

**AN ANALYSIS OF HEALTH INSPECTION AS A
COMPONENT OF SCHOOL HEALTH SERVICE, IN
KWAZULU-NATAL**

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**Submitted in fulfilment of the requirements for the
degree of Master of Medical Science (M. Med. Sc.) in the
Department of Community Health, University of Natal,
Durban."2000"**

DECLARATION

The whole thesis is my own work and has not been submitted in part or in whole to any other University.

The research was done in KwaZulu Natal Province. Region B (Indlovu) of the Department of Health was the area sampled. The districts involved were: Pietermaritzburg, Grey Town, Kranskop, Maphumulo, New Hanover, Richmond, Hammarsdale, KwaNdengezi, Impendle, Bulwer, Underberg, Lion's River and Ndwedwe.

SUPERVISOR.

Professor CC Jinabhai, of the Department of Community Health at the University of Natal was the supervisor.

ACKNOWLEDGEMENTS

My sincere appreciation goes to everyone who assisted me in one way or another, especially pupils and their parents who consented to participate in the study.

I thank the Departments of Health and Education for allowing me to conduct the study in their institutions.

I would like to thank Mrs L Chetty, Mrs P Marais and Mrs N Mona, the SHS co-ordinators and School Health Teams (SHT), for their support and co-operation.

Thanks go to The Health Systems Trust for funding the project.

My family was very supportive right through the project; my sincere thanks go to my husband and two sons.

A very special thank-you to Professor Jinabhai, Myra Taylor & Dr K Sullivan for guidance support and understanding.

I would like to thank my colleagues Ms N Morar, Ms V Govender and Mrs D Nzimakwe for support and assistance.

Above all, I would like to thank Muzi Zungu and S'thembile Myeza, who worked tirelessly to type and retype my work. A special thank you goes to Mrs L Phillips and Joseph Wamukuo who, with their computer expertise, performed the impossible in order to ensure that my report was in the best form. Lois helped me with both analysis and typing, and Joseph Wamukuo helped with figures and graphs.

Last but not least I thank my research assistant, Gugu Memela, for her special input in the field and for data capturing.

ABBREVIATIONS

CSHEP	Comprehensive School Health Education and Promotion
DET	Department of Education and Training
DOH	Department of Health, refers to the KwaZulu-Natal Provincial Department of Health.
DHS	District Health System
HA	Health Assistants
HI	Health Inspection - the observation or thorough visualisation of each part of the body. It includes listening for unusual sounds and paying attention to odours. It can be enhanced by the use of instruments. ¹ (Wold) It includes: <ul style="list-style-type: none"> • preparing children for physical examination by giving them orientation on the service, writing lists of boys and girls separately and measuring weights and heights. • screening children for poor vision, scoliosis, dental and ear problems. Screening means a system of checking for the presence/absence of a disease, ability or attribute.¹ • full physical examination. • target class, which means a class chosen for full examination during a health inspection visit. • Review, which refers to a general survey or assessment of a service or a component of a programme.¹
HOD	House of Delegates
HOR	House of Representatives

HST	Health Systems Trust
KZ	KwaZulu
KZN	KwaZulu-Natal
NH	National Health
NPA	Natal Provincial Administration.
PHC	Primary Health Care
SASO	Specialised Auxiliary Service Officers.
SHN	School Health Nurse - refers to a registered nurse, enrolled nurse or nurse auxiliary.
SHS	School Health Service - refers to the services rendered by the Department of Health in schools through mobile teams.
SHT	School Health Team - refers to a registered nurse visiting schools or a registered nurse with one or more assistants visiting schools in one vehicle.
STD	Standard
UNESCO	United Nations Education, Scientific and Cultural Organisations
UNICEF	United Nations International Children's Emergency Fund
WHO	World Health Organisation

ABSTRACT

Introduction

In 1996 there were 1,847,440 pupils in 4007 primary schools in KwaZulu-Natal (KZN) who were targeted for school Health Inspection (HI). In the same year there were only 95 school health teams who were visiting schools for HI. The School Health Service (SHS) had been running on a racial basis since the Apartheid era of government, and needed to be reviewed in order to measure its effectiveness and to make it relevant to the new government and its new health policies.

Purpose

To review HI as a key component of School Health Services (SHS) and make recommendations to improve its impact on the health of the school child and on health promotion in schools.

Objectives

To describe the structure, process, output and outcome of HI in KZN; to measure the impact of HI on the health of school children; and to calculate the SHS consultation cost and compare it with other primary health care services.

Methodology

A cross sectional study involving 21 schools covered by the SHS and 5 schools not covered by SHS was undertaken. The study area was KZN and the sample area was Indlovu region. All health authorities and racial groups participated in the study.

Results

A total of 212 children and 129 parents were interviewed. Of the children interviewed, 156 pupils (73.5%) had been involved in HI and 56 (26%) had not.

The average nurse/pupil ratio was 1:49301. HI coverage was 62%. Of the 156 pupils examined, 108 were referred and 53% of them went for treatment. 93% of parents interviewed gave a positive comment on HI and 24.8% of them did not know their children's problems before they were informed by the SHN. Std. 5 pupils interviewed before and after HI were compared and it was found that 57% from the after-HI group went for treatment for their health problems compared to 53% before HI. Subjective feelings improved from 15% pain before HI to 0% after HI.

Conclusion

HI had a positive influence on encouraging pupils to seek recommended treatment and this is likely to improve their health.

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CHAPTER 1: INTRODUCTION

1.1 Motivation

Traditionally School Health Services (SHS) in South Africa (SA) were developed as a vertical programme aimed at screening and early detection of preventable health problems among school children with differential quality, access and impact among the various communities in KwaZulu-Natal, depending on where, or by whom, the services were rendered.

The adoption of the District Health System (DHS) to provide comprehensive Primary Health Care (PHC) as a national and provincial policy means that the role and contribution of SHS needs to be redefined. Ideally all vertical programmes such as the SHS should be integrated with the DHS, while the impact of its different components should be maximised.

A key component of SHS is Health Inspection (HI). The clinical and the health promotion value of these components require evaluation of their impact on the health of school children.

A focus on school children is important because children spend a lot of their time at school, away from home; because some parents tend to postpone health seeking for children's health problems; because transmission of infections in school children can easily occur due to large concentration of

children in school; and because this is the time when very important health-related habits develop. Improvements in peri-natal mortality, infant mortality and the emergence of adolescent related health problems (substance abuse, STDs, etc) have focussed attention on health promotion of this neglected age cohort.

It is believed that 7% of nurses in the world are involved in school nursing.² Studies have shown that health inspection in schools is necessary to ensure that children derive optimum benefit from the investments in education and health programmes, and that they remain physically, mentally and socially healthy.^{3,4} HI as part of SHS synergistically contributes to improved educability and health status. These are critical elements of the government's Reconstruction and Development Programme (RDP) and the National Health Plan (NHP).

The study was necessary to provide a detailed analysis of health inspection as a component of SHS in order to contribute towards the transformation of the service into the District Health System.

School Health service will be described as the context within which Health Inspection occurs.

1.2 History of School Health Services (SHS)

As early as 1850 in America, the need for SHS programmes such as health promotion in schools was identified. As a result of this, hygiene rounds and personal hygiene inspections were conducted at schools.⁵ In 1891, Dr Malcolm Moris proposed that a staff of specially educated nurses should visit schools regularly to examine children.⁶

Sanitary inspection, which later developed into health inspection, was conducted in America as early as 1850 to detect children with communicable diseases. School children were regarded as especially susceptible to the spread of communicable disease because they are a large number of children constantly in touch with one another.

As resources became more available in the 1950s, counselling, co-ordination of community health services and environmental health became the responsibility of the school nurse.⁷ From the 1970s, the SHN's role became unclear due to lack of funds and expectations that the school nurse's role would expand.

The first SHS were medical examinations, which took place in Boston in 1894. The purpose of those inspections was to identify children with infectious conditions. Educating about communicable diseases, health examinations

and immunisation of children were key components of interventions by public health nurses: disease prevention was the primary focus.⁷

In the United States, the first school nurse was appointed in 1894 and the first school doctor in 1902. The SHN's function was mainly to exclude children who had communicable diseases. Screening for parasites was later included. In 1902, Lina Rogers was appointed as the first school nurse in New York. She was expected to give health education in order to reduce the number of children excluded from school.^{1 & 4} She visited four schools a day, spending one hour per school and making follow-up visits in homes. The following year New York City established the first municipal sponsored school nursing service.

Lina Rogers' experiment was successful in pointing out health problems and influencing authorities to improve conditions, and she was employed to direct the SHS programme. Schools in poor areas were visited. This led to an improvement in health of pupils in those schools and the increase of SHS teams. School clinics were later started in schools.

The result of Lina Rogers' work was so convincing that the Board employed 25 more nurses. Within a year, the impact was so significant that only 1101 children were excluded, compared to 10 567 in the previous year. By 1945, the school nurse in the United States of America had shifted from doing mainly

screening and treating, to counselling and guidance. At the same time there was an emphasis on the class teacher getting involved with health as a subject.⁶

A Little Mother's league was established, where little girls of 8 years old were taught how to look after their younger siblings. In 1905 Miss Wald initiated school lunch programmes.⁶

According to Freeman (1981), the role of the school nurse then changed to counselling and consultation. Since 1964, the goal shifted to ensure maximum benefit from the educational programmes provided at schools. Special emphasis was placed on equity and resources for disabled children.^{1,6 & 8}

In 1961, the American Nurse's Association and the National League of Nurses recommended that school nurses have a BA degree (Dolan). In 1970, the school nurse was faced with new challenges such as drug abuse, venereal diseases, teenage pregnancies and others.⁶ Mandatory school attendance led to an increase in communicable diseases and therefore a need for SHS.

Heneghan, Marguerite and Malakolf state that in the early 20th century, SHS was directed at prevention of communicable disease. However, by 1970 SHS was more comprehensive and focused on health education, treatment of acute illnesses and screening for health problems such as vision and hearing loss.

In the 1980s, the Robert Wood Johnson Foundation expanded SHS to focus on adolescents. To date there are 600 school based clinics for adolescents in the United States.⁹

In 1892, school nursing was introduced in London, England. SHS developed in Europe and Britain at the end of the nineteenth century. In the United Kingdom (UK), the development of school nursing was inspired by industrialisation and social development.⁴

Slack (1978) states that from the time SHS started in London up to 1973, it was provided by the Department of Education in government schools. In private schools it was provided by doctors and nurses on a contract basis. It was mainly curative. The Education Act of that time made it compulsory for the education authorities to provide medical inspections. In 1945, it was recommended that the school nurse be a qualified health visitor.¹⁰

Independent schools had their own medical services.^{4 & 11}

In 1973, the National Health Service (NHS) in the UK, made medical examinations, dental inspections and treatment in schools a function of the NHS. As a result health personnel, for example doctors (including specialists and family practitioners), nurses, dentists, speech therapists, psychologists and welfare officers, were available to support the service. The aim of NHS was to make SHS part of an integrated child health service.¹⁰

The history of medical examination or health inspection in London included an entry examination; an assessment for special education needs; selective examination by the school doctors or nurses; special examination for employment and school journeys; examination on return to boarding home; recuperative holidays; infectious diseases; research and secondary school examinations.

The first entry examination involved a general examination for development and any health problem that may affect the child's learning ability. It also included assessment of vision, hearing, weight, height and urine.¹⁰

Prior to the establishment of the NHS, school clinics provided free treatment to children at schools; later parents were encouraged to make arrangements for the treatment of their children.¹⁰

In Belgium, school nursing started in 1837. In 1874, the first school doctor was appointed in Brussels.^{4 & 10}

The school-based adolescent health programme in Namibia started in the nineteen eighties. The main objectives were: to promote health; prevent disease; detect and treat health problems; and assist the child to develop a high level of self-confidence. Special features of this programme included a

joint undertaking between Education and Health to integrate Health Education into the school curriculum.¹²

In South Africa, it was realised that many young men who volunteered to join the army had health problems and physical handicaps that could have been treated if discovered early. Dr Louis Leipoldt was appointed by the director of Education to provide SHS in the Transvaal province in 1914. He had been an assistant school doctor in London.¹³ He was the first school doctor in South Africa. His appointment led to the appointment of the first school nurse in that province, Miss France Hassal. In Natal, the first school nurse was appointed in 1916; in the Cape in 1918; and in the Orange Free State (OFS) in 1920.⁴

Dr Leipoldt wrote in his book, *The Bushveld Doctor*, that when he first started to examine children in schools, there was no legal provision that allowed him to perform that function. He was therefore advised to obtain prior permission from parents before examining any child.¹³

After World War I, the public was still concerned with health services to improve the health of young men. It was later realised that health education in schools might have an effect in reducing health problems of school going children.¹⁴

According to Searle (1994), the objectives of the SHS were to maintain the pupils health, to prevent disease and to rehabilitate children who were ill.⁴

HI in KZN covers the objectives of the school entry examination in grade 1. They also assess development through anthropometric measures, assess physical and mental abilities of the child who is not progressing well on referral by teachers, for ill health and research. It does not include examinations for journeys, admission to boarding schools and for employment.

Historically community health nurses have assumed a major role in developing child health services. As years went by they could no longer deal with only physical health problems but had to work closely with other agencies in the community, so that a concerted effort was made to prevent death in the school-aged population.⁵

The most common problems of the school aged children when SHS started included acute illnesses for example pneumonia, communicable diseases, parasitic infections, injuries, chronic conditions including poor hearing, poor eyesight, asthma, diabetes, heart disease, sexually transmitted diseases, suicide, child abuse and neglect, drug abuse, teenage pregnancies and many other conditions.

Before 1994, SHS in South Africa was fragmented. SHS for “Blacks” was administered by the Education and Training Act, (Act 90 of 1979), providing health surveillance of school children between the ages of 5 to 18 years. The concern that the majority of children were referred to health institutions for treatment, resulted in some school nurses providing treatment at schools as part of a comprehensive health service.³

Recent studies indicate that the routine and periodic physical examination of school children seems to be of limited value in revealing previously undisclosed health problems. However, SHS programmes help prevent communicable disease; find and correct physical and emotional problems; prepare for emergencies and disaster; lays the foundation for health knowledge, attitudes and habits; and promote well being.¹⁵

1.3 Current Approaches To SHS

The issue of whether Education or Health Departments should provide SHS is still unresolved.⁷ A similar debate exists in South Africa. There are recommendations made by the National Commission on Education Support Services (ESS) that SHS should fall under the Department of Education.¹⁵

The US National Health objectives for year 2000 related to SHS emphasise promotion of health through school-based health education and increasing

the proportion of children entering school programmes for the first time, who receive oral health, screening, referral and follow-up for necessary diagnostic, preventive and treatment services.⁷

The American Nursing Association (ANA), the colleges of Nurses in Canada and the professional nursing associations have developed standards of practice for community health nursing which are applicable to nurses practising in a school setting. The standard includes concepts, such as an appropriate nursing theory; the development of a comprehensive SHS programme; interdisciplinary collaboration; health education; professional development; participating with other community development agencies; extensive community involvement and research.⁷

Activities that a School Health Nurse (SHN) in the US may be involved in include health screening such as for vision, hearing, scoliosis, speech/ language development and motor disturbances. These can also include developmental screening and direct care such as first aid treatment and giving of medication for minor ailments.⁷ The fact that the US as a developed and a rich country still needs SHS suggests that the need in SA is greater, since it is a developing country and has less resources to address health needs.

Current approaches include the Health Promoting Schools Network as launched in the Western Cape¹⁵, and the Global School Health Initiative of the World Health Organisation (WHO). Adolescent health in the US includes a comprehensive school health approach, and other programmes including immunisation, health education, health inspection, environmental health and other interventions occur in Bangladesh, US, UK, Namibia and South Africa.^{12,15,17,18} Other thrusts include using interventions such as the parasite control programme in SA as entries to schools. The US also utilises SHS clinics as service points. Japan has a school-based school nurse.¹⁹

One of the current trends in SHS is using an integrated approach such as life skills, HIV/ AIDS, education support services, nutrition services and counselling.¹⁵

Health promotion programmes have assisted different programmes and departments to work together. In KZN, meetings and workshops are held where all role players who work with school children come together and share what they are doing in schools and help each other in pursuing their objectives. Examples of such programmes are the Primary School Nutrition Programme (PSNP), the National Oral Health Survey, the Parasite Control Programme, the HIV/ AIDS education programme, the Life Skills Programme and the National Plan of Action for Children. In the Western Cape the Health

Promoting Schools Network (HPSN) was systematically introduced in schools since 1996.

In the Eastern Cape Departments of Education, Health and Welfare work very closely together. In the Northwest, SHS is located within the Department of Education.

The WHO Expert Committee on Comprehensive School Health Education and health promotion urges all people to imagine “A World” where schools take on the challenge to implement new and exciting ways to co-ordinate educational processes. The committee also urges people to monitor environmental conditions within and outside the school, to audit the range of available health service in the community and to enhance the educational achievement and health of young people.¹⁶ Teachers in selected states in India participate in health examination with follow-up, being supported by health education material.¹⁷

1.4 Training Of School Nurses

The American Nursing Association (ANA 1961) and the National League for Nursing (NLN 1962) recommended that school nurses have field experience in school nursing at the undergraduate level. The University of Colorado developed such a programme to assist nurses with baccalaureate degrees.⁶

In KZN school nurses receive the same training as other professional nurses at basic level. At specialisation level they do Community Health Nursing Science. Enrolled nurses, auxiliary nurses and Specialised Auxiliary Service Officers (SASO) receive on the job training on SHS.

1.5 SHS Components

SHS has many components including health inspection (HI), health education, immunisation, health survey, first aid and in some cases, treatment of children with minor ailments. Children with defects are referred to health institutions for treatment and further management. Components of the service were not uniform in all the previous health authorities in South Africa. For example, in ex KwaZulu, school nurses were involved with immunisation and community health projects in addition to their traditional roles, and the Natal Provincial Administration (NPA) teams were giving treatment for minor ailments at schools.²⁰

Components are greatly varied from country to country and even within one country, and are dependent on the financial and material resources available to render the service.

In the US as a developed country, generic SHS programmes have been found to be limited to making an impact on reducing school failure, teenage

pregnancy, school dropouts, substance abuse and violence. In this country a wide range of services are being rendered including school-based clinics or health care centres. These centres provide greater access to health care. Comments from educators and health care providers indicate that these school-based centres can improve school attendance and reduce dropout rates. In 1988 a study found that the school based centres succeeded in reducing teenage pregnancy.¹⁹

In developing countries, SHS are likely to include identification of health problems, growth monitoring, check-ups and vaccinations. A review of services in sub-Saharan Africa, revealed that these services focus on the following areas: increasing access to services; targeting diseases; involving the community; alleviating stress due to inability to cope with learning experiences; minimising development of anti-social behaviour; extra curricula activities; child-to-child activities; and curriculum development.^{19, 21}

1.5.1 Health Inspection

Health education is given to children seen, as a group or as individuals, before and during health inspection. Should emergencies occur, for example a child has an epileptic fit, the nurse renders first aid care on the spot and then refers the child for further management.

Parents' and teachers' meetings are sometimes called to discuss the health status of the children. Parents are invited to come to the school for an interview by the school nurse should the need arise. The expectation is that the visiting SHS team should not leave the school before holding a parents' meeting.

