such as teenage pregnancy, obesity and physical inactivity (DH, 2005b, 2005c) have all highlighted specific areas of responsibilities for school nursing. For example, in relation to obesity:

“The role of the school nurse will be expanded and developed to help build pupil health expertise within schools and provide individual children, young people and families with access to individual support and advice to prevent obesity and promote healthier eating”
(Department of Health, 2005c, p.15)

However, the emphasis on a broad public health role coupled with considerable health protection responsibilities results in the school nurse being faced with a role of potentially immense proportions. **Figure one** provides a model of the levels of public health work that the school nurse role is expected to encompass. The apparent breadth of the school nursing remit, as envisioned by current UK policy, allows for a richness and flexibility to the provision that is likely to be required for an effective response to child health needs. Moreover, the school nurse is the only professional concerned with children’s wellbeing that traverses all the environments of the child i.e. the home, the school and the wider community as well as connecting with the multi-sectoral nature of the service provision for young people. School nurses are also the nursing professional with responsibility for addressing the needs of children over most years of childhood, providing an opportunity to develop an in-depth knowledge of individual and family needs over time. Additionally as members of the nursing profession, school nurses have the expertise to provide comprehensive responses to complex health needs as they combine clinical knowledge relating to the school age population with an understanding of the connection between the social determinants of health and delivery of effective health promotion.

School Nursing: 'A catch all service'

For the last decade a number of researchers have identified that the increasing breadth and ill-defined nature of the scope has resulted in confusion among professionals and young people and families about the expertise and value of the school nurse (DeBell and Everett, 1998, Lightfoot and Bines, 1996). Inadequate resources and limited numbers of school nurses has also added invisibility to the confusion, with the consequence that pupils, parents and teachers may feel that they do not even have access to a service that addresses the school health agenda (Madge and Franklin, 2003). Recent policy in the UK could be seen as addressing this marginalization as the areas nurses are expected to encompass have been increased (Department of Health, 2002, Department of Health, 2004, DfES, 2003); however, despite a call for expansion of the role the unique contribution of the school nurse remains in a vacuum, ill-defined and under-theorized. Scant discussion has been forthcoming about how school nurses are to prioritize their workloads, how they are to model their 'lead' role or even specifically what they contribute as school nurses as opposed to any other professional with a general 'health promotion role'. In part the ill-defined character of school nursing in health care policy and planning can be seen as a feature of the location of nursing itself in the policy process. Nursing internationally has often occupied a marginalised and culturally ambiguous position (Davies, 1995, Davies, 2004). As fundamental aspects of nursing work are intertwined with the low status afforded to women's caring work, the foundational work of nursing is rarely brought to the policy table, but remains hidden and invisible

(Davies 1995). For school nursing it is possible to see how the hidden character of nursing work results in school nursing being seen as a 'catch all service' that can easily be expanded, moulded or contracted to fit the prevailing policy agenda, while their distinctive contribution as nurses is not recognised. School nursing may also be more likely to be a subject of marginalisation due to the continued prevalence in the public and policy consciousness of their historical role as the 'nit nurse' (Clarke, 2000). Moreover unlike other professionals such as midwives who have achieved recognition of their unique expertise through powerful alliances with their client group, the school nursing client group is also relatively 'voiceless' in the policy making process.

Insufficient resources and lack of exclusively designated or ring-fenced resources (Kiddy and Thurtle, 2002) can be seen as another symptom of the poor structural location of school nursing in health care-decision making and the policy process. This is most recently illustrated in the UK by the Chief Nurses' recommendation to increase funding for school nursing. The £42 million that the department of health allocated was not ring-fenced and therefore was used by primary care organisations to support other initiatives. As a result, little change has been structurally observable within the school nursing service. It seems that a central analytic task for the development of school nursing is the identification of both the uniqueness and focus of their contribution to the health of the school age population. It is with the task of identifying the most effective focus that we reviewed the underpinning body of evidence to support school nursing interventions.