The KZN Department of Health renders a mobile health service to all government schools in the province by means of teams of nurses and SASOs. In 1996 KZN SHS was delivered from three different health departments. Departments involved in SHS were ex Natal Provincial Administration (NPA) for "Blacks" in Trust and rural areas, ex National Health (NH), for "Whites", "Indians" and "Coloureds" (House of Assembly, House of Delegates & House of Representatives respectively) and ex KwaZulu Government Department of Health (KZ) for "Blacks" in the Home Land area.²⁰ After the first democratic election in April 1994, services were co-ordinated at provincial and later at regional levels, and proposals for full integration of SHS were submitted to Head Office.¹⁸

1.6 Rationale For HI

The WHO rationale for SHS including HI provision is based on evidence of substantial health savings made through the SHS - health problems that can

be addressed through SHS using effective strategies for the different components of SHS. This is summarised below.

1.6.1 Economic Benefits

Money spent on SHS can be justified purely on economic grounds. For example, the money used in the prevention of tobacco abuse is 19 times less than money spent on treating the consequences of that behaviour. The money used on prevention of alcohol abuse is 6 times less than money spent on treating the consequences of that behaviour. The money used on educating youth to prevent early and unprotected sex is 5 times less than money spent on the consequences of that behaviour.¹⁹

According to the WHO, school health programmes that co-ordinate delivery of health education and health services, and that provide a healthy environment can become one of the most efficient means available for almost every nation to significantly improve the well being of its people.¹⁹

1.6.2 Other SHS Benefits

School based programmes can reach most of the world's school-aged children. Such programme can reach about 1 billion students worldwide and through them their families and the community. In Korea for example, the prevalence of intestinal parasites among children was reduced from 80% to 2% in 30 years.

If teachers are involved, there are 43 million teachers in the world who can make an impact on health care. Studies in the US have documented that carefully implemented comprehensive SHS can prevent certain adverse effects of substance abuse. Safe health habits learnt through childhood will be applied throughout life.

School based health clinics show children the benefits of being a health consumer. Health promotion for school staff can decrease absenteeism, improve morale, and help to reduce body weight, resting pulse, serum cholesterol and blood pressure. The provision of sexuality education in schools can increase the adoption of safer sex practices in the sexually active youth, and delay the start of sex among the non-sexually active youth.

1.6.3 Common Health Problems Addressed Through SHS & HI

HIV/ AIDS is one problem that can be prevented through SHS. Of the 6000 new HIV infections every day in South Africa, more than half, are among youth. Violence and injury are responsible for up to one third of all hospital admissions, and the annual medical and social costs due to injuries are estimated by WHO to exceed \$500 billion. Reproductive health such as early pregnancy of girls has life long effects on their education, training and work opportunities.

Helminthic infections affect about 400 million school children in the world. Treatment of these worm infections can greatly improve the lives of the affected children and reduce the spread to other children.

Studies in Honduras, Kenya and Philippines have found that the academic performance and mental abilities of children with a good nutritional status were significantly higher than that of those who had a poor nutritional status.

Unsafe and inadequate sanitation and water are the cause of many waterborne and intestinal infections of school children. These infections seriously impair growth and development. Improvement of facilities in schools can reduce these infections over a long time. About 2 million children die every year from vaccine preventable diseases. Schools have a clear role in mass immunisation campaigns.

The damage caused by the abuse of alcohol, tobacco and drugs is not only linked with the person who abused the substance, but extends to other people - through drunken driving, fires, passive smoking, crime and violence.

Dental caries remain one of the most common conditions found in the school-aged population. Dental caries are linked to the eating of refined foods. Oral health care programmes in schools can do a lot to prevent the occurrence of dental caries and to start early treatment of those already affected.

Acute Respiratory Infections (ARI) such as common colds, tonsillitis, epiglottitis, ear infections, laryngitis, bronchitis, bronchiolitis, asthma and pneumonia commonly occur among school children. Treating these conditions appropriately can prevent complications. Poverty, including malnutrition and overcrowding, increases the risk of ARI.

Only 27% of the world's population is unaffected by malaria. About 9% of the world's population live in areas where malaria is endemic. Malaria adversely affects the child's academic performance during and after the attack.

Mental health is estimated to affect over a million people in the world. A 15-year study in Sudan confirms that the prevalence of mental health conditions has increased even though physical living conditions have improved. It is estimated that nearly 1 in 5 children will experience an emotional or psychological disorder during adolescence.¹⁹

1.6.4 School Health Education

According to WHO health education is the most developed component of SHS.¹⁹ It concentrates on improving behaviour that promotes health and prevents ill health. It allows for development of skills of the youth, change of attitudes and development of positive values related to those behaviours.

1.6.5 Teacher Training

The aim of teacher training is to change attitudes towards supporting health; to encourage commitment to health as a subject; and to improve skills and understanding of the subject.

1.6.6 School Environment

A supportive school environment depends on the policy of the school. A healthy physical environment with good sanitation, clean water, safe waste disposal, no smoking or carrying of guns, food hygiene can contribute towards improving the health of children in a school. An important aspect of the psychological environment is the role that can be played by teachers to ensure a good relationship between themselves and the pupils.

1.6.7 Health Promotion Of School Personnel

Applying health promotion principles to teachers has resulted in a change in their attitude to their personal health.¹⁹

1.6.8 Schools And Community Relationships

The community is an important contributor to the promotion of health of the school population. The school needs to be open to the ideas of the community. Communities can contribute skills, labour and material resources towards improving the health of the school. The sustainability of health promotion projects at schools is dependent on community participation.

1.6.9 Nutrition And Food Services

Major problems among primary school children in developing countries are protein energy malnutrition, micronutrients and hunger. Nutrition services at schools usually include provision of food to relieve hunger; monitoring of the nutritional status of the children; and the provision of micronutrients and health education to pupils and teachers.

1.6.10 Physical Education And Recreation

This aspect of health may not be needed in developing countries where some children are often required to perform hard labour and to walk long distances to school. In developed countries children do very little exercise and suffer from obesity. In these countries it is important to promote physical exercises at school. One of the outcomes of physical exercises is an improvement in the academic performance of the children.

1.6.11 Mental Health Care Services

These services can be pupil- or environment-oriented. In order to improve health, a Norwegian mental health programme provided workshops for teachers and parents to prevent bullying. Mental health programmes should emphasise the principle of a healthy life style. Where possible, a mental health resource centre should be established at the school to help teachers and pupils to improve their mental health. Non-governmental organisations

should be encouraged to participate in the mental health activities at the school.

1.7 HI Conceptual Framework In KZN

School health inspection as part of health promoting schools network.

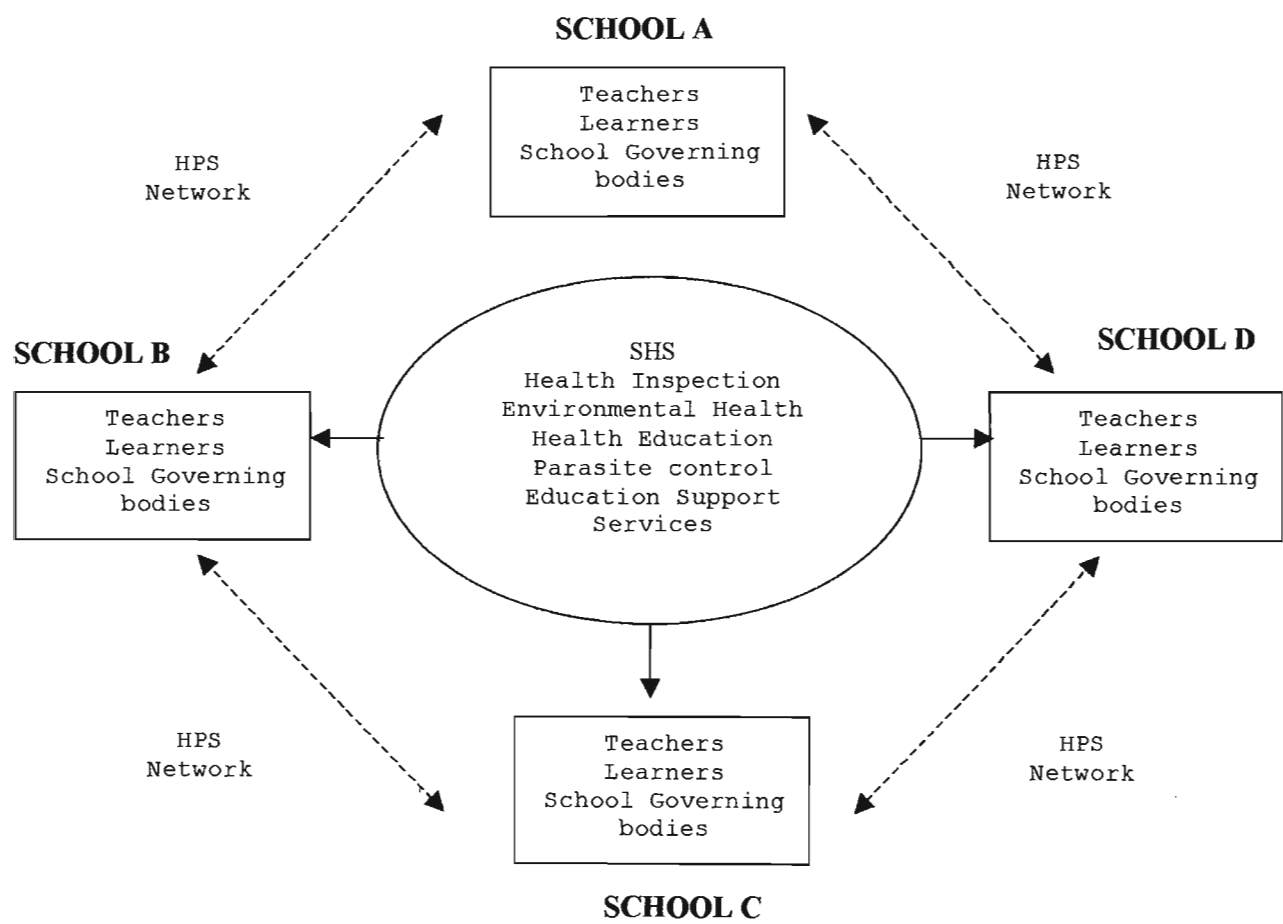


Figure 1: SHS Health Inspection And Health Promoting Schools Network

1.7.1 Rustica's School Health Promotion (SHP) model

According to Rustica's School Health Promotion model, HI is regarded as a nursing intervention, second to health education; directed at meeting the objective of secondary prevention of physical, emotional and social problems, to facilitate early detection of health problems, provide or facilitate prompt intervention and to prevent complications. The outcomes of this intervention for the learner include: ⁵

- making informed decisions about health;
- recognising individual health status characteristics;
- locating and utilising resources to achieve optimal health;
- recognising potential health hazards.

SHS is not just a nursing service; it is also a health service. In order for it to be complete, it requires the co-operation of all health, education, welfare and other professionals.

1.7.2 Systems Approach

This conceptual framework will be utilised to analyse the inputs, processes, outputs and outcomes of HI. ²² The variables of interest are shown in figure 2 below.

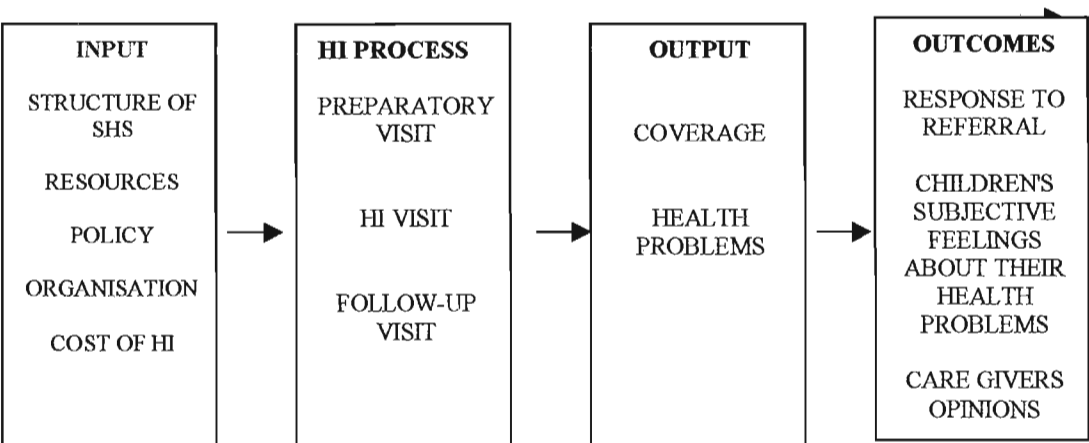


Figure. 2: A Systems Approach

1.8 Problem Statement

There is little information on the scope and practice of school health inspection (HI) and its impact on the health of school children in KwaZulu-Natal as identified by a situation analysis of the existing SHS. These services have not been evaluated. There is also a need to reorganise health services to meet the changing needs after the birth of a new, non-racial and democratic SA. New health policies are being developed and the reorganisation of health services, including the integration of SHS, is a national priority. This is especially important following the apartheid period where services were organised along racial lines. However at present there is no national guideline to provide a framework for the transformation of SHS and HI into an integrated non-racial service. As a result of the lack of guidelines and direction, this service continues to be rendered along racial lines.

1.9 Purpose Of The Study.

To analyse HI as a component of the SHS, so as to make recommendations for the development of an integrated service with an optimum impact on improving health of school children.

1.10 Objectives

- to describe the inputs/structure of HI in KwaZulu-Natal;
- to describe the process of HI;
- to measure the output of HI; and
- to describe the outcome of HI.

CHAPTER 2: LITERATURE REVIEW

The aim of this literature review was to study the inputs/structure, processes, outputs and outcomes of HI in developed as well developing countries. However, literature presents HI as part of SHS and as result it was not possible to present the HI situation in the literature without referring to SHS as background.

2.1 SHS Inputs

2.1.1 Structure Of SHS

The structure of SHS in the United States of America was compared with that in United Kingdom (Table 1)

Table 1: Comparison of SHS in the US and UK ²³

ITEM	UNITED STATES	UNITED KINGDOM
Funding	School Boards	School Boards
Training	BA degree	Degree not necessary
Handicapped children	In normal school	Special schools
Emphasis	School child	Under 5 child and Less on school child
School Health Service	Developed	Not so developed
School Health Nurse	Is a profession	Not a profession on its own.
SHS manager	Supervisor is a former school nurse	May not be a school nurse

Services can be provided from Health or Education or both departments in combination.

2.1.1.1. Profile of schools in KwaZulu-Natal

The infrastructure at schools in South Africa in 1996 had been reviewed by the Development Bank of Southern Africa (DBSA) and a consortium involving the Human Sciences Research Council (HSRC), Education Foundation (EF) and the Research Institute for Education and Planning (RIEP).²⁴ They found that the infrastructure in SA schools was as follows: more than half (52%) of the schools were without electricity, 24% had no water, 12% no toilets and 61% no telephones. ²⁴ In KZN, 57% had no electricity, 24% had no water, 10% had no toilets, 66% had no telephones and 82% had no library facilities.²⁴

2.1.2 Resources For HI

A study conducted in Soweto in 1983 found that resources available to SHS allowed nurses to visit schools only once in 2 to 3 years. SHS teams in Soweto visited schools at the same rate as in KZN rural schools.²⁵ The Soweto study noted that SHS in SA was hampered by fragmentation of health services but that if it was given adequate resources, it had potential to develop into a more comprehensive and cost-effective service with benefits for the community.²⁵

Historically, nurses were the providers of school health services.

Approximately 30,000 SHNs and 900 medical health care providers are

practising in the US for approximately 110000 schools.^{24 & 26} In Massachusetts school nurses were the primary providers of health in 2600 schools.^{26, 27}

The Simmons School Health Institute (SSHI) in the US provides training to enhance physical assessment skills of school nurses to enable them to effectively identify and manage acute and chronic health problems. The programme leads to a qualification at baccalaureate level.²⁸

2.1.3 Policy

The WHO expert committee on SHS has recommended a policy supporting health promotion in schools. Ideally, every school should have access to safe water and proper sanitation in order to reduce helminths infections. Such a policy represents political commitment to the programme.²⁹

In British Columbia in Canada, both health and education departments are responsible for formulating SHS objectives and policy. The local school board pays for the services and the school nurse provides SHS as part of general community health.³⁰

SHS in Britain in 1986 was reported to be suffering from lack of clear guidance and strong leadership at national level. This resulted in uncertainty about specific service objectives and a variation in standards, organisational structure and methods of practice at district level.³¹ The same was

experienced in KZN due to the transformational process following the birth of the first democratic government in SA.¹⁹

SHS in the Uppsala municipality in Sweden is guided by uniform principles based on the education policy (Rydell).³²

According to Weber (1989), the structure and nature of SHS is influenced by government policy on health and education.³⁰

2.1.3.1 SHS strategies and approaches

Comprehensive SHS

The components of a comprehensive SHS usually include health inspection, health education, environmental health including water and sanitation, nutritional services, the treatment of common diseases such as helminth infections and growth monitoring.¹⁷

SHS and health promotion

Efforts to promote health through schools have been an important goal of WHO, UNICEF, UNESCO and other international organisations since the 1950s. Several major international meetings have been held to review SHS, for example the WHO expert committee on SHS in 1954.³³ SHS delivered through health promoting schools can address many major challenges to

health throughout the world. These challenges include HIV/AIDS, sexually transmitted diseases, violence, injury, unintended pregnancies, poor reproductive health, helminth infections, psychological problems, poor nutrition, poor sanitation and water control, lack of immunization, poor oral health, common diseases in the area, problems associated with lack of physical exercise and substance abuse.

In September 1995, the World Health Organisation (WHO), convened an expert committee meeting on Comprehensive School Health Education and Promotion (CSHEP) to make recommendations on SHS policy and steps that can be taken to help schools promote health. The committee recommended that promoting health through schools could simultaneously reduce common health problems, increase efficiency of the education system and therefore advance public development.^{17, 16}

From the literature review, HI contribution towards health promotion can be summarised in Figure 3 below.

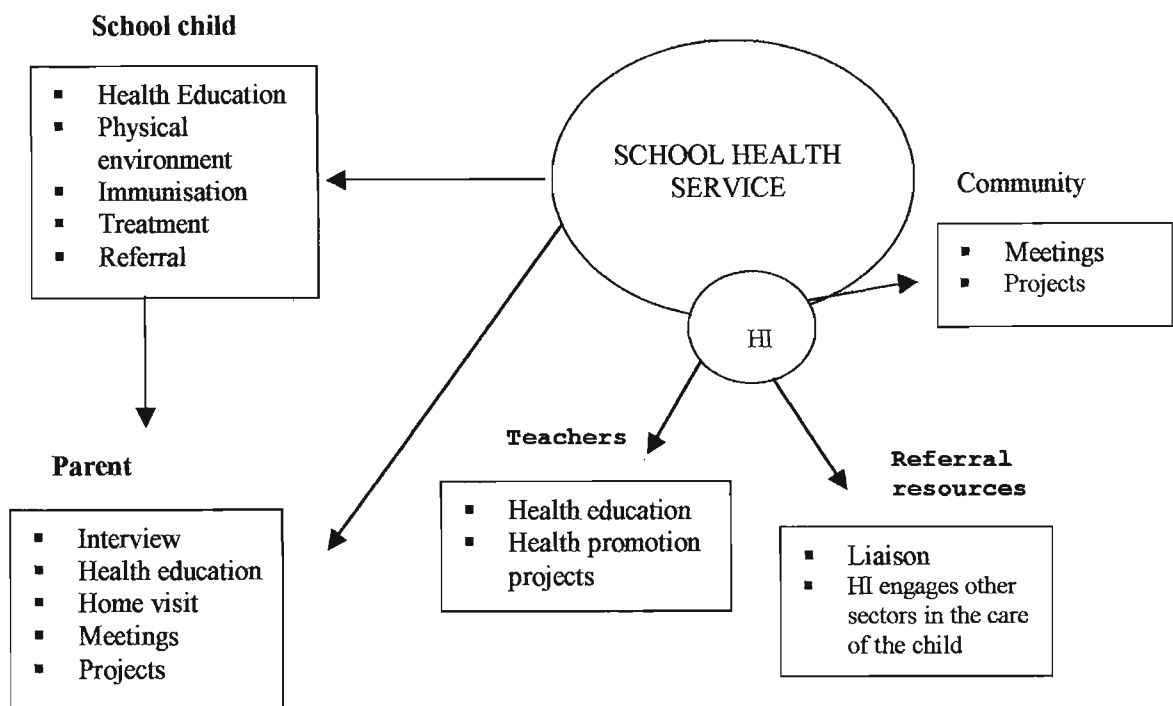


Figure 3: Contribution of HI to SHS

The WHO expert committee made recommendations for a comprehensive school health programme directed at prevention where possible, or treatment by efficient referral of children with common health problems.³⁴ It also noted that there was a need to develop policies, legislation and guidelines at country level to ensure the identification, allocation, mobilisation and co-ordination of resources at all levels of health care to support school health.³⁴ Research conducted by the World Bank, WHO, UNICEF and other organisations concluded that interventions in schools, to provide supplementary food and specific nutrients; to give drugs to prevent or treat infections; and to screen for hearing, vision, dental, psychological and other problems, can prove to be very high yielding investments.³⁵ The recommendations were made on the

basis that learning does not take place in isolation. There is a need to ensure that learners have adequate nutrition, health care, and general physical and emotional support in order for them to benefit from the education programme. It was also realised that schools were well placed to provide a cost-effective component of community health.

In a paper presented at an international meeting on the Health of the child at the eve of the Year 2000, Eisenbuerg (1996) stressed the need for public health measures aimed at improving child health including, among others, the school-based programmes.³⁵

The health and psychosocial well being of children and youth must be of fundamental value for all countries. CSHEP is therefore regarded as a priority. The size and accessibility of the school population, the children's receptivity to learning and the fact that adolescents are at an important stage of development when important health practices develop, make this population a priority for health promotion. Prevention strategies taught to children are usually taken home to their families and the community.²⁹

Nearly a quarter of people who are HIV/ AIDS positive are in their 20s. Many of them were infected as children. Health promoting schools together with other interventions can help to change the outlook. ³⁶ New South Wales in Australia has examined the role of the school nurse in providing knowledge

and skills required to help children protect themselves against AIDS. The basic premise is that schools have a primary role in providing AIDS education in schools.³⁶

A WHO/UNESCO report documented that some parents find it difficult to discuss sexuality with their children and are very happy if the school shares the responsibility.³⁶

In many countries adolescents are the fastest growing population of smokers. There is a need to strengthen prevention efforts and to help those who have started to quit smoking.³⁷

The WHO expert committee on the prevention of cardiovascular diseases (CVD) discussed the rationale for the prevention of CVD in children and the youth. The rationale was based on the major risk factors in adulthood which are determined by the behaviour pattern established during childhood and the belief that it may be effective to prevent the development of such behaviour than to attempt to reverse the situation.³⁷

It is documented that health problems of adolescents have grown enormously over the last few decades.⁸ The CSHEP has to include many components such as school counselling and guidance, healthful practices, physical education and health promotion for school staff and the community.⁸

Studies in Europe, America and other countries have shown that schools are a place where many injuries to children occur.¹⁶

A number of countries have adopted school-based parasite control programmes. Schools provide an important and convenient access point for mass treatment campaigns. Beneficial effects of school-based parasite control programmes have been well documented.³⁸

Hookworm infection is common in older children living in rural areas with poor sanitation. School health service is regarded as one of the components of the basic health service approaches to control hookworm related anaemia.³⁹

De Yong et al hold the views that Education Support Services (ESS) in South Africa {SA} have been marginalised.⁴⁰ They believe that these services have remained fragmented, not only because of the racial division during the apartheid era, but also because they were rendered from different departments - Health, Education and Welfare. Some of the services they mention are psychology, counselling, health, welfare, specialised education and vocational guidance. They believe that health, including physical and mental health services, should focus on preventive rather than curative measures; and that curative measures should remain a short-term objective, while preventive should be developed as a long-term objective. They advocate close co-ordination of ESS (but not complete unification) and that at

all levels there should be a co-ordinating body to ensure co-operation and compromise. They therefore believe in joint ownership of services.⁴¹

This would be a major step for SA at the moment because departments are still trying to unify different components from the previous government. It would work very well if all social development departments, namely Education, Health and Welfare, could work together at local authority level. They further recommended that school doctors, school nurses and school social workers should be employed by the Department of Education and that such professionals should have dual accountability to their original Departments as well as Education Department.⁴⁰ This would address the marginalisation of SHS, but it could affect career paths of health professionals involved, and lead to professional isolation.

2.1.4 Organisation Of SHS

A 1994 survey to measure availability of school health in Connecticut and Kentucky, in the US, in 500 schools that were part of "The School Of The 21st Century" revealed that school nursing constituted 75% of all SHS that were rendered. Of the schools involved in the survey, 33% did not have school nurses on site but relied on visiting school nurses. SHS was provided on a daily basis to 50% of schools, weekly to 32%, six-weekly to 4%, monthly to 11% and on a yearly basis to 3%. Only 59% of rural schools had access to the service compared to 63% of urban schools; while 25% had no access to school

health services and 33.3% lacked regular services. Most schools provided health screening for hearing and vision, 86% of schools used referral for further treatment of medical conditions.⁹ About 90% of respondents reported that children in their school had chronic medical conditions and respondents unanimously perceived a need for SHS. The recommendation of this study was that meeting children's health needs was critically important to promoting optimal growth and development.⁹

In 1974, the reorganisation of health services in the UK brought the school nurse under the wing of the National Health Service. Following this change, a series of government committees of the 1970s and 1980s gave testimony to the value of SHS. The Court Report of 1976 recommended that each school should appoint a nurse with special training and the Black report of 1978 emphasised the SHN's role in preventive and educational action for good health.³¹

In Bhutan, a state in Asia, the Departments of Health and Education render SHS through peripheral health facilities, community health teams and district hospitals. These services include health check-ups, eye care, nutrition and oral health services to schools.¹⁷

In Japan schools have full time school nurses based at each school.¹⁸

In Taiwan schools are required to hire at least 1 school nurse for 72 classes. School nurses are responsible for student screening, examination, health care and health education of the total school population. They often collaborate with public health nurses to provide immunisations.⁴²

2.1.5 Cost Of HI

The cost of seeing a child at the school was compared to sending the child to a family doctor outside the school in Middletown. A child going to a doctor outside school has to be accompanied by an adult, which increases the cost. The cost of physical examination at the school was \$11.25 compared to \$45 if examined by a private practitioner.⁴³

2.2 Process Of HI

Literature reviewed does not deal with HI independently from SHS. It was therefore unavoidable to present the two as an entity. However, the focus of the study is on HI and SHS was reviewed as the context or the vehicle through which HI is delivered. HI always happens as a component of SHS

Many schools and communities are turning to co-ordinated SHS programmes as a way of helping youth develop into healthy adults. The Centre for Disease Control and Prevention's (CDC) Division of Adolescent Health (CDCPAH), provides the eight-component model of SHS. This model consists of healthy

education, physical education, health services, nutrition services, health school environment, health promotion for staff and parents & communities involvement.⁴⁴ A survey in Pennsylvania revealed that 40% of the school nurses worked in rural areas. Physical examination of school children was primarily carried out by physicians.⁴⁵ The main function of the SHS was the control of communicable disease and detection of physical disabilities through screening and examination. The nurse-student ratio was 1:1500 in 1994. The survey noted that school health programmes in Pennsylvania face new and diverse concerns.

Since 1948, the aim of SHS in the UK was to provide services for prevention, treatment, cure and care regardless of the ability to pay. The service is free at point of delivery. Services include screening for early signs of disease and development surveillance.⁴⁷

In Britain the development of school health started with a service that had to provide for periodic routine medical inspections of all elementary school children.³¹ Over the years it developed to include secondary school children. It was the responsibility of the school nurse to detect and deal with poor hygiene, infestation with lice and malnutrition. In subsequent years it involved immunisation and health education because of the increase in the number of children. This resulted in the introduction of selective medical examinations.³¹

SHS by 1990 in the UK had been intact for the past 40 years, providing screening and development assessment. The service had not addressed behaviour-related health problems of the youth. Professionals working in schools were working towards shifting the focus to health promotion. The problem was that there was no special training for school doctors and nurses.

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In San Diego health services such as vision-screening administration of medication and special care procedures for learners with special health needs were mandated by law. Managed Care Organisations (MCO) are being reunited to support SHS in the US. They established that without case management, immunisation and health examination at schools, students were either absent or not well enough to learn optimally. The largest school district in San Diego performs first grade physical examination on primary school pupils.⁴⁶

The CDC in the US encourages the development of a comprehensive school health education, health services, school psychology, counselling, social services, physical education, food services, healthy school environment, health promotion and school and community efforts.⁴⁴

The objectives of the Swedish school health system were to follow the development of pupils and preserve and improve their mental health. It was found that children had an average of 2.8 visits to the school nurse in one

year. Only 20% did not have any contact with the school nurse in one year. 35% had undergone a major examination, 60% of the children had visited the SHN over and above the compulsory examination visit. A larger portion of school children consulted a school nurse more than a doctor. It was found that 43% of children examined had physical health problems.³²

A school-based adolescent programme to address the health of school and out-of-school youth was started in Namibia in 1996.¹² Personnel from the Departments of Health and Social Welfare visited schools to provide immunisation, perform physical examinations and educate children on health matters. There was no policy guideline.¹²

The Philippines has a comprehensive school health programme. Health services cover medical, dental and nursing services. There are special programmes that include surveys and interventions for some issues such as oral health, goitre prevention, de-worming and TB.³⁴

The Ministry of Health and Education in Syria provide SHS which covers medical examination at school entry, preventive and curative services including immunisation, weight and height check up, vision-screening and oral prevention services.³⁴

In the Maldives, SHS is a comprehensive school health programme aimed at providing preventive health care to children of school going age by providing medical check ups, early identification of any abnormalities, referrals and dissemination of appropriate health information. The service is provided from the Department of Education in collaboration with the department of Health. The SHS package includes medical check ups, training of teachers and school assistants, student health records, parent counselling and health education, establishing of school entry criteria and incorporating health issues into the curriculum.³⁴

In 1991, 80 out of 318 towns in Myanmar had an SHS programme. It provided a comprehensive child health service and consisted of preventive, curative and rehabilitative health care - including school health education, school sanitation, prevention and control of communicable disease, promotion of nutrition status, medical examination, early treatment of defects, referral to health institutions and training and research.³⁴

In Jerusalem, SHS is rendered as part of the activities of the Community Oriented Neighbourhood Health Centre or as part of the community-based PHC in schools. In addition to physical health, SHS was also interested in educational progress, personality development, and behaviour with regard to play, diet, sex, alcohol, smoking, drug addiction, family background and relations.⁴⁸

It is documented that health education to adolescents between the ages of 10 and 15 reduces the risk of cardiovascular disease. The study conducted in Norway between 1979 and 1981 showed that health education on nutrition, cigarette smoking, alcohol and physical activity was effective in preventing cardiovascular disease. SHS provided an opportunity for the team to give health education to pupils.⁴⁸

Unpublished reports from the Regional Health Organisation of South Africa (RHOSA) indicate that school nurses in Gazankulu, KwaNdebele, Bophuthatswana, Venda and the Transkei were involved with assessing children for physical defects, health education and treatment for common conditions. Home visits, parents' and teachers' meetings and follow-up visits were sometimes conducted. Children with health problems were referred for treatment and checking of vaccination status.⁴⁹

At schools, the nurses functioned as educator in class; counsellor for children with emotional and behavioural problems; referral person for children requiring further and on-going or advanced care; and as consultant on drug abuse and sexual concerns. The nurse's main function at school was disease detection and emergency care. Most school systems require nurses to have a baccalaureate degree in nursing and some require a certificate in school nursing. The application of growth and development theory, first aid skills, screening, assessment and immunisation procedures are common functions of

the nurse in the school setting. The nurse works with the school staff to incorporate health in the syllabus.⁵⁰

2.3 Output Of HI

The Soweto study found that dental cavities, at 60%, was the most prevalent condition. Of the children referred by the research team for treatment, only 23% went for treatment. Unfortunately the study did not report why the rest of the children referred did not go for treatment.²⁵

An epidemiological study in 1998 in Lusaka, Zambia found the prevalence of scalp ringworm infection to be 9.8% of school children between the ages of 5 and 18 years. The infection was diagnosed through direct microscopy while 29.0% had clinical signs of ringworm. This shows the value of conducting a physical examination of children in schools. The study however, concentrated on the direct microscopy findings and did not consider those diagnosed through clinical signs and through culture. The mean age affected was 10.6 years. This has direct implications for children in a primary school: they must be exposed to HI in order to screen for health problems.⁵¹

The National Health Interview Survey (NHIS) conducted in the US found that about 16.8% of US children who were 17 years and below had at least one developmental disability.⁵²

2.3.1 Role Of The School Health Nurse (SHN)

Historically the school nurse was expected to assess the child's physical, psychological and neurological state; to detect those problems that can affect the child's behaviour; and treat minor ailments.⁶ The main aim of SHS in USA in 1966 was to enhance educability. In 1976 there were 20000 nurses who were members of the SHT in the US. The SHT consisted of a multidisciplinary team. The target groups included teachers and parents.^{5,50&}

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Health promotion, including history-taking and physical assessment, remains the main focal point for nursing intervention. Screening for defects and health problems included vision, hearing, dentition, nutrition, sex characteristics, social adjustments, scoliosis, tuberculosis, common problems, venereal disease and disabilities.⁵³

The role of the early school nurse was public health and wellness oriented. The school nurses' clients included the child, family, the school personnel and the community.¹

Over the years, this role diminished in scope and value. It tended to emphasise episodic care and record-keeping at the expense of preventive care. However, the role differed from country to country.⁵³

2.4 Outcome Of HI

2.4 1 Views Of Teachers About HI/SHS

In a survey of the views of school heads and guidance teachers conducted at Fife in Scotland in 1995, teachers thought that the school nurse services such as medical check-ups, outbreak control, advice, screening, testing, advice on child abuse, speech therapy, head louse control and management of long term medical conditions were very important aspects of SHS.⁵⁴

2.5 Summary Literature Review

Table 2: Summary of SHS situations in different countries

ASPECTS	DEVELOPED COUNTRIES	DEVELOPING COUNTRIES
Resources	<p>In the US, 50% of school children have access to SHS every day. ⁹ The nurse pupil ratio in 1994 was 1:1500</p> <p>The US has school-based clinics as well as visiting teams. ¹⁹</p> <p>In Taiwan school boards employ a nurse per 72 classes. ⁴²</p> <p>In Japan school nurses are based at schools</p>	<p>School pupils in SA have access to SHS once in 2 to 3 years. At the most it is once per year. ²⁵</p> <p>Depends on visiting teams such as in SA, Bhutan, India, Namibia and Zambia. ^{12,17&21}</p> <p>Teams are allocated to a number of schools rather than classes or pupils</p> <p>School nurses visit</p>
Distribution	More urban schools (63%) have access to SHS than rural schools. ⁹	Similar
Policy	Clear SHS policies, such as in the UK and US. ³⁰	Poorly developed or no policy on SHS such as in SA
Payment for SHS	Departments of Health and Education, jointly or separately, or the local school boards.	Departments of Health or Education.
Approaches to SHS	<p>Comprehensive SHS as well as Health Promotion</p> <p>Conduct HI as part of comprehensive SHS</p>	Similar ^{16,17,36,44 &47}
Common health problems	Developmental disabilities, substance abuse and other infections	Infections and poverty related conditions ^{33, 35}

In summary, it was found that countries reviewed had varying approaches to SHS. Where they have a common approach, they tended to emphasise different aspects.

The WHO Information series on SHS states that any evaluation of SHS should attempt to answer the following questions; “Does it provide counselling?” “Does it provide adolescent development programmes?” “Does it refer students to appropriate non-school based care?”; “Is it rendered by well trained professionals?”⁵⁵ Evaluation aims at finding out how the programme affected the population for which it was intended and the behaviour of the target population. The success and failure of programmes can often be gauged by measuring access of target population, how many were reached, how often and what was done. Methods used depend on many factors, for example size of the project, time available, funds, other resources and the specific aspects to be measured. Quantitative and qualitative methods such as surveys, individual interviews, focus groups, observational studies and in-depth studies of cultural beliefs and practices can be conducted to gather data and to measure the effectiveness of programmes.⁴⁰

Some of the aspects mentioned above such as the influence on the behaviour of the target population, coverage, frequency and access were addressed in this study.

The overall impression gained from literature was that the need exists for school-based health programmes and that many countries have developed a school health service that suits their needs.

This thesis is going to focus on HI and the description of SHS is provided for the context.

CHAPTER 3: METHOD

3.1 Study Design

This was a descriptive, cross sectional study, in which the Systems approach model was utilised to analyse the input, process, output and outcomes of HI as a component of School Health Services (SHS).²² The aim was to analyse the health situation of children from 21 schools visited by the school nurse and compare it with the situation of children from 5 schools that were not visited. Data was collected through mailed questionnaires, interviews, meetings and a review of the records as outlined below.

3.2 Study Population And Sample

The target study population in KwaZulu-Natal consisted of 4, 007 primary schools, 1, 847, 440 pupils in the 8 regions of the Department of Health and 95 SHS teams.

All 717 Government primary schools in Region B (Indlovu) were part of the study population. There were 221 schools from ex DET, 49 from ex HOD, 11 from ex HOR and 412 from ex KwaZulu.

The sampling frame was drawn from a list of schools (from the Department of Education). In order to identify schools visited or not visited in 1995, a list

was obtained from SHS teams in Region B. A list of children found to have defects at the last Health Inspection in 1995 was obtained from School nurses' files. A list of pupils in Std. 5 was obtained from the Principal's office in the case of schools that had not been visited, while a list of teams was obtained from the SHS co-ordinators in the province. There was an intention to compare schools visited and schools not visited.

3.3 Sampling Techniques

The non - random quota technique was used to choose one region from eight regions. The region sampled was chosen because it had all the desired characteristics of the population under study; it had all previous health services, rural and urban areas.

Random /Probability sample: a simple random sample of schools and pupils was selected. A random number table was used to select the sample. A random sample of 26 schools was generated; 21 had been visited by the SHN and 5 not visited. The size of the sample was determined in consultation with the statistician. The availability of funds, time limits and human resources were taken into consideration. The minimum sample size of 260 pupils was increased to 312 pupils to cater for non-responses. The aim was to interview 10 children per school, but 2 more children were selected in case some children were absent or had left the school. These 12 children were selected

from each school - from the list of children with defects, and from STD. 5 in schools not visited.

Parents of the children in the sample were invited to participate in the study. SHS teams in the sample region were all included in the study.

Stratified sampling was used to ensure geographic and previous ex health department representation. The strata used for geographical distribution were rural and urban. For previous health authorities NPA, KZG and NH were used.

3.4 Inclusion And Exclusion Criteria

All children found to have health problems during their last encounter with the school nurse were included in the sample frame.