Current evidence base for school nursing interventions

While the public health agenda supports the development of the role of the school nurse in public health, there is as yet a very weak evidence base for the effectiveness of school nursing. In a review of the evidence we searched for and included systematic reviews, randomised controlled trials, controlled trials and controlled before/after studies of interventions involving nurses in schools. The following electronic databases were searched in February 2005: CINAHL, Cochrane Controlled Trials Register, Database of Reviews of Effectiveness (DARE), MEDLINE, EMBASE, Health Technology Assessment Database (HTA), Pubmed, SIGLE, Turning Research into Practice database (TRIP) and the National Research Register (NRR). The aim of this review was to: 1) To identify, map, and evaluate reports of school nurse led interventions. 2) To highlight areas where more research is needed. This review included interventions that aimed to promote health or healthy behaviours (e.g healthy eating, physical activity, substance abuse prevention) or treat children with a pre-existing illness. We were interested in any health, behavioural or psychosocial outcome.

All citations identified by the above searches were downloaded into an Endnote database and screened for inclusion in the review. For potentially relevant reports full text was obtained. Data was extracted on study design, type and location of intervention, duration of intervention, characteristics of the participants and providers,

country where the study was carried out, focus of the study and outcome data as specified in the review inclusion criteria.

We found only 16 studies that met the above inclusion and exclusion criteria. This included two systematic reviews (Tilley and Chambers, 2003, Wainwright et al., 2000), nine RCTs (Cameron et al., 1999, DeLago et al., 2001, Harrell et al., 1998, Hill et al., 1991, Lamb et al., 1998, Persaud et al., 1996, Puskar et al., 2003, Werch et al., 1996, Werch et al., 2003), one quasi RCT where allocation was by coin toss (Pike and Banoub-Baddour, 1991) and four non-randomised controlled trials (Allen, 2003, Long et al., 1975, Munodawafa et al., 1995, Skybo and Ryan-Wenger, 2002).

Ten studies were done in the USA (Allen 2003, DeLago 2001, Harrell 1998, Lamb 1998, Long 1975, Puskar 2003, Persaud 1996, Skybo 2002, Werch 1996, Werch 2003), two in Canada (Cameron et al., 1999, Pike and Banoub-Baddour, 1991), one in the UK (Hill et al., 1991) and one in Zimbabwe (Munodawafa 1995). Neither of the systematic reviews found any studies that met their inclusion criteria. The other studies ranged in size from 28 to 10,000 students. However, the majority of studies were small with five having less than 100 participants.

Although the studies all involved nurses delivering care, advice or education within schools only four specified an explicit focus on 'school nurses,' (Allen, 2003, DeLago et al., 2001, Hill et al., 1991, Persaud et al., 1996). Of those one compared nurses' and parents' reading rates of tuberculosis skin tests (TST), and found that school nurses were significantly more likely to read children's TSTs than parents (DeLago 2001). One controlled study (Allen 2003) that looked at the effect of school nurses on

attendance found no difference in general attendance, but found non-attendance for a medical reason was significantly lower in schools with a full time nurse. The other two trials looked at asthma management. In one, nurses educated teachers about asthma (Hill et al., 1991) but they found no effect on school reported absence or participation in games and swimming lessons for children with asthma. In the other they assessed the effectiveness of school nurses teaching children with asthma self-management principles (Persaud 1996). They found no difference in absence from school or asthma knowledge although they reported that the children were less anxious. Of the other studies, two involved public health nurses (Long 1975, Cameron 1999), two nurses with psychiatric experience (Lamb 1998, Puskar 2003), two student nurses (Munodawafa 1995, Skybo 2002) and in the other four the nursing role was not clear (Harrell 1998, Pike 1991, Werch 1996, Werch 2003). The conclusion from the review of these studies is that while there is evidence for effect in some specific interventions (e.g. alcohol use Werch 1996, 2003 and absenteeism Long 1975) implemented by school nurses, there is insufficient evidence to demonstrate overall effectiveness in terms of public health. Even in relation to general health promotion in schools that may offer potential roles for a school nurse, there appears to be a dearth of evidence concerning effective nurse relevant intervention strategies, (Lister Sharp et al., 1999).

Consequently, in order to understand and develop school nursing activity in public health it is timely to examine how to extend the evidence base, both empirically and theoretically. The remainder of the paper will explore a potential model for school

nursing to adopt a leadership role that responds effectively to the needs of the school age population.