Children who did not have health problems during the last encounter with the school nurse were excluded.

From the schools not visited, only std. 5 (grade 7) pupils were included in the sample frame, the reason being to include those children that should have been exposed to HI but were not. This was done in order to describe the health situation of children who were about to finish their primary school

without any involvement in HI. In this way the researcher hoped to clearly demonstrate the result of being exposed or not being exposed to HI. It is however, noted that it would have been better to sample from all the classes rather than concentrate on std. 5 only. To make up for this error, during analysis only std. 5 results were compared between those who were involved in HI and those who were not involved.

3.5 Data Sources

A) For the schools visited, children who were found to have health problems at the last health inspection and their parents were involved in the study. The school nurse's records were used as the source for children who had been referred.

B) Only std. 5 pupils and their parents were part of the population in schools that had not been visited by school nurses for the past seven years.

C) All SHS teams in Region B for the target population and coverage statistics as well as the structure and organisation of HI and SHS.

D) Three teams were the data source for costing HI and describing the process of HI.

3.6 Definition Of Variables

Variables were selected according to the systems approach model of inputs, processes, outputs and outcomes.

3.6.1 Input Variables

Structure: This refers to numbers of schools to be visited, number of teams, categories of staff in teams, supervision and target classes.

Resources: This refers to nurse/pupil ratios, vehicles, equipment, stationery and medication.

Policy: This refers to a document from the DOH stating the strategic objectives of the service as well as indicating the relevant guidelines to ensure effectiveness.

Organisation: This refers to the formal relationships that HI had with other services in the DOH.

Costing: This refers to the overall cost implications of delivering the service, as represented by the cost of consulting each child during HI. It includes all the overhead costs such as personnel, transport, equipment, medication and office accommodation.

3.6.2 Process Variables

This refers to all the procedures and interactions that are involved in HI: at the preparatory visit, HI visit and follow-up visit.

3.6.3 Output Variables

This refers to the number of children seen at HI; health problems identified through HI; children given referral letters; health education or advice given; and HI coverage per each previous health authority.

3.6.4 Outcome Variables

These were the number of children who went for treatment on referral, the number of children who did not go for treatment as referred, the reasons for not going for treatment, children's subjective feelings in relation to health problems before and after HI and comments by parents on HI.

3.7 Instruments

3.7.1 Input Data Instruments

A questionnaire was developed and utilised to collect input data. It was mailed out to SHNs to fill in and return to the researcher. It recorded data on SHS team base; the number of teams in 1995; number of schools allocated; number of rural, urban and peri-urban schools; the numbers of schools visited; and those schools not visited. It also required numbers of children

seen on HI, pupils found to have health defects and those referred for further treatment. This data was utilised to calculate coverage. (Annexure C)

For costing of HI, a questionnaire was developed and sent out to SHS teams to fill in and return to sender. The questionnaire required the SHN to review records of expenditure for the 1997 financial year and complete the questionnaire to provide expenditure on personnel, equipment, vehicles, stationery, medical supplies, telephones, electricity, water and rent. Head office personnel were requested to provide data on salaries. (Annexure D)

The unit SHS consultation cost of three teams, one from NPA, NH and KZ previous health departments was estimated. The finance section at head office was requested to provide the school health budget. Head Office was not able to supply the information up to the time of writing the report. The official who was approached promised to provide the information on the last SHS allocation before the service ceased to be a budget objective and was integrated with PHC.

The school health service's regional coordinator who controlled school health services in region B in 1997 provided the estimate of the budget. She was not able to supply the specific budget because, according to her, she was never given the specific budget; she worked on assumptions based on her estimates.

Due to the fact that SHS teams did not know the allocated budgets, costing was based on the records of expenditure.

Teams were requested to provide a list of names of all team members and their salary numbers. The Personnel department was requested to supply copies of pay-slips for 1997. Pay slips reflected such information as annual salary notch, allowances and subsidies. Teams were asked to indicate if there was any time during the year when they were not doing SHS work. All three teams had done SHS work for the whole year. The cost of supervision was not included.

Teams were requested to supply the total distance traveled in 1997. Kilometers traveled were multiplied by the transport maintenance flat rate of 69c per kilometer. The estimated cost of the vehicle used was added to the estimated running and maintenance cost. One team knew the actual cost of transport for the year of review.

This section included equipment, stationery, rent, telephone, maintenance, water, medications and expendables. Calculations were based on records such as requisition books, forms and expenditure statements.

3.7.2 Process Data

A checklist was developed and used for the process of HI. It had five sections. Section A had twelve points. This section covered the demographic characteristics as well as the target and output statistics. Section B looked at the follow-up visits. Section C dealt with the process of HI, including parent interviews, meetings and home visits. Section D covered the referral services. Section E looked at the categories of staff involved in HI. (Annexure B)

3.7.3 Output And Outcome Data

The interview guide which was developed for use in the study was pre-tested in region D using a group of pupils that had the same characteristics as the sample, but who were not part of the study - it was found to be consistent in obtaining expected responses. A pilot study to test the questionnaire was conducted at a school that was not going to be part of the sample. During the study consistency was well demonstrated in the responses that were given by participants. The research assistant who participated in field data collection was trained in interviewing techniques.

The interview guide had four sections and only three were used. Section A measured demographic characteristics of respondents. Section B dealt with referral for health care. Pupils were asked if they were given a referral letter and whether they were told what to do with letter. If pupils went for treatment they were asked to say what happened at the referral point. Those pupils who did not go for treatment were asked to say why they did not go.

Section C was a parents' interview guide. It looked at the parents' demographic characteristics; whether or not parents received the referral letter; and if yes what was done about it. The aim of this section was to verify what the children said and to see whether HI had any influence on the parents' decision to treat or not to treat a child. (Annexure A)

There was no instrument; instead a set of the following questions were used:

Name of school

Date of the last HI

Number of children seen at the last HI

Children found to have health defects at the last HI

Total enrolment

3.8 Sample Bias

Some children had left the school or were absent on the day of the interview.

While the sample was not proportionate to the number of schools for each previous health authority, it was however representative of all the above.

Whilst it was the aim of the study to interview parents or guardians of all sample children, it was not possible because some were at work during the day.

3.9 Response Rate

A total of 25 schools out of 26 (96%) agreed to participate in the study. This reduced the number of schools not visited to four.

A total of 212 children were interviewed out of a target number of 312 (81.5%). 12 other children who were not in the sample were interviewed concerning their problems, on request by teachers. However, their responses were not included in the analysis. 129 parents (49.6%) were interviewed - 98 from schools that were visited for HI, 31 from schools that were not visited and 13 SHS teams

For costing, three teams were randomly selected to ensure representation of different health authorities which were running SHS, namely Natal Provincial Administration (NPA), National Health (NH) and KwaZulu (KZ). A 100% response was achieved after follow-up.

3.10 Ethical Issues

The Ethics Committee of the Faculty of Medicine, University of Natal, approved the study. A letter was written to parents to request permission to interview the parent and the child. The letter was written in the child's mother language. Parents' right to refuse to participate or to withdraw from participation was clearly stated. It was stressed that refusal to participate

would not jeopardise the child in any way. Permission to visit institutions, peruse records and talk to staff was obtained from the Departments of Education and Health. All Principals in the sample were written a letter to request their permission to visit schools. All except one agreed to participate in the study. Participants were informed that no reference was going to be made to their names in the report and that personal information given was going to be kept confidential. (see Appendices)

Interviews were conducted in the language of the interviewee. These were Zulu, English and Afrikaans. During the interview, privacy was ensured.

Dates and times for holding interviews were negotiated with participants to ensure that their daily business was not unduly interrupted. For example, if a parent was in a hurry, it was negotiated with others to interview him or her first. Parents, children and staff who participated were thanked for their contribution.

3.11 Research Team

The team consisted of the researcher and the research assistant. The research assistant was involved during field data collection and was with the project for only six months. She was trained to conduct interviews. She helped with data capturing during the time that she was with the project.

3.12 Data Collection

Twenty-six primary schools were visited for interviews in Region B, Indlovu Region. Of the schools visited one was from ex Department of Education and Training (DET); two were from ex House of Delegates (HOD); one was from ex House of Representatives (HOR); two were from ex House of Assembly (HOA); and twenty were from ex KZ Department of Education and Culture.

The research team visited sample schools at least twice. The first visit was to introduce the project, to ask for permission, to select the children, to negotiate the date and to leave appointment letters for parents. During the second visit interviews were conducted. One of the two white schools was an Afrikaans speaking school and special arrangements were made to get an Afrikaans-speaking interviewer. This interviewer was competent in both English and Afrikaans.

The researcher and the research assistant conducted the interviews.

Interviews were held in a classroom, staff-room or school hall. Parents and children waiting to be interviewed waited outside the interview room either in another room or outside on the verandah or in the corridor. A wide physical space was kept between the 2 interviewers in the room to ensure complete privacy. If the research assistant had a problem, she referred it to the researcher. Interviews were recorded in the interview guide as well as being audiotape recorded. Children were interviewed first, and then parents.

This sequence allowed the research team to verify from the parent what the child had said. Approximately 7 to 8 minutes were spent interviewing 1 person. If a parent said anything outside of what was asked, that was noted for further discussion after the formal interview. The interviewees' home language was used. Where the parent was unable to come to the school, a telephone interview was conducted. A total of nine telephone interviews were conducted.

It was found that after the formal interview, some parents wanted to discuss problems with the researcher, such as a child's progress in class.

Before individual interviews a briefing session was held with the whole group. However, briefing of parents was done separately from that of children.

3.13 Analysis Of Data

Manual and computer analysis using Epi-Info 6 was undertaken. Data from the input questionnaires and the checklist was analysed manually. Calculations were done using a calculator. Data collected through the interview guide was captured in Epi-Info. A questionnaire was developed in the programme and used to capture all the 212 responses. Before analysis, entries were checked against questionnaires to ensure correctness. Analysis in the same programme was utilised to produce frequency tables. Word Perfect presentation and Quattro- Pro programmes were utilised to

produce figures. For open-ended questions, responses were grouped according to themes developed. Themes were weighted according to frequencies and presented as tables. Data collected at meetings was analysed according to the demographic characteristics and/or strata. For example, the availability or non-availability of SHS budget allocation was looked at in relation to each team.

Table 3: Summary Of Methods

Objective	Variable	Sample size	Instrument	Data source	Method of data collection
To describe inputs or structure of HI	Structure of HI, organisation, policy, target population, SHS teams, vehicles, nurse-pupil ratios, equipment, stationery, medication, the profile of schools involved in the analysis and cost of HI.	26 schools, 13 SHS teams, 3 SHS coordinators and 3 teams for costing.	Questionnaire, meetings and workshops.	School nurses, teachers and personal observation by the researcher.	Two mailed questionnaires that were self administered by the SHNs, as well as notes taken at 5 meetings and 2 workshops.
To describe the process of HI.	Preparatory visit, HI visit and follow-up visit.	Three SHS teams.	Check list	SHS team HI visits	The researcher visited teams and observed them as they were conducting HI.
To measure the output of HI.	HI coverage, health problems detected through HI, advice given by the SHN during HI and number of pupils referred for treatment following HI.	13 SHS teams, 312 pupils, and parents.	Questionnaire and an interview guide	School nurses, pupils and parents	SHN self administered questionnaire and interviews
To measure the outcome of HI.	No. of children who went for treatment following referral, number of children who did not go for treatment following referral, where children went for treatment, what happened at the place of treatment, why children did not go for treatment and comments of parents and adults interviewed on HI.	312 pupils and parents.	Interview guide	Pupils and parents.	Interviews by the researcher and the research assistant.

CHAPTER 4: RESULTS

The results will be presented according to the Engelkes' model of inputs, processes, outputs and outcomes,²²

4.1 Demographic Characteristics Of Pupils & Parents

4.1.1 Pupils

Of the 212 children interviewed, 156 {115(54%) were females, 97(46%) were males)} had been involved in HI and 56 had not. All primary school classes were involved from SSA to std. 5. Most of the children were in std. 5 (30.66%), followed by SSA with 16.0%. (Figure 4) Ages ranged from 5 to 18 years. The median age was 11 years. (Figure 5)

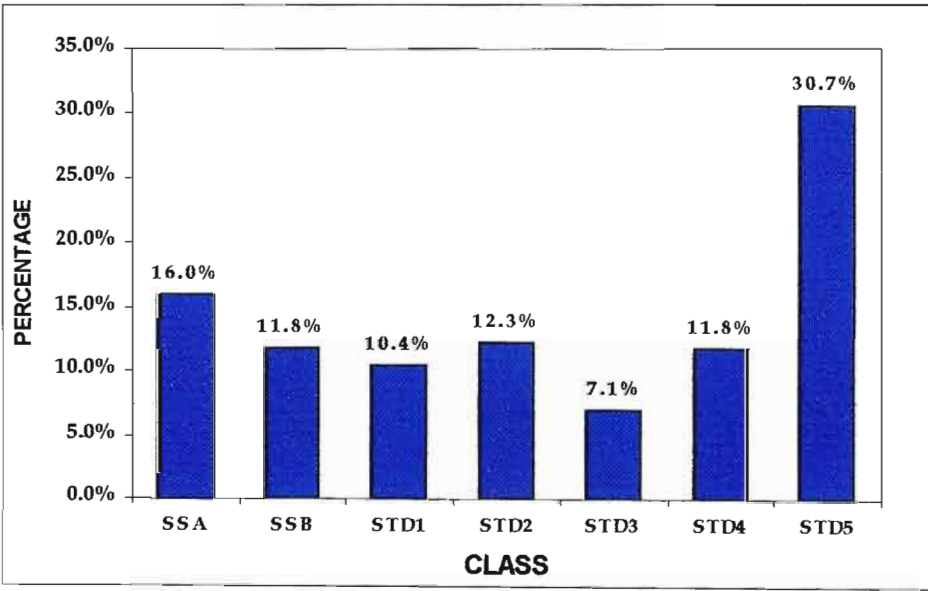


Figure 4: Distribution Of Pupils Per Class (N = 212)



Figure 5: Age Distribution Of Pupils (N=212)

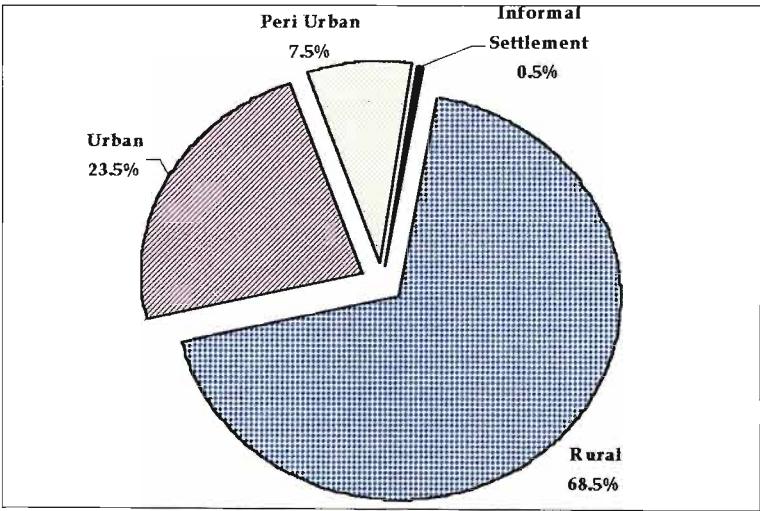


Figure 6: Residential Area Of Pupils (N = 212)

Of all children interviewed, 68.5% were from rural areas, 23.5% from urban areas, 7.5% from peri-urban areas and only 0.5% from informal settlement areas (Figure 3). Of all pupils interviewed, 66.9% had undergone HI.

4.1.2 Parents/Guardians

Of the 129 adults interviewed, 111 (86%) were females, 80(62%) were married, 39 (30%) were single, 9 (7%), were widowed and 1 (1%) was divorced. A 100% parent turn up was seen in two schools only, one ex HOD and one ex KZ school. About 60% of guardians interviewed were biological parents, 10% were either aunt or grandmother, while other adults were grandparent, guardian, neighbour, relative, in-law, sister, brother and uncle. Out of 129 parents, 68(52.7%) were parents of children who were given a referral letter at the last HI.

4.1.2.1 Occupation of parents/guardians:

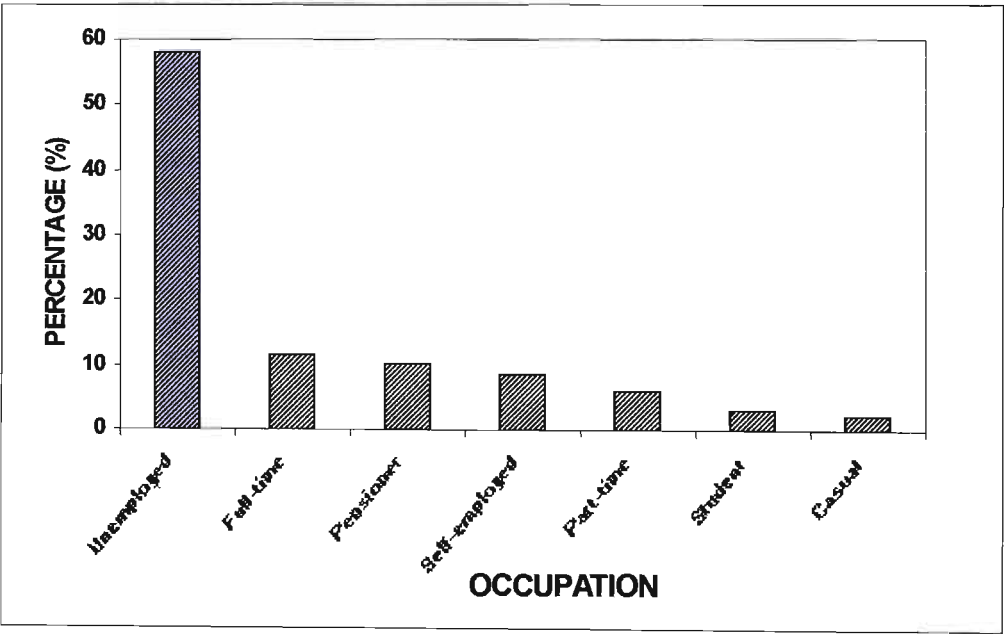


Figure 7: Occupation Of Adults Interviewed (N =129)

The majority of parents interviewed were unemployed 75(58%), followed by parents who were employed full time (12%), parents who were on pension (10%), self employed (9%), part time employed (6%), student (3%) and casually employed at (2%).

4.2 Input Results

4.2.1 Structure Of HI

4.2.1.1 Profile of schools involved in the study

Only 47.8% of schools had solid structures, 52.2% had weak or very weak structures, and about 26% of buildings needed repairs. One school visited did not have a proper structure, but was using a corrugated iron shack. The number of classrooms ranged from 1 to 25. There were 137 to 1114 pupils per school with 4 to 25 teachers. About 47.8% of the schools had telephones, 43.5% had electricity and 78.3% had water in the yard or within easy access. About 14% did not have toilets.

4.2.1.2. Teams

There were 13 SHS teams responsible for delivering HI, with a total of 42 team members, 717 primary schools to be visited for HI, and 366491 pupils in the sample region. Ex NPA teams were composed of 1 professional nurse, 1 staff nurse and 1 SASO. Ex NH teams were composed of a professional nurse only or a professional nurse and an enrolled nurse. Ex KZ teams were composed

of 1 professional nurse, an enrolled nurse and 4 SASOs or enrolled nursing assistants.