Leadership of school health journey - *Nurse as Navigator*

Although the school nurse may not occupy a readily identifiable role in the public consciousness or have access to a robust evidence base, contact with the school nursing service results in the school nurse role being valued by service users (Lightfoot and Bines, 2000). Parents and teachers who have had contact with the school nursing service valued the ability of the school nurse to negotiate the system and work across agencies, while children particularly valued having a person outside their immediate school and home from whom to seek advice (Lightfoot and Bines, 2000). An overarching role as a health advisor to educators, parents and young people was particularly valued. It is this sense of a role that embraces the coordination and leadership of health advice to ensure the health and well-being of the school-aged population that could point to a means to focus and define school nursing. In the absence of sufficient evidence to clearly focus school nursing interventions the remainder of this paper concentrates on exploring a conceptual framework that could clarify the school nursing role. Drawing on concepts developed within cancer care and applied to cancer nursing, a remit for the school nurse as navigator of the child's school health journey is proposed.

The navigator role for nursing is a concept that emerged in cancer care as a means of meeting the 'informational, decisional and educational needs of women with breast cancer' (Till, 2003) and has recently been expanded to encompass generic cancer

care in the US and Canada and is usually described as patient navigation (Dohan and Schrag, 2005). The role is still an evolving one within cancer care and consequently under researched, although studies are now being undertaken (Dohan and Schrag, 2005). However despite a current gap in the evidence regarding the effectiveness of navigation there are a number of elements and dominant principles of the role that offer a way to model a navigation role within school nursing.

Navigators differ from many other nursing roles in their predisposition towards flexible problem solving and away from providing tightly predefined services (Dohan and Schrag, 2005). Foremost cancer patient navigators have an understanding of and respond flexibly to the array of issues patients face to ensure that patients overcome barriers to service access, access the services they need and have the full range of their needs met (Cancer Care Nova Scotia, 2004). In doing so they function as critical reflective thinkers thereby exhibiting the key characteristics of knowledge workers, who are not only able to create new understandings but are also able to identify how to translate such new knowledge into action and change (Brooks and Scott, 2005, Schon, 1987). A further aspect of patient navigation of relevance to school nursing is the principle that navigators seek to function across sectors, to remove barriers to accessing services and reduce inequalities. This multisectoral and holistic aspect of navigation is directly in line with the definition of the school nurse as a public health specialist, with expertise and responsibilities that traverse the environmental contexts of the child (see figure one).

Till (2003) indicates that navigation of the care system has four core components; co-ordination of care, information, decision-making and self-care. While recognising that the therapeutic care system differs from a health promoting school system there are

commonalities in terms of the complexity of the systems, practice issues and health issues being addressed that may allow the navigation model to be transferred. In the context of a developing school based public health/ health promotion agenda refinement of these components of the navigator concept could function as a theoretical underpinning for school nursing. The navigator concept allows for the nurse to adopt a leadership role for the positive construction of the school health journey. The unique sphere of knowledge held by the school nurse of clinical health knowledge combined with an understanding of the multi-environments of the child, home, school and community becomes the defining core of the role. The school nurse as the only public health professional with this combination of knowledge and expertise would be able to adopt a defined, leadership role in terms of health promotion.

Adapting the components outlined by Till (2003), examples of a navigation role might encompass:

1. Coordination of care: This would involve specific prevention-focused interventions (such as obesity prevention programs) in the environment of the school. Case management and referral of some health protection work would be included, as for example, children with diabetes. *Coordination* would also involve the school nurse examining past interventions and designing new and creative interventions tailored to a specific location.
2. Information: The coordination and support for the delivery of key health promotion messages, including the prevention key health risk behaviours. Although the prevention of health risk behaviours requires more than simple information giving, the provision of age appropriate and relevant information is one aspect of effective health

promotion. The school nurse would provide *information* to children, families, and schools, and use information from multidisciplinary fields to plan and model interventions and their outcomes.

3. Decision-making: Macro-level and micro-level decision making could for example, involve school nurses taking a leadership role at the governance level of the school in relation to health issues in the curriculum, or at the level of the individual student enabling a student to make a decision about sexual activity, or offering specialist advice to improve the level of support offered to individual students.

4. Self care - This relates to the ability of the school nurse to promote well-being and self-esteem, to provide support for young people most at risk, being a public health advocate who can effectively take a leadership role in supporting health promotion activity within schools and building community capacity by working with student networks and involving teachers and parents in health issues. The navigator role of *self care* would be integrated throughout all work within schools and their family and environmental contexts.

A navigation role on behalf of individuals and communities would also provide an opportunity for individual school nurses to claim a specialist role in areas of particular professional interest or to respond flexibly to local needs.

The adoption of this role will require strategic support at national and local levels.

School nurses will need increased statutory authority to access schools and to be included on the decision-making bodies of schools.