4.2.1.3 Supervision

In all eight regions, an SHS co-ordinator was identified to facilitate the integration of the service into the District Health System (DHS). Ex KZ SHS community health services matrons supervised teams or professional nurses in charge of clinics. In most cases the nurse in charge of the clinic or the community health services matron had so many other duties that there was no time for SHS, or the supervisors had no interest in SHS.

4.2.1.4 Target classes

In 1995, since each of the previous ex authorities had their own target classes, there was no standard target population for the province. The following classes were targeted by each of the ex authorities:

Ex NPA: Grades 2, 4 and 7;

Ex NH: Grades 1, 6 and 9;

Ex KZ: Grades 1 and 6

4.2.2 Resources For HI

4.2.2.1 School Health Nurse/pupil ratio

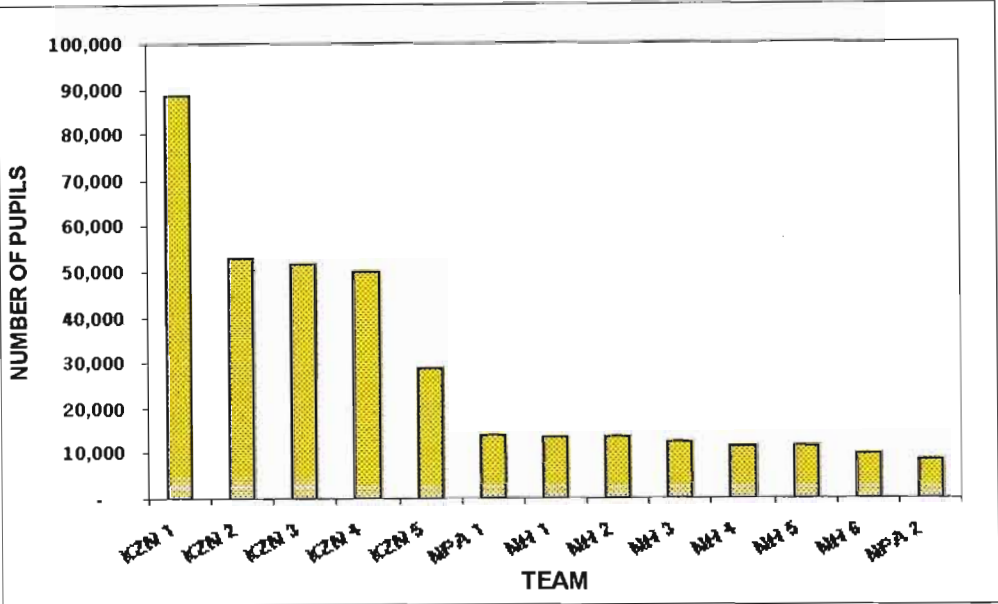


Figure 8: SHT/Pupil Ratio For Region B, KZN

4.2.2.2 Equipment

Basic equipment included gallipots, receivers, dissecting forceps, scissors, measuring tapes/sticks, scales, eye test charts (Snellen's and 'E' charts), wooden spoons, medicine measuring glasses, dressings, stethoscopes, diagnostic sets and, in some cases haemoglobin metres, baumanometers and audiometers.

4.2.2.3 Vehicles

With the exception of two SHS teams from ex KZ, teams had allocated vehicles. The control of vehicles in ex NH and ex NPA was the responsibility

of the team. In ex KZ the team or the transport officer of the institution controlled SHS transport where the team was based.

4.2.2.4 Stationery

School nurses used forms and cards to record their findings and in communication with teachers, parents and other role players. These differed from health authority to health authority. The forms used included:

- school location map request form;
- school enrolment request form;
- appointment letter to the principal;
- parent notification form. This was also a questionnaire on the child's medical history and child examination card. It was used as a carry card on which HI findings were recorded. The child was supposed to transfer with the card from school to school.
- routine health inspection form;
- defect list form - used to record findings at HI. The defect list form had provision for follow-up findings;
- statistics or monthly/quarterly/half yearly /annual report forms - submitted according to the instructions of the supervisor;
- weekly reports of work done;
- Other school health forms were parent interview forms; notification forms for communicable diseases; referral letter forms; means assessment forms for indigent services or applications for medical assistance; exclusion

forms for communicable diseases; HI report forms to the headmaster; and the school survey forms used to look at the safety of the environment and make recommendations to the local environmental officer.

Difference In Forms Used By HI.

Ex NPA individual child health cards were used for the target classes only. The Routine HI form was used for selected children. The card had space for particulars, findings and treatment. The defect list was a summary of information on the cards and the routine health inspection form. The defects count form listed defects only – names of children were omitted.

The ex KZ form used for routine HI was the same as the ex NPA. The only difference was that the NPA form had space for recording the treatment given, which the ex KZ form did not have. The routine HI form was used for target and selected pupils. The defect form was used to summarise findings.

The confidential report with names of children with defects was used for follow-up care. A weekly report and a quarterly report with statistics and other activities that the school nurse was involved with, were submitted to the supervisors.

Ex NH had a parent questionnaire that was sent to parents to inform them about the HI visit and to ask questions about the child's medical history.

Cards were used for the target population. A list of names on a foolscap paper was used for selected children. Initially the card was used for the selected children as well, but nurses stopped because they regarded that as a waste since only a small part could be used and sometimes only once, while the card had sufficient space to be used throughout the child's primary schooling. The defect list with names of children was used for follow-up care. A monthly report with statistics and defects was submitted to the supervisor.

4.2.2.5 Medication

Not all teams carried medication. The ex NPA and some KZ teams carried treatment to schools for minor ailments. While it was policy to carry treatment to schools in ex NPA, in ex KZ this was an institutional decision taken by the medical superintendent. The NPA teams had a standard list of medicines that they were allowed to carry.

HI at schools was conducted either in a classroom, school hall, teachers' staff room or in a special room. The state of schools differed from school to school. In 24 schools in the sample, there was a proper building and in one school the building was just a shack for accommodation. This school was a lower primary school with four classes housed in the one shack, while another was accommodated in a neighbour's house. The rest of the classes were taught outside. On the day of the interview it rained, so interviews were conducted in the vehicle.

4.2.3 Policy

There were three different operational policies for SHS: the previous NH policy, NPA policy and KZ policy. All policies indicated the objectives of the service, the applicable legislation and target classes.

4.2.4 Organisation

SHS was in the process of transformation. It was still fragmented along racial lines. SHS in public schools were under the Department of Health. Private schools contracted or employed nurses to render services in their institutions. In special schools, employees from the Departments of Health and Education rendered SHS. In ex NH (which consisted of ex HOA, ex HOD and ex HOR), services were vertically organised, with one control office for the entire province. In ex NPA and ex KZ services were decentralised to districts, but for ex NPA it was still based in towns and cities and not in rural areas. The ex KZ services were based in hospitals and clinics. NH and NPA teams were accommodated in government or hired offices and were not attached to hospitals.

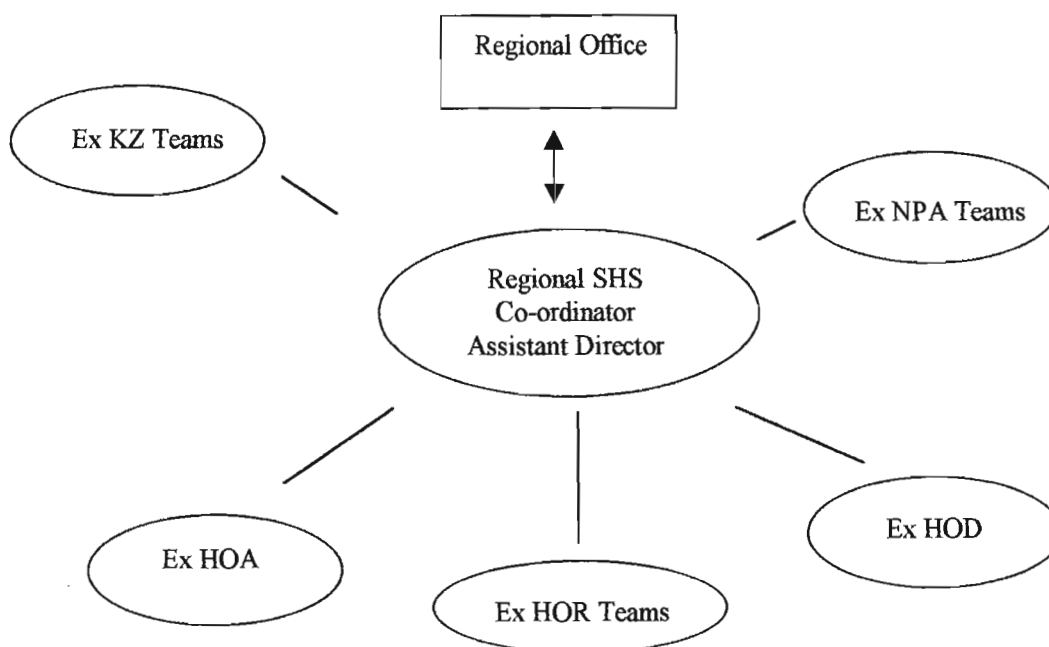


Figure 9: Organisational Relations Of SHS In Region B

Source: Meetings and workshops with SHS coordinators and SHS staff.

Table 4: Summary Of Structure And Organisation Of SHS in KZN 1996

ASPECT	NH	NPA	KZ
ORGANISATION	Vertically controlled and based at towns and cities.	Decentralised into towns and cities, linked to provincial control through PHC supervisors	Decentralised and controlled by hospitals in each magisterial district. No vertical control but had SHS co-ordinator.
LINKS WITH HOSPITAL	No formal link except referral	No formal link except referral and ordering of medications	Based at hospitals and clinics.
BUDGET	Provincially controlled	Provincially controlled with input from the regional PHC	SHS budget was together with hospital budget
SUPERVISION OF SHS TEAMS	SHS hierarchy linked to the provincial NH	PHC matrons linked to the provincial NPA	Community matrons linked to the base institution
SHS TEAM	5 dedicated SHS teams	2 dedicated SHS teams	6 dedicated SHS teams
SHS POLICY	NH policy	NPA policy	KZ policy
TARGET POPULATION	Grades 1,6 and 9	Grades 2,4 and 7	Grades 1 and 6
VEHICLES	5	2	4

Source: Meetings and workshops with SHS coordinators and staff

The service was rendered from three health authorities namely NH for "Whites", "Indians" and "Coloureds"; NPA for "Blacks" in trust and farm areas; and KZ for "Blacks" in homeland areas.

The organisation of the service differed across the health authorities in the province. In the ex NH, SHS was vertically organised, which means it was provincially controlled. The ex NPA included SHS with Primary Health Care Services (PHC) which was mainly based in towns. In the ex KZ, SHS was rendered through hospitals, clinics and other institutions and was decentralised into all magisterial districts. As a result of these differences in organisation, there were also differences in the delivery of SHS. Some of the major differences will be highlighted in the discussion.

4.2.5 Estimated Cost Of HI Consultation

The cost was calculated based on activities undertaken by teams. (Table 5 &6)

Table 5: SHS Attendances Per Team (1997)

TYPE OF ATTENDANCE	NPA	%	NH	%	KZ	%
Pupils screened	2112	(8.8)	14333	(56.2)	6897	(17.2)
Pupils examined	2031	(8.5)	10265	(40.2)	3162	(7.9)
Pupils treated	1727	(7.2)	130	(0.5)	0	(0)
Parents interviewed	86	(0.3)	134	(0.5)	108	(0.2)
Home visits	51	(0.2)	84	(0.3)	49	(0.1)
Follow-up visits	1481	(6.2)	520	(2.0)	0	(0)
Pupils immunized	16297	(68.4)	0	(0)	29713	(74.3)
Parents meetings	14	(0.05)	35	(0.1)	42	(0.1)
Total	23799		25501		39971	

Table 6: Summary Of The Cost Per Team

COST ITEM	NPA	%	NH	%	KZ	%
Personnel	R144382.44	(62.9)	R156598.32	(24.8)	R136986.24	(66.9)
Transport	R 59929.10	(26.1)	R334626.13	(53.1)	R 64153.28	(31.3)
Equipment	R 1707.00	(0.7)	R 1000.00	(0.15)	R 935.94	(0.45)
Stationery	R 647.00	(0.2)	R 5000.00	(0.79)	R 200.15	(0.09)
Telephone	R 52.00	(0.02)	R 330.00	(0.05)	R 6.27	(0.003)
Furniture	R 3628.00	(1.5)	R 0.00	(0)	R 875.00	(0.42)
Maintenance services	R 15600.00	(6.8)	R129922.00	(20.6)	R 0.00	(0)
Expendables	R 624.19	(0.2)	R 200.00	(0.03)	0	(0)
Surgical sundries	R 297.00	(0.1)	R 500.00	(0.07)	R 324.00	(0.15)
Medication	R 2319.80	(1.0)	R 1000.00	(0.15)	R 471.60	(0.23)
Total	R229186.43		R629176.45		R204573.21	

Maintenance services referred to rent, electricity, water, and other house keeping services

The cost per consultation (total cost divided by total consultations) per team was, NH R24.67, NPA R9.63 and KZ R5.11. The average SHS consultation cost was R13.13.

4.3 Processes For HI

Table 7: SHS Process Components By Health Authority

COMPONENT	NH	NPA	KZ
PREPARATORY VISIT FOR HI	Making of appointments Sending parents' a questionnaire on the health history of the child Writing of the list of children to be seen	Same Not done Same	Same Not done Same
OBTAINING PARENTAL CONSENT FOR HI	Done	Not done	Not done
HEALTH INSPECTION VISIT	Health talks Screening for poor eye sight, dental caries and postural defects Hearing tests using an audiometer, Physical examination of target children Examination of learners who have health problems, who are not in the target group Parent interviews if necessary Parents meetings Teachers meetings Community meetings Home visits if necessary Referral of children with problems Proof of immunisation required at school entry No treatment No immunisation No inspection of school premises	Same Same Not done Same Same Same Same Same Same Same Same Same Not compulsory Treatment for health problems Sometimes Noted poor environmental hygienic and referred to EHOs	Same Same Not done Same Same Same Same Same Same Same Same Not compulsory No treatment Immunisation of grade 1 children Same as NPA
FOLLOW-UP VISIT	Those receiving treatment/monitoring	Same	Same

The process for HI included a preparatory visit, the health inspection visit and the follow-up visit.

4.3.1 The Preparatory Visit

School nurses planned their work beforehand and produced a programme, indicating names of schools to be visited, dates of visits and the purpose of the visit. The programme covered a school term, which was either three months or six months. In rural areas, the plan was prepared in such a way that schools that were not accessible during the rainy season were visited during the dry season.

Schools were informed beforehand that the school nurse would be visiting. The appointment was either posted or delivered. The purpose was to request the necessary co-operation by the school. In the case of ex NH the appointment letter was sent with a health questionnaire to parents. The questionnaire had a section that requested permission to examine the child. In the case of ex KZ, the appointment letter was sent with forms and guidelines for teachers to write a list of names of children in the target class and identify children with health problems.

For this visit the team spent a short time at the school so as to visit more than one school. Lack of communication infrastructure in rural areas compelled teams to conduct this preparatory visit.

4.3.2 The Health Inspection Visit

On arrival at the school, the nurse reported to the Head master or Principal.

Activities for HI included preparation of the classroom to ensure privacy by shading windows. Seating was arranged so that learners would face away from the child that was being examined. Group health talks were given before HI. Learners were given orientation on the procedure to be followed. Screening for weight, height, vision, dental caries and scoliosis was done. Ex NH also screened for hearing in suspected cases using an audiometer. Teams for "Blacks" did not have equipment to properly screen for hearing. They used a "whispering test" and tried to avoid lip reading, a tuning fork and crushing papers behind the child, asking him or her to indicate if he or she had heard anything. They also relied on history-taking. Examination from head to toe, for personal hygiene and the hygiene of clothing, was conducted for the target classes. Polio drops and diphtheria tetanus vaccines were given by NPA and KZ teams to school beginners. All SHS teams were involved in immunisation campaigns for the under-5 children and the school-aged children as a separate exercise from HI. Parent interviews for specific problems were conducted. Home visits and parent meetings were also conducted. Checking of safety of the school environment was still done by ex NPA, but others no longer did it because it was left to the environmental officers.

Records included an appointment letter to the Principal, questionnaires to parents, medical examination cards, HI records, summary of defects, referral letters, interview notes, exclusion letters, confidential records of findings (with names) and

monthly, quarterly, half yearly or yearly statistics. After HI was completed the Principal was informed about the nurse's findings.

NH teams visited their schools at least twice in one year. NPA and KZ teams visited their schools at least once in 2 or 3 years. The duration of a HI visit depended on the number of children to be seen. The duration of visits was one to fourteen days.

4.3.3. Follow-Up Visit

Ex NH teams were able to visit all their schools for follow-up. This was conducted at least three months after the HI visit. NPA and KZ teams were not able to undertake follow-ups because they generally had too many schools to cover. These teams did follow children with special problems, for example children with poor eyesight. During the follow-up visit only the specific problem of the child was attended to.

4.4. Output

The SHS coverage varied considerably and was related to the availability of resources and the pupil/SHT ratios. For NH it was 100%, NPA 49% and KZ 23%. The KZN average was 62.5%.

4.4.1 Health Problems

The outcome of HI was either a record of good health or an indication of a health problem. Learners with health problems were either advised, treated or referred; or the parent was called for an interview.

According to the 1995 statistics in the sample region, 62883 pupils were seen for health inspection and 9297 (15%) were referred for treatment. The overall coverage was 62%.

Table 8: Health Problems Of Children (N=212)

HEALTH PROBLEM	NUMBER	PERCENTAGE
Dental caries/malocclusion	66	26.6%
Eye conditions	50	20.1%
Ear/ hearing problems	21	8.4%
Stomach-ache	20	8.0%
Ringworm	16	6.4%
Chest/ asthma/ cough	12	4.8%
Wound/ sores	10	4.0%
Headache	10	4.0%
Enlarged tonsils/sore throat	7	2.8%
Intestinal parasite	6	2.4%
Fits	5	2.0%
Skin patches/ rash/ scabies	4	1.6%
Flu	3	1.2%
Malnutrition	3	1.2%
Bilharzia	2	0.8%
Hernia	2	0.8%
Undescended testes	2	0.8%
Herpes	2	0.8%
Other	8	3.2%
Total	249	100%

Other problems were incontinence of stools, poor teeth alignment, kidneys, rape, painful joints and bones, and pain in private parts. Some children had more than one problem.

At many of the township schools visited in the study, one or 2 of the 12 children interviewed reported that they had been raped.

Common health problems in pupils seen by school nurses were dental caries (34%), ringworm (14%), eyes (7%), ears (5%) and stomach-ache (3.8%). In children who had not been involved in HI, problems were eyes (30%), stomach-ache (28.8%), dental cavities (16%), chest (9%), headaches (9%) fits (7.4%), skin (7%) and worms (5.3%).

4.4.1.1 Clarification of some health problems

“Ears” and “eyes” refer to all health problems of the affected organ.

There were also more children in this group who were not progressing well in school. These had either mental retardation or physical problems that were not detected, for example poor vision.

4.4.2 Advice Given By School Nurse (N=156)

The question was not applicable to 26% of all respondents (they were not seen by the nurses). Of those seen, 10.1% were advised to go to hospital, 8.05% to go for tooth extraction, 8% received no advice, 5% were referred to the clinic.

4.4.3. Children referred

Of all children seen by the nurse 108 (68.8%) were given a referral letter, 48(30.6%) were not given a referral letter. Of all respondents, 93.5% of the pupils were told to give the referral letter to the parent /guardian or the health practitioner when going for treatment, and to return it to school. 5.6% were unclear on what to do.

4.5 Outcome Of HI

4.5.1. Response To Referral

More than half of the children referred (53%) went for treatment. More girls (59%) than boys (41%) went for treatment on referral. The highest response was seen in urban areas (68%); in peri-urban areas the response was 50%; and the lowest in rural areas (47%). The House of Representatives (HOR) had the highest response at 100%, HOD was 66.6%, KZ was 49% and ex NPA was 20%.

There were 27 std. 5 pupils in the sample of children who had participated in SHS and 38 std. 5 pupils who had not. Of the former (seen by the school nurse), 21 were given referral letters and 6 were not given referral letters.

Of the 21 who were given referral letters, 12 (57%) went for treatment and 9 (42%) did not.

4.5.2 Referral Services

The following referral resources were used: clinics, hospitals, doctors, dentists, social workers, eye specialists, ear-nose-throat specialists, orthopaedic specialists and child counsellors. Child counsellors were not available in ex KZ; they visited schools in ex NPA; and they were available in schools in ex NH. Referrals were sent to therapist services such as speech therapists, SANCA, SANEL and special schools for the blind, the deaf and mentally disabled, environmental services, nutrition services, psychiatric services, child protection unit and police.

4.5.3 What Happened At Referral Service

Table 9: Treatment Results: Parents' Responses

CHILD RECEIVED TREATMENT	FREQUENCY	PERCENT
YES	44	66.7%
NO	22	33.3%
TOTAL	66	100 %

4.5.3.1 Treatment outcome; childrens' responses (N=108)

Of all respondents, 58.1% were treated, 6% were examined, 3% were referred for further treatment, 3% were given an appointment, 1.5% were tested and for 1.5% nothing was done.

4.5.4 Children’s Subjective Feelings In Relation To Health Problems

Pupils were asked about their health on the day of the interview. Their responses were as follows: 55% of the children who had been seen for HI said they were feeling better compared to 44% of the children that had not been seen for HI. Of those seen by the SHN, 7% reported feeling worse than before, compared to 26% from the group that was not seen by the school nurse.

Table 10: Parent’s And Child’s Reasons For No Treatment.

Why Was Child Not Treated?	% Child (N=108)	%Parent (N=66)
Don’t know	17.3%	20%
Home remedy was used	3.8%	7.5%
Treated at school	7.7 %	0%
No money	13%	20%
Problem with adult to accompany child	6.9%	7.5%
Got better	3%	0%
No pain / no reason / no need	12.8%	12%
No time	3.2%	5%
Afraid of injection	3.8 %	0%
Not sent	11.5%	0%
Other reasons	13.9 %	37.5%

Other reasons included cases where parents did not agree with the nurses’ findings or felt that the problem was not serious. The number of siblings and family members did not seem to influence the health-seeking behaviour of respondents.

Of all parents interviewed, 82 (63.6%) did know of their child’s health problem before the school nurse’s visit. However, 32 (24.8%) did not know *until* the nurse’s visit. To 10 (7.8%) parents, the question was not applicable because their children were not seen by the school nurses. In 5 (3.9%) of the cases, the adult who came for the interview did not know the answer.

A total of 69 parents (82.6%) were advised by the SHN to send the child for treatment, 8.7% by a clinic nurse, 2.9% by a teacher or a specialist doctor and 1.4% by a doctor or nurse. The majority of the children (40.7%) were treated by a PHC clinic, 19.6% by a hospital, 5.4% by a doctor, and the remaining 34.8% were either treated by a dentist, hospital and clinic, optician, specialist, SHN or at home.

Table11: Parents'/ Caregivers' Comments About HI.

REMARKS	NUMBER	%
It helps	43	39.4%
Good thing	53	48.6%
Must continue	2	1.8%
Acceptable	3	2.8%
Positive subtotal	101	92.6%
Never seen SHS	4	3.7%
Nothing to say	3	2.7%
SHNs give no advice	1	0.9%
Negative subtotal	8	7.3%
TOTAL	109	100%

Eighteen parents did not respond to the question.

A sample of comments made by parents were as follows:

"Children do not often discuss their problems with parents".

"Some children prefer to speak to the nurses about their health problems". "Nurses are able to detect health problems that some parents cannot detect". "We are too far from hospitals and doctors".

"Nurses make us aware of problems".

"Some parents ignore the problems".

"Nurses give new health information".

"Some children do not have parents to look after them"

"Nurses can treat some of the illnesses".

"Parents take nurses advice more seriously than teacher's advice".

"Nurses encourage parents to act".

"In case a child gets sick teachers may not know what to do"

CHAPTER 5: DISCUSSION

Findings of this study are discussed according to inputs, processes, outputs and outcomes; barriers to the implementation of SHS were identified as well as strategies to overcome them based on the recommendations of the WHO. ^{55& 22}

5.1 Input

5.1.1 The Structure Of HI

The 13 teams for over 717 primary schools with a population of 366491 were inadequate to visit all schools in one year. The region needed at least 28 teams, which means there was a shortage of 15 teams. The long distances between schools and the teams' offices compounded the problem. The previous policy of distributing resources per race group and the lack of guidelines for rationalisation of resources delayed the process of redistribution. Since SHS teams were based in urban areas, schools in rural areas were poorly covered. Teams from KZ who were based at hospitals and clinics lacked accommodation. They were not regarded as part of the institutions at which they were based. To give an example of the difficulties they experienced, three teams were sharing an office which was used as a consulting room by a visiting doctor at the clinic where they were based. When the doctor was around the team had no office. KZ SHS teams' had SASOs and Health Assistants (HA) who were employed for SHS, but who were working in the community investigating TB patient contacts and organising volunteers to supervise the administration of TB treatment. These workers had not been officially removed from SHS and yet they were not contributing to SHS.

In six out of nine provinces in SA nurses, doctors and SASOs rendered SHS. In all these provinces there was consultation and co-operation between SHS teams and the Education Support Services (ESS) from the Department of Education. In the sample region there were weak ties between SHS teams and ESS.¹⁵

SHS teams have to be multidisciplinary in order to access a range of skills. These include speech therapists, psychologists, nutritionists, dental hygienists, health educators, special counsellors, doctors, volunteers, nurses, assistants, teachers, social workers, parents, school boards and children. In the sample region the multidisciplinary team was only involved in dealing with referrals. This situation is unsatisfactory when it comes to common problems such as oral health and mental health. In Myanmar state in Asia, SHS team members included a medical officer, dental surgeon, nurses, clerks, social workers and children's officers.³⁴ In the Western Cape doctors were more involved in SHS compared to KZN. Children referred by the school nurse in the Western Cape were seen by a school doctor first before further referral.¹⁸

In the USA, the availability of SHS in a particular educational model, *The School of the 21st Century*, found that 75% of schools had school nursing.⁹

Dedicated supervisors understood the needs of the service and the staff. Part-time supervisors involved with other functions such as PHC, nutrition services, the development of the DHS and hospital services were unable to give adequate support. Poor supervision resulted in staff feeling neglected and unsupported.

This study was conducted during a transition from the previous government to the new government. As a result of the transition, district and regional boundaries were still being demarcated and some teams were going to be shifted from the sample region to other regions.

One of the SHS supervisors was nominated to be the regional co-ordinator to support teams during the transition. Lack of clarity about the future of the service created a lot of anxiety among the staff.

The inability of KZ and NPA teams to cover all the primary schools was of major concern. Each of the previous health departments had been covering its own target classes in 1995. Since the new government in 1994 the expectation by the SHS co-ordinators was that by 1995 target classes would have been uniform in KZN. Children in the target class were seen regardless of whether or not they had a health problem. However, all children with health problems were seen whilst the school nurse was at the school. In 1996, through the provincial co-ordinators, teams decided to change their target classes to concentrate on grade 1. Teams also continued to screen for health defects in other classes. The aim of target classes was to ensure that all children had an equal opportunity of being targeted while in the chosen class. This gave each child one specific opportunity of being examined by the SHN while in primary school. Where the SHN was not able to visit all schools in one year it unfortunately meant that children in the target class that year were not examined. This affected pupils in schools visited by KZ and NPA. Targeting classes allowed for monitoring and comparison between teams.

The DOH allocated the budget, employed the staff and administered the service. This was the same in all except one province in SA. The disadvantage was that while the DOH had the needed expertise to deal with health issues, services were rendered in another department (Education) and as a result, services tended to be neglected, with other issues taking precedence over these services.

In Canada, the Department of Health was the sole agency that provided SHS. However, in the province of British Columbia (Canada) health and education departments had joint responsibility for formulating policies and the local authority was required to contract for the SHS.³¹ In Indonesia, SHS were provided by the Department of Health with health education being provided by the Department of Education and a healthy school environment provided by the departments of health, education, religion and home affairs.¹⁸ The advantages of the service being rendered from the Department of Education were that there was local ownership by the school population. Such a situation was conducive to the continuity of the service.

5.1.2 Resources

There were too many schools with too few nurses for the ex KZ and ex NPA teams to visit in one year. The furthest school visited was more than 100 km away from the base. Some team members were not adequately trained to deal with problems such as sexual abuse.¹⁸

Lack of human resources proved to be the biggest constraint on the performance of SHS. In order to improve the situation, the SHS teams in the province had suggested

a professional nurse/pupil ratio of 1:10000(Unpublished SHS reports). The average ratio of professional nurses to “Black” pupils was 1:58832, which made it difficult to make impact without revising the strategy. The lower ratio for ex NH allowed teams to achieve their objectives.

Transport is a basic requirement for SHS to succeed. Whilst transport was not a problem with NPA and NH, the fact that two teams from ex KZ did not have transport meant that they were unable to visit schools on a regular basis. Where a team did not have an allocated vehicle, it was virtually impossible to run the service by requesting a pool vehicle from the institution where the team was based. The use of different types of forms, and lack of official stationery were further constraints. SHS budget was not clearly identified: this made it difficult for teams to access it

5.1.3 Policy

The WHO expert committee on Global SHS initiative recommended the development of policy. KZN legislation and guidelines supported SHS ¹⁷ but the lack of an appropriate policy made it difficult to standardise practice and to monitor performance. The National PHC package (5th draft 1997) included school health service activities such as screening for defects, health education and immunisation as part of the basic PHC package to be delivered through the DHS. Even though the package was viewed by some as being prescriptive, it represented the views of service providers about SHS as an important part of PHC.⁵⁶ The Workshop on the integrated policy for SHS in SA, held at the University of Cape Town (1997), recommended a national policy on SHS which does not prescribe activities but

highlights broad principles for SHS and a directorate to support implementation.¹⁶

While the Maternal Child and Women's Health (MCWH) policy document for the province of KZN suggests that school health be part of MCWH programme, no specific steps were taken by this directorate to support SHS.^{57, 58 & 59}

The absence of clear provincial and national SHS policy in SA made it difficult to unify these services and school nurses continued to implement their previous health authorities' SHS policies. The SHS co-ordinating team that was established in 1994 tried to unite the services but was unable to accomplish the task without the backing of a well-defined policy with stipulated objectives. Teams were willing to change but they needed confirmation from authorities that they were doing the correct thing. Because of the lack of policy guidelines, teams could not re-allocate schools so that there would be an equal share of work. After the demarcation of regional boundaries, SHS teams were expected to work within these boundaries. There was therefore a need to hand over some of the schools that they were managing which at the time fell outside their boundaries. This meant handing over to people who were not previously dealing with those communities. The policy was necessary to facilitate and to guide this process; to standardise procedures (such as obtaining of permission to conduct physical examination of children); to give treatment; and to immunise children at schools.

In a country such as Sweden SHS is guided by uniform principles based on the education act and on the directions and recommendations of the National Board of Educators.³² Small countries such as the Maldives have a national SHS policy³⁴

The Health Visitor's Association in the US believes that a national policy is required to establish objectives for SHS and to specify how these objectives should be met.²³

Taras *et al* (1997) found 600 school-based health centres testing vision and administering medication and other medical procedures that were mandated by law.

⁴⁶ In the UK, whilst an expectation existed that schools should make some provision for health or hygiene education, there was no single statutory provision.⁴⁵ In

Bangladesh the government tried to expand the school health service to reach more beneficiaries, while in India the National Health policy (1983) recommended that organised SHS be established.¹⁷

Among the problems and constraints experienced in providing SHS programmes in Nepal was a lack of a well-defined national strategy for the promotion, support, co-ordination and management of school health programmes.⁴⁸ This problem is similar to that experienced by SHS teams in KZN. The draft youth policy for South Africa refers to ineffective youth health services including SHS.⁶⁰

The Health Promoting Schools (HPS) network and the HPS policy (1996) highlights the important principles that need to be included in HPS programmes, such as empowerment of communities, intersectoral collaboration and improvement in the quality of care given. It broadens the view of school health because it emphasises local ownership and individuality of each school.⁶¹

5.1.4 Organisation Of SHS

The slow process of transformation of the SHS and integration of teams has resulted in the inequitable distribution of resources and services.

Whilst the majority of SHS team members were nurses, it was not clear as to which directorate was giving them support - MCWH, Health Promotion or Nursing? The DHS policy of the National Department of Health indicates that SHS is a function of the District Health System (DHS) like all other primary health care services.

However, SHS is a specialised service that requires relevant expertise like environmental health, nutrition and health promotion. There is therefore an urgent need to develop an integrated SHS policy to clarify its position within the PHC system.

The draft job description of the co-ordinator for MCWH in KZN province had SHS as one of the components in this sub-directorate and it made sense because SHS provides child health services. However, the newly established Health Promotion (HP) sub-directorate, involved in introducing the health promoting schools network, (which includes health education, early detection of disease and risk reduction which have always been the main components of the school nurse's function) is separate from MCWH. Provincial MCWH is involved in the development of youth policy with minimal involvement of SHS. There is a possibility that whilst the previous fragmentation was according to race group, a new fragmentation based on functions is in the making.

Ex NPA teams were placed in regional PHC services. However, there was concern among some school nurses that when they were put together with PHC nurses, PHC nurses were regarded as senior to school nurses.

During the time of this study the region was preparing to bring all teams in Pietermaritzburg (Region B) under one roof. This would add value to the quality of services because teams would share knowledge, expertise and experience, and it would facilitate the process of rationalising existing resources. However, there was still an inequitable distribution of teams between rural and urban areas in this region. At the time of the study, teams spent a lot of time driving from base to schools outside urban areas.

Similar problems of fragmentation existed in the Eastern Cape in 1997 amongst the SHS. However in the Northern Cape, SHS rendered by the Department of Education was different from KZN, Western Cape, Gauteng, Eastern Cape and other provinces in the country where the service was rendered by the Department of Health.

The structure and the nature of SHS are influenced by the policy on health and education. In South Africa, SHS was influenced by the introduction of the DHS and the recommendations of the Education Support Commission that the service be rendered by the Department of Education.¹⁵

SHS has to be delivered at the level of a health district. This is acceptable to service providers as well as the community. The problem in KZN was that Health and

Education districts boundaries were not the same. This made liaison with Education authorities, from within as well as from outside health district boundaries, very difficult. Once district boundaries have been corrected to coincide with other social services boundaries, co-operation between health and education in the district will improve.

The recommendation to relocate SHS from Health to Education has advantages and disadvantages. Before this recommendation can be implemented, there is a need to establish an SHS coordinating body between these two departments at the provincial level. The main function of this coordinating unit will be to clearly define the support that the service needs from Health as well as Education. The advantages of relocating the service to the Department of Education would include the transfer of ownership from health professionals to the school population as well as the local community; the acceptance of SHS by the Department of Education; the transfer of skills from health workers to teachers and pupils; and ensuring sustainability of the service. Disadvantages include the fact that Education will still have to buy expertise from health, which may lead to professional isolation of school nurses and school doctors.

5.1.5 Cost Of HI In KZN: 1996

The average cost (R13.13) of conducting HI in the sample region was lower than the provincial average of R33.58.⁶² It was also lower than the clinic consultation cost of R22.53 in the same region. There is a need to conduct a proper cost evaluation study of this service. The province has to invest more money in SHS in order to derive

maximum benefits. It is also important to clearly allocate funds to SHS in order to facilitate monitoring and evaluation of the cost benefits of this service. This study's findings are consistent with findings in Middletown USA, where the cost of examining a child at school was found to be lower, (\$11.25) compared to the cost (\$45.00) for examination by a practitioner outside school ⁴³

Almost all countries providing school health perform a physical examination, screening or inspection component. ^{12,15,59}

The majority of the 3 million children in primary schools come from poor Black communities. Due to limited resources the government could decide to target those schools that are regarded as the most needy.

The perceptions of providers and recipients of SHS indicated that it would be better if SH Nurses examined all children in a school in order to identify problems that learners may be experiencing. ²⁰ Examining all children at school is neither desirable nor feasible. However this comment by teachers is interpreted to mean that teachers see the value of the service.

In Soweto about 5% of the children involved in the SHS study had clinically significant health problems, and neither teacher nor parent referrals proved useful. Selection of children for physical examination has to be done by a trained person. ²⁵ According to Wagstaff (1987), Soweto school health service was hampered by fragmented health care; that given adequate resources it had a potential to develop

into a more comprehensive and cost effective service with benefits for the wider community; and that the majority of problems identified at schools could be effectively dealt with by primary health nurses.²⁵ Wagstaff was concerned about the low percent of children who went for treatment following a referral. She interpreted this as meaning that the community was not too concerned about those health problems.²⁵

Frets van Buren *et al* (1989) found that about 50% of children who failed class 1 and class 2 had medical as well as learning problems.⁶³ 26% percent had problems that could be solved without difficulty. It was also found that 81% of repeaters with medical problems were sufficiently intelligent to pass. This indicates the need for professional assessment of the health needs of school children as well as interventions to address such needs, as soon after the child started school as possible.

5.2 Process Of HI in KZN

5.2.1 Preparatory Visit

The preparatory visit ensures co-operation by the school on the day of the main visit, allows the SHS team to discuss their expectations with the teachers, and to listen to the teacher's views on the service. If all schools had telephones and fax machines this visit could be omitted. Where teams use this visit to select children for examination, this visit has to occur.

5.2.2 Health Inspection Visit

An HI rate of 50 children per professional nurse per day offers an opportunity of reaching out to disadvantaged children and identifying problems. During this visit children report health problems such as passing blood in urine or worms with stool. Class 1 is the ideal class to identify health problems that may hamper their learning. The Education department at the time, based on the Madadeni study by Frets *et al* (1989), recommended class 1 as the target class. Teachers report any health problem that they may have observed with children. Parents are encouraged to be present on the day of HI to support the young children. However, this is not often achieved. The implications of working with class 1 are that the process tends to be slow and that teachers and parents have to assist the nurses.⁶¹ SHS teams were also involved with immunisation and health education campaigns and other health promotion activities. With the changes in the needs of children at the school going age, SHNs have to address psychological, social and emotional health needs, in addition to physical health.

The fact that in 24% of children seen, the school nurse was the first person to identify health defects means that, without SHS team's intervention, these problems could have ended up complicating or leading to deformity. Where the family knew the child's health problem and yet no action was taken, HI led to a recommendation of specific actions to resolve the problem. SHNs had an opportunity to call parents to schools to discuss problems identified, to visit homes and to organise parents meetings at schools - which led to a better understanding of the service. At times

SHS worked on joint projects with parents to improve health in schools. Parents meetings are an integral part of HI.