Attaining a successful navigation role would necessarily involve some tasks that may not require high level nursing skills being delegated to other professionals, for example screening and immunization surveillance could be dealt with in terms of coordinating needs and supervision of other community based practitioners who would undertake such work. Such a move away from the direct delivery of traditional school nursing tasks may not be received well by all members of the profession and the school system. However, the resolution of such tensions may be accomplished via a clearly defined and bounded professional strategic vision grounded in a strong evidence base.

A framework for developing and evaluating the evidence

At this stage, it is proposed that in order to strengthen the evidence for school nursing an approach using the Medical Research Council (MRC, 2000) framework for complex interventions would be an entirely valid exercise. The MRC defines a complex intervention as one that is built up from a number of components, which may act both independently and inter-dependently. A complex intervention can be planned at the individual, organizational or population level but all have components that may include behaviours, methods of delivery and organisation, types of practitioners and settings. The school health environment would seem to be the setting for such a complex intervention where the components might be the risk taking behaviours of children, the organisation of the school, the curriculum, the involvement of parents and the school nurse navigator. The navigator component can be further broken down into the factors underpinning it including co-ordination,

information, decision-making and self-care. In order to try and determine how each of these components interact with each other synergistically and which components may be more or less significant in determining outcomes, the MRC suggests a framework that consists of 5 phases, each of which is critical in moving to the next in order to design a definitive randomized controlled trial. This framework has not, to our knowledge, been utilized systematically in evaluations of nursing interventions, but appears to have considerable potential.

The initial phase is the pre-clinical phase in which theory is explored and developed and hypotheses selected. It would seem from our review that school nursing is still at this phase of research development. In relation to the navigation concept there is a need to pursue this theoretically and to establish the basis of future intervention studies within a theoretical framework that both critically appraises and encompasses, where appropriate, the components as defined by Till (2003) for cancer nursing applied to school nursing.

The next phase includes modeling the proposed intervention to gain an improved understanding of the components and how they might interact with each other. This can be done through computer-based modeling or using qualitative methods such as focus groups and observation studies. Again, this is critical to our understanding of school nursing interventions. On the basis of the exploratory work undertaken in this paper, we would argue that it is necessary to take the components suggested by Till (2003) above and explore them further through qualitative approaches so that the significance of co-ordination, information, decision making and self-care can be assessed and weighted in relation to each other. This would be followed up with an

exploratory trial in phase 3 to put phases 1 and 2 to the test. This will involve a feasibility study that takes the intervention into the school setting and investigates on a relatively small sample of school children the effect of the school nurse as navigator against specified health outcomes such as vaccine uptake, mental health or nutritional health. Finally, a full-scale multi-factorial randomized controlled trial will be designed to trial the model on a much larger scale across a range of school settings. This will enable a full evaluation of the effect of the navigator components on health outcomes based on well developed concepts and interventions. A full-scale well-designed RCT of school nursing has not, to our knowledge, been carried out so far. The application of the MRC framework would enable researchers to plan and envision how future work around school health might develop, including the refinement of the navigation concept.

Conclusion

School nursing has evolved in recent years away from a solely task-focused health protection role to a professional with a wide public health remit. The breadth of responsibilities represented by the new public health agenda is something of a double-edged sword for school nursing. Although allowing for opportunities to employ skills in innovative ways to meet the needs of the school aged children, the vastness of the role can result in policy makers perceiving school nursing as a 'catch all' profession. In addition the evidence base for school nursing is currently weak especially in relation to health promotion interventions (Wainwright 2000).

There appears to be some potential in exploring further the concept of the school nurse as navigator. The complexity of the interventions that are necessary to promote school health goes well beyond the individual level and is concerned with the structural and social determinants of health. A navigation role located within the school health system but authorized, through agreed policies, to act on behalf of the whole school to promote public health can be conceptualized as a navigation role for school nurses. However, the evidence required to develop this concept and to clearly define what works for school nursing, for children and for public health needs to be much more rigorously developed. The next phase of the work around the school nurse as navigator will be to continue with theory development, drawing on a wide range of social science as well as health related concepts and using the MRC stages to develop and test complex nursing interventions in the school setting. In the future, we would hope to be able to identify and isolate the components that come together to enable implementation of policy at school level and to ensure effectiveness in both outcome and experience of the school health journey.

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Figure one: The public health roles of the school nurse