Promoting health at schools requires SHNs to work with communities in development projects, such as ensuring that children get clean water at school.¹⁵

In the US the school nurse was involved in a range of activities such as physical care, psychological care, facilitative action (for example referral, home visits and consultation), teaching/instruction and administration. Some of these activities are also carried out in KZN.^{1,7 & 63}

School health programmes reduce health problems, increase the efficiency of education systems and advance public health, education, social and economic development.⁶³

The international nurse/pupil ratio was 1: 5000.²⁷ In ex KZ, the average ratio was 1: 58000. In Taiwan, schools were required to hire at least 1 school nurse for 72 classes, which by our local standards of 40 pupils per class, would be 1 nurse for every 2 880 pupils.⁶⁴

US SHS in California were complaining about lack of resources just as school nurses in the UK complained. In 1997 in the US there were 30000 nurses for 110 000 schools.²⁴ This is a ratio of 1 nurse to 4 schools. This ratio is lower than the ratio in KZN province.³² The recommended nurse/pupil ratio for SA was 1:6000 but was

higher in most areas.¹⁵ This ratio was a national guideline before the new democratic election in 1994. With limited resources it is an unattainable ratio.

SA children are usually examined at SSA, std.3 and std. 5. ⁴Target classes in the Eastern Cape province were SSA, Std. 2 and Std. 5.

Records kept by SHNs provided detailed information on the activities and findings. However, records appeared to be too many, with differences from health authority to health authority. Records needed to be unified in order to facilitate referrals between teams. Records kept were very useful for follow-up care, for management information as well for research purposes. Individual student medical cards are used to keep the medical history of the child and can be transferred from school to school with the child. These records are important for continued care, monitoring and evaluation of the service.

The issue of treatment at schools was viewed by some as being controversial because it had implications for obtaining a parent's consent before issuing treatment to pupils, especially in affluent communities. There was a question of the legal aspects of issuing medicine to a child without the parent's consent. It also had implications for the training of school nurses in clinical assessment, diagnosis and treatment of minor ailments. However, in the "Black" rural communities, the parents never queried treatments of school children. This practice was not widely done in these communities but where it happened it was regarded as a resource. It was therefore an issue to be seriously considered to ensure that it is not in contradiction with the

law. Where such a practice is acceptable to parents, it should continue. The fact that PHC treatment by nurses was free made it possible for ex NPA and some KZ school nurses to carry treatment to schools. This was necessary, because clinics were too far from communities.

5.2.3 The Follow-Up Visit

NH teams carried out follow-up visits to measure response to referrals, treatment and non-compliance, and took appropriate action. The inability of the majority of teams in the sample region to conduct follow-up visits made it difficult for them to evaluate and improve the service.

5.3 Output

5.3.1 Coverage

Coverage varied between previous health authorities - for Whites, Indians and Coloureds it was excellent. The overall coverage for ex KZ was poor (23%). It would be better if the service targeted children and not classes. The large numbers of schools, lack of transport and long distances from base were some of the causes of poor coverage.

5.3.2 Health Problems

The majority of children had dental, eye, ear, skin and stomach problems similar to the Wagstaff study in Soweto, and Frets *et al.*

It was cost effective to examine children at school rather than to take them to a practitioner outside the school. It was also found that medical conditions dealt with were infections, weaknesses, sore throats, abdominal pains, injuries, rashes, backaches and minor acute illness. The school board did not allow family planning services. With the exception of injuries, all of the above conditions were found in KZN. It is likely that when injuries occur they are attended to as a matter of urgency.⁴³

In a study conducted in Uppsala by Rydell, 49% of children studied had health problems^{25,32,61}, while in the US, 1 in 6 children aged up to 17 years were reported to have a developmental disability.⁵²

The Soweto study found that up to 85% of conditions could be treated at PHC level.²⁵ In the KwaZulu-Natal study it was found that at least 1 in 10 children in township schools had been raped or had signs of sexual abuse, and that the school nurse was sometimes the first person to attend to the emotional and psychological trauma. While the criminal aspect of the act may have been attended to by reporting to the police and the social workers, in many cases the perpetrator was arrested but often released without trial. This had implications for the school health service. In KZN the school nurse did not have all the necessary support he/she needed to deal with the situation. Some SHN were able to counsel the pupil and mother. Further than that, the SHN needed to refer, but more often than not, relevant referral facilities were not available. Some of the nurses did not have counselling skills, so they needed training. Above all, the most important

implication was for prevention and setting up of rehabilitation resources. The Education Support Services can contribute greatly to dealing with this problem.

5.4 Outcome

5.4.1 Referrals

Most referrals made were appropriate in that the child did have a problem that needed referral.

While in the US 95 to 97% of all problems identified were resolved or were in the process of being resolved, KZN compliance was lower than Oda's study. Oda's study recommended that an essential aspect of any effective SHS should be its ability to identify health problems and to manage and follow problems to resolution⁶⁵ This remains a challenge for KZN.

In the Soweto study, out of 107 children referred by the school nurse, 38% went for treatment, 37% did not, and 25% were absent on the day of follow-up. This means that out of the 69 children who were present on the day of follow-up, 35 (50.7%) did go for treatment. This is comparable with our findings.²⁵

The fact that the largest number of children went to the clinic for treatment suggests that most of the problems could be treated through PHC. The SHN was a contributory factor in positively influencing the health-seeking behaviour of children. NPA and NH teams were privileged in that there was money allocated for

them to assess families and submit an application for classification as indigent - as a result some children received free spectacles and other forms of treatment. This facility did not exist in ex KZ.

5.4.2 Children' Subjective Feelings About Their Health Problems.

Children's feelings improved after they were seen by school nurses and referred for treatment. In the NH schools, which were seen on time and prompt measures taken to resolve problems, these children were relatively healthier. It was evident that continued involvement in HI was an advantage.

5.4.3 Parents Comments

Parents indicated a need for the service, that it was acceptable to communities and that the majority had been exposed to the service.

5.5 Barriers To SHS And HI As A Component.

Comparison of barriers found in this study, to those found by the WHO globally, indicates that there are many similarities. (Table 12)

Table 12: Comparison Of Barriers To SHS In KZN And WHO Studies

GLOBAL SITUATION	KZN SITUATION
<p>Inadequate Vision</p> <p>A clear vision with an adequate strategic plan to provide direction, motivation goals and to ensure a common goal toward which SHS should strive</p>	<p>Lack of clear vision about the contribution of SHS and HI. The absence of a national and provincial SHS policy.</p>
<p>Inadequate understanding by decision- makers in influential positions.</p>	<p>There was insufficient understanding of SHS and HI by senior managers.</p>
<p>Inadequate collaboration between the departments of Education and Health, non-governmental organizations and other agencies.</p>	<p>Poor collaboration between departments of health and education at provincial and regional level and other agencies.</p>
<p>Lack of ownership, responsibility and accountability.</p>	<p>Little support from authorities.</p>
<p>Lack of resources for SHS and in schools.</p>	<p>Inadequate resources. Lack of proper sanitation & lack of adequate and safe water supply.</p>
<p>Resistance to change, poor communication among role-players and stakeholders.</p>	<p>Same</p>

5.6 Recommendations

An integrated SHS policy has to be developed to overcome fragmentation. The policy should include components such as HI, school environmental health, health

promotion, health education, nutrition services, training of teachers, oral health, life skills, AIDS education and special initiatives such as the parasite programme.

SHS teams should be distributed per health district. SHS needs to be fully integrated into the DHS, with support from the region and the province. The number of pupils in the district should guide the number of teams. Teams should be co-ordinated at regional level in order to guide transformation of the service from the old fragmented system to the new integrated system. Whereas teams in KZN recommended a nurse/pupil norm of 1:10000, resources available may not allow such a norm to be applied. It is recommended that 1 team should be available for 20000 pupils. Allocation of schools should only be based on proximity with no reference to the previous arrangement. Teams should not cross-district boundaries in order to ensure efficient use of resources.

There is a need to establish a co-ordinating committee linking education, health and welfare services at provincial, regional and district level.

5.6.1 Recommended Strategies To Enhance The Quality Of SHS And HI

School nurses should provide treatment for pupils, teachers and other school staff. From experience with the parasite control programme, we have learned that school-based treatments are effective.¹⁸

The type and number of records have to be reviewed - important forms such as records of findings, treatment, statistical returns, and other forms need to be made available from central provincial stores.

Supervisors with SHS knowledge and expertise should mentor and support SHT. HI has to continue as a central component of a comprehensive school health service. However, it need not be done in a strictly uniform way throughout the province.

SHS should be integrated with other health services. The organisation of the service should ensure decentralisation of services to district level.

5.6.1.1 Comprehensive SHS for KZN

This approach should follow the WHO definition of SHS provided by a multidisciplinary team, and include education support services, such as school psychologists, guidance and counselling services.

The school population such as teachers, pupils and the community should drive the process by getting involved and ensuring that their needs are met.

In view of the shortage of resources, the service needs to clearly define the objectives - which should be realistic, attainable and achievable. It should be subjected to continuous peer evaluation to ensure that it meets the professional standard.

Health inspection has to be part of all the other components of school health such as health education, direct care, referral, environmental health, counselling, nutrition and health promotion. (Fig. 10)

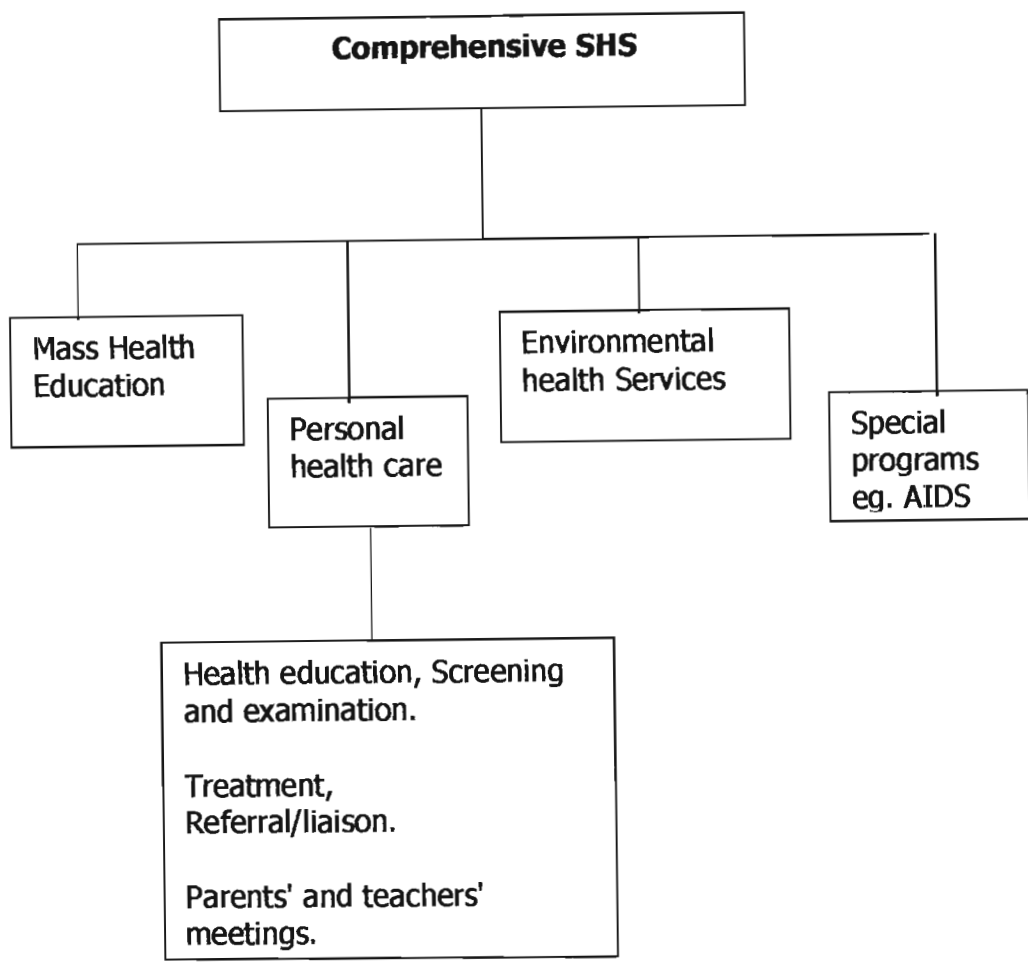


Figure 10: Proposed Model of Comprehensive SHS In KZN.

The aim of this approach would be to examine school beginners plus newcomers at school entry, once per year with a three months follow-up to promote health at individual and community level.

1 registered nurse should be allocated for every 20 000 children, part-time nurses and volunteers should be hired to ensure equitable distribution and improve coverage especially in rural areas. Teachers should be trained in HI and encouraged to get involved in referring children for health care. Holding of regular meetings

with co-ordinating committees to evaluate progress in the district will help to sustain the service.

5.6.1.2 An alternative model of SHS

In order to utilise the limited resources, one could eliminate target classes and concentrate on those children that have identified health problems. This would allow the nurse to spend less time per school and cover many schools. It would also eliminate any wastage of time in examining healthy children. This model is more relevant in affluent areas where parents are more likely to be aware of their children's problems, have the means to seek medical assistance and are close to services. This approach will however tend to concentrate on curative rather than preventive measures.

The need still exists for SHS to be delivered. This study showed that a quarter of health problems discovered by the school nurse had not been identified and attended to by either parents or teachers. It also showed that half of children referred for treatment responded positively.

An alternative is to have two different systems, one for rural schools and the other for urban schools. (Fig. 11)

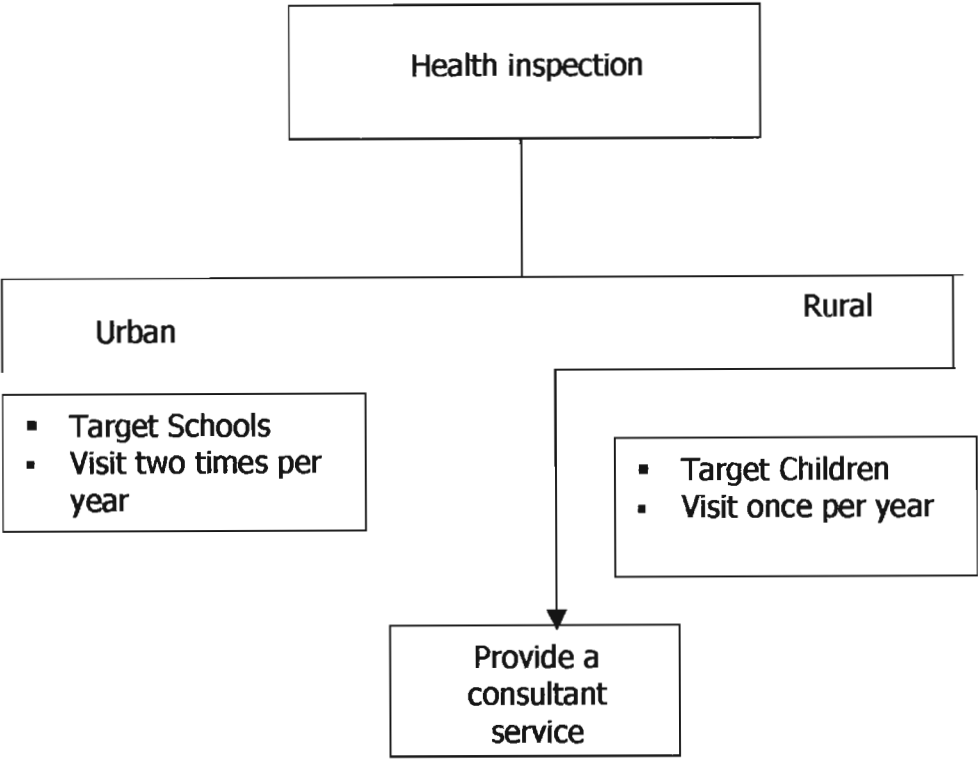


Figure 11: Alternative Model Of SHS

In rural schools, SHT could run a consultation service where the nurse would inform all schools about her availability; encourage schools to contact her whenever there is a need; and receive or visit children referred to her by schools. Rather than target schools, she attends to the needs as they arise while promoting health and empowering the school community to improve their health through projects.

In rural areas, groups of schools close together can be targeted; a total of 26 to 30 schools can be allocated one team consisting of a registered nurse and 2 others. A third alternative is to provide SHS to a cluster of schools on contract with school governing bodies. (Fig. 12) The following diagram shows an example where schools could be grouped geographically and a contract entered into between the Department of Education, or the school governing body, and a service provider to

deliver services to a cluster of schools. The advantage is that the contract will ensure that schools are covered. The only disadvantage is that this might require additional funding to the existing budget.

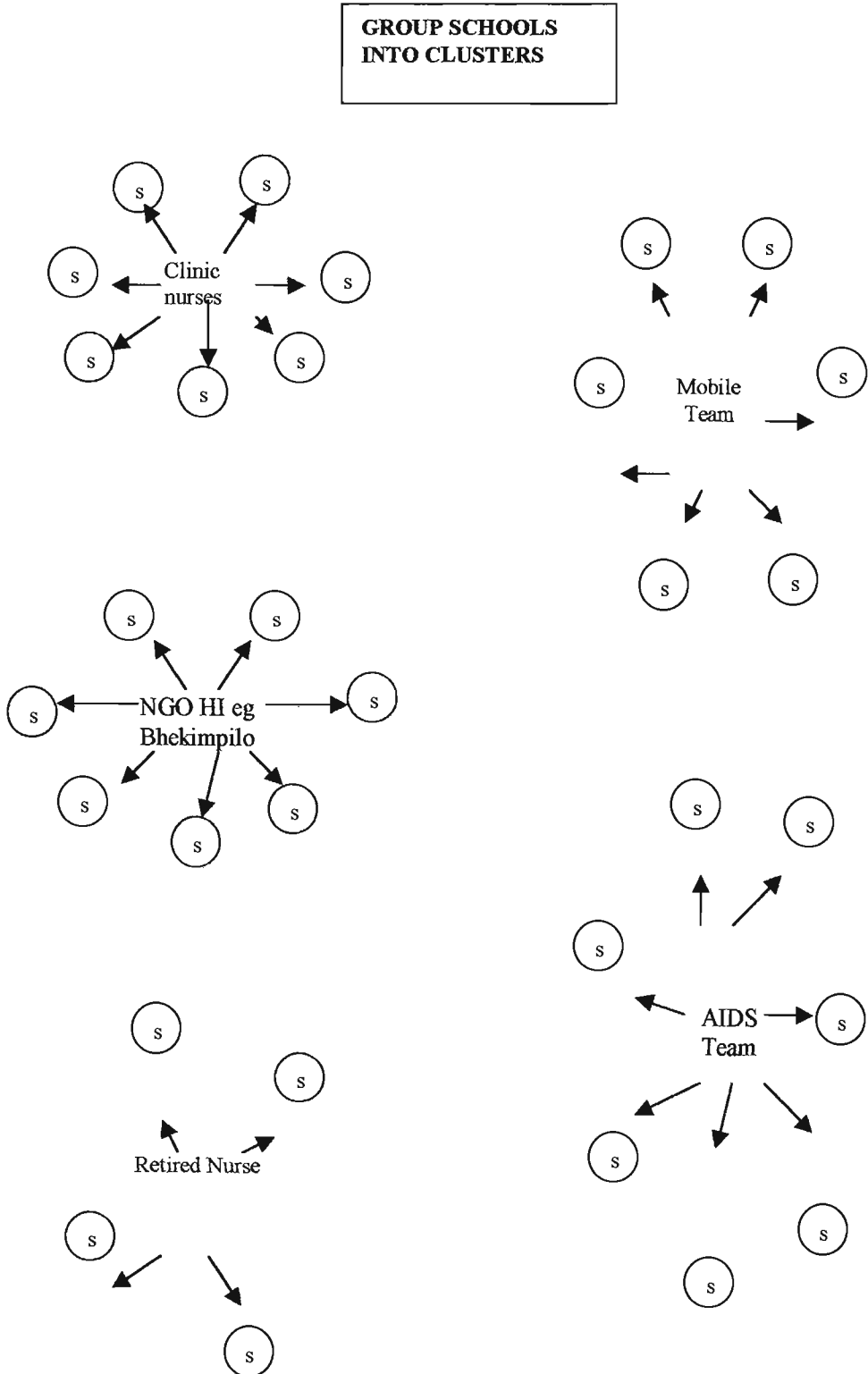


Figure. 12: Rendering SHS For A Cluster Of Schools

To allow non-governmental organisations to provide comprehensive school health services with support from the government would improve efficiency and coverage, and therefore effectiveness.

5.6.1.3 SHS and the District Health System (DHS)

The DHS was introduced in the country soon after the first democratic elections in 1994. The country has nine provinces and each of these provinces was divided into health districts. All services, from the first level up to and including the first referral hospitals, are part of the DHS. SHS is therefore part of the DHS. What still needs to be clearly defined is its working relationship with other services. The following is a recommended structure to link SHS with the DHS.²¹ (Fig.13)

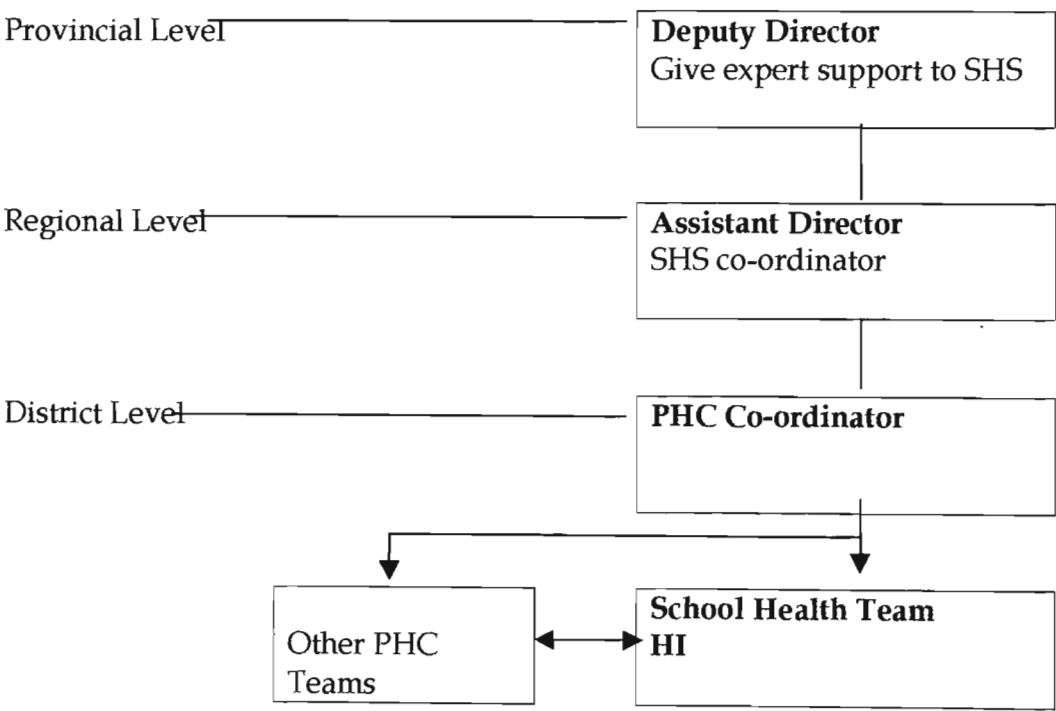


Figure. 13: Integrating SHS And DHS As Part Of PHC: Structure And Functions

Sidney *et al* see SHS as part of PHC and as an important component of MCH being rendered by a multidisciplinary team and including health examinations; vision and hearing screening; and checking for skin, eye, ear and other infections.⁴⁸ Hygiene, health education, immunisation, vegetable gardens and pit latrines are some of the activities in SHS. Measuring of weight and height in schools provides important data, which indicates the nutritional status of the community.⁴⁸

The concept of PHC was born in a conference in Alma Ata in 1978. It refers to a health service delivery that will ensure an equitable distribution and decentralisation of health services delivered with the people's full involvement, using appropriate and acceptable methods at a cost that the country and its people can afford. The PHC concept is applicable to all levels of care - primary prevention, secondary prevention and tertiary prevention⁶⁵

The concept of PHC was applied in ex KZ SHS, for example in community projects. What was lacking though, was accessibility of these services in "Black" Rural Areas. The distribution was such that children in cities could be in contact with SHS more than once in one year, while in rural "Black" areas it was about once in three years. The aspect of full participation was applied through parents meetings, teachers meetings and health promotion projects.

Figure 14 illustrates the application of the PHC concept to SHS with special reference to HI.

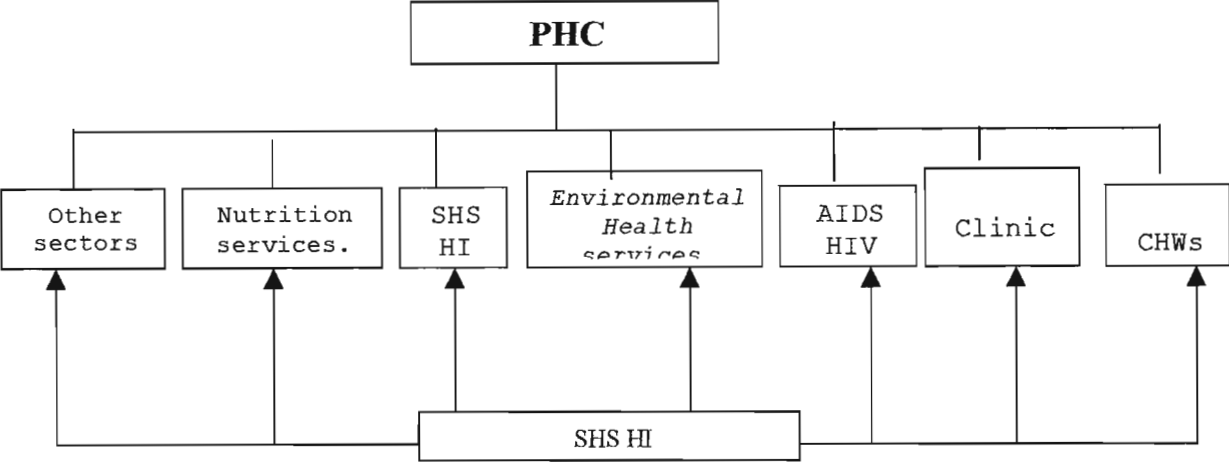


Figure. 14: SHS And PHC

Health challenges facing school children are due to the level of economic development of the country, the children’s environmental conditions and their life styles. These problems can lead to failure to attend school. With the present lack of jobs in the country, children who are unable to leave school with a qualification will not be able to earn a living and therefore will be a burden to SA society, hence the importance of improving the health status of school children. The care of children who are not at school remains a challenge for South African society. These children could be asked to come to school for health care.

5.7 Conclusion

Health inspection in KwaZulu Natal was still fragmented on racial lines and delivered from three different health authorities namely NH, NPA and KZ. The organization of SHS services for NH was vertical; for NPA, partly decentralized; and for KZ, decentralized. NPA SHS was integrated with PHC, and KZ SHS was based

at hospitals and clinics. Teams of nurses and SASOs provided the service. There was an uneven distribution of human resources. Provincial SHS policy was poorly developed. Teams were using previous policies that were formulated before the democratic government. There was lack of clarity at provincial level with regard to which directorate was expected to support SHS. There was no specific budget allocated to SHS. The service was run from the PHC or hospital budget. NH SHS had access to the regional budget. The cost of running the service was about R13.00 per consultation. It was cheaper than the curative PHC consultation cost.

The process of HI was the same in all three different previous departments, with minor differences.

The number of children seen was highest with NH (100% target population) and lowest with KZ (23%). The overall coverage for the region was 62%. Most common health problems found can be treated at PHC level.

The majority of parents interviewed gave positive comments about SHS. Parents regarded the service as being important and making a valuable contribution to child health. This suggests that HI has the potential to improve the health of school children. Further research is needed to investigate the contribution of HI.

Indicators such as health status and school achievement; physical and emotional development; the establishment of healthy habits; disease patterns, common disabilities, and the quality of environmental health are needed to monitor and

evaluate the effectiveness of SHS. Programme indicators must include the availability of SHS policy, budget and a database.

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APPENDIX 1

FIELD REPORT

Fieldwork was started on the 12 of August 1996. 26 schools were visited. Two to three schools were covered in one day, depending on the distance from the base to the first school and between schools. For interviews, two schools were visited per day in the six hours from 8am to 2pm.

On four occasions we arrived at the school and found nobody. Teachers and pupils were attending a memorial service or there was a teachers meeting, so children were asked to leave or not to come to school at all.

Specific observations were made in each school. Some pictures of schools were taken. Observations were as follows:

“Black” schools in townships had two guards at the gate; “Indian” schools had one security guard. The “White” and “Coloured” schools visited did not have a security person at the gate. Two schools, one “Black” and one “White” had locked gates.

Since we were using the previous years records of HI, some pupils in the sample had left the school. 12 pupils were selected even though only 10 were actually needed in order to make up for the short fall.

In addition to parents invited to the interview, in some schools teachers invited parents of children with health problems who were not part of the sample. This happened in those schools that were not regularly visited by the school nurses. In

one school, 8 parents came to discuss their children's problems. Parents were asked to wait until the research interviews were finished then they were attended to by the researcher. The research assistant was not involved with this.

Problems discussed were poor progress, truancy and ill health. For example:

1. The child who was not doing well in class. The child was reported to answer questions out of context, or he would say that he had finished doing his class work when he had not finished, e.g. having written one word when he was expected to copy a paragraph. He was also not coming to school regularly. The child was in std. 1 and he was 8 years old.

The child reported that he could not see what was written on the board and he could not hear properly. I told the child my surname, which was: 'Memela'. I asked him to repeat what I had said, he said 'Memeza'.

I later interviewed the mother. The Mother said she was told by teachers that the child sleeps in class. The mother took the child to an Inyanga. The Inyanga said the child was possessed by evil spirits. Mother reported that the child had said he wanted to stop going to school because he could not see what was written on the board.

I explained to the mother, what I believed was the problem. I suggested to her that she should send the child to the clinic, hospital or doctor. I also referred the child to the nurse who visited schools in the area for follow-up.

2. The second child looked healthy to the teachers. He did not do his work properly in class. The child told me he was not writing or counting properly because he had not been to his father. He was an illegitimate child. He believed that he should go to his father's family for a ritual. The mother said the child does not concentrate. He does not listen and avoids going to school. Mother confirmed that the child needed to go to his father's place but she had a problem because the father was uncooperative. Counseling was given to mother and child separately. They were referred to the school nurse for follow-up.

3. The third child was acting confused and she was not doing well in class. She was shy. When asked whether she had any problem she said, no, she did not have any problem. She looked healthy. She was about 7 years old.

The woman who came in as her mother was about sixty years old. She told me she was married to the child's uncle (father's brother). The child's own father died. The child's parents did not get married. Before the father died, the mother dumped the baby at her boyfriend's place. The boyfriend (child's father) was unable to take good care of the baby, so he gave the baby to his brother's wife, who did not have any children.

This woman said she had not told the child that she was not her own and had no intention to do that because the mother dumped her. In response to a question she said that she suspected that the biological mother visited the child secretly and thought that she had, however, not told the child who she was. In a long discussion, it was mentioned to her that she should think about telling the child the truth and allow the child to talk about it to her because it was possible that the child would soon find out, if she hadn't already.

4. The fourth child lives with his father's family. His mother and father never married. The child was reported to have very strange mannerisms. He pinched his breast often and had poor eyesight. When asked, the child said that there was a problem with him at school, but refused to tell the researcher what the problem was. The aunt (father's sister) who is looking after him said the child did not want to do his homework. The aunt seemed to dislike the child. She said the child was a problem. All children interviewed were referred to SHN for follow-up with suggestions on what to do.

APPENDIX 2

WORKSHOP REPORT. 17 JUNE 1997

HEALTH INSPECTION (HI)

The workshop was organised by one region, but it had participants from all the regions in the province of KZN. The presentation showed that there was a positive impact of HI on the health of the school-child with regard to identification and treatment of defects, improved feelings from many forms of pain to feeling better and with regards to making parents aware of their children's health problems. There was still a problem of the inability to deliver 100 % coverage in "Black" schools. A recommendation was made to review the role of the SHS and improve efficiency.

OPERATIONAL RECOMMENDATIONS MADE BY SHNs IN REGION B.

1. The school medical card should continue to be used in urban areas for the target population. In rural areas, the use of cards was not feasible because of a lack of office space to store the cards. As a result of this, cards get lost and cannot be moved from one school to the other on transfer of the child.

2. The routine HI form should be standardised, to be used in rural areas for the target population and in both urban and rural areas for the reelected children.
3. The defect list should be used by urban areas who use the card and not by rural areas because it contains the same information as the routine HI form.
4. The defect list and the monthly statistics form should have identical items regarding ear, nose and throat conditions.
5. The monthly statistics form should be re-drafted by taking into consideration all activities performed by the SHN. This form should reflect on all major areas of the service.

A small task team was nominated to draft the recommendations, which were to be circulated widely for comment, with the final recommendations to be submitted to top management.

APPENDIX 3

The Principal

Review of the School Health Service: KwaZulu - Natal: 1996

Dear Sir / Madam,

Your school will be visited to collect data needed to review the process of health inspection conducted by School Health teams. 10 children and their parents will be interviewed to establish the impact of the service.

Permission is hereby requested to visit the school and to conduct the interviews.

The Head of the Department of Education, the Circuit Inspector and parents of selected children have been written letters asking for relevant permission.

Your kind cooperation will be appreciated.

D.T.MEMELA

APPENDIX 4

The Circuit Inspector

.....
.....
.....

Sir / Madam,

Permission to visit schools in the circuit for a research project.

a study will be conducted to review the impact of health inspection conducted by the school health teams in public schools for the purpose of identifying health problems and referring some children for further management.

Permission is hereby requested to visit schools in your circuit for the purpose of interviewing teachers, parents and children and also refer to relevant school records.

a letter was also written and submitted to request permission from the Head of the Department of Education. a separate letter will be written to each parent in the sample to ask for consent to interview the parent and the child.

Your kind cooperation will be highly appreciated.

D.T.MEMELA

APPENDIX 5

Superintendent General
Department of Health
Private Bag 9051
PIETERMARITZBURG
3200

Request for authority to conduct a study to review the impact of health inspection on the health of a school child: 1996 - 1997 in KwaZulu - Natal Schools.

Sir,

The Department of Health renders school health services in all government schools in the province. a study will be conducted to review the impact of the service on the school child and also for the fulfilment of requirements for a master s degree through the University of Natal Durban.

Permission is hereby requested to interview school health services staff and to visit schools to interview children, parents and teachers and also to review relevant school records. Individual consent to interview parents and children will be requested from the sampled parents.

I hope that my request will meet with your favourable consideration.

DT Memela

APPENDIX 6

The Superintendent General
Department of Education
Private Bag X04
ULUNDI
3838

Request for authority to conduct a study to review the impact of health inspection on the health of a school child: 1996 - 1997 in KwaZulu - Natal Schools.

Sir,

The Department of Health renders school health services in all government schools in the province. a study will be conducted to review the impact of the service on the school child and also for the fulfilment of requirements for a master s degree through the University of Natal Durban.

Permission is hereby requested to visit schools and to interview children, parents and teachers and also to review relevant school records. Individual consent to interview parents and children will be requested from the sampled parents.

I hope that my request will meet with your favourable consideration.

D.T. MEMELA

APPENDIX 7: (TO PARENTS OF PUPILS IN THE SAMPLE: HEALTH INSPECTION STUDY: 1996)

REQUEST CONSENT TO INTERVIEW PARENT AND CHILD.

Sir / Madam,

a study will be conducted in your area to review the process of health inspection rendered by school health teams. The aim of the study is to find out whether the school health service improves the health of the children or not.

Your child was selected for an interview, which also makes you automatically selected.

Could you please allow us to interview both you and your child, at school on-----
---at-----. Kindly indicate below, whether you agree or you do not agree to the interview.

I agree	
I do not agree	

All information obtained during the interview will be used to improve the service. There will be no reference to your name. All information obtained will be kept in confidence.

Please note that you are free to decline from participating or to withdraw at any time.

Thank you,

D.T.MEMELA

**APPENDIX 8: (KUBAZALI BEZINGANE ZESAMPULA: IMFUNDO
NGOKUHLOLWA KWEZEMPILO: 1996)**

ISICELO SEMVUME YOKUXOXISANA NOMZALI NOMNTWANA.

Sir / Madam,

Kuzobuyezwa ngokwemfundo endaweni yangakini ukubhekela ukuqhubeka
kohlolo lokuhlolwa kwezempilo amaqembu ezempilo ezikoleni. Inhloso
yokubuyekeza ukuthola ukuthi loluhlelo lwezempilo lunenqubekelo phambili
ezinganeni noma qha.

Ingane yakho ikhethiwe ukuba sixoxisane nayo kuloluhlelo lokho kwenze nawe
njengomzali ukuba utomuleke ukuba ube lusizo.

Sicela usivumele ukuba sixoxisane nawe kanye nomntwana, esikoleni
ngomhlaka..... ngesikhathi..... Sicela ukhombise ngezansi ukuthi uyavuma noma
qha ukuxoxisana nathi nengane.

Ngiyavuma	
Angivumi	

Konke okuyotholakala ngezingxoxo kuyosetshenziselwa ukwenza ngcono uhlelo
lomsebenzi. Ngeke lisetshenziswe igama lakho. Lonke ulwazi luyogcinwa
luyimfihlo.

Uqaphele ukuthi uvumelekile ukwenqaba noma ukuhoxisa noma inini
ukusebenzisana nathi kuloluhlelo.

Siyabonga,

D.T.MEMELA

ANNEXURE A

INTERVIEW GUIDE FOR THE ANALYSIS OF HEALTH INSPECTION (HI) AS A COMPONENT OF SCHOOL HEALTH SERVICES IN KWAZULU-NATAL.

IMIBUZO YOKU BUYEKEZWA KOHLELO LOKUHLOLWA KWEZEMPILO EZIKOLENI LOMNYANGO WEZEMPILO KWAZULU-NATAL

SECTION A / ISIGABA A

1.1

Sample number _____

Inombolo yesampula

1.2

Age _____

Iminyaka

1.3

Sex _____

Ubulili

1.4

Class _____

Ibanga

1.5

Residential area

Indawo yokuyamba

1.5.1

rural

emaphandleni

☐

1.5.2

urban

edolobheni

☐

1.5.3

peri-urban

maduze nedolobha

☐

1.5.4

informal settlement

emijondolo

☐

1.6

Date of health inspection _____

Usuku lokuhlolwa kwezempilo

1.7.1

Health problem _____

Inkinga yempilo

1.8 Nurses recommendation for treatment _____

Izincomo zomhlengikazi ngokuthola ukwelashwa

SECTION B/ ISIGABA B

2.1 Were you given a referral letter by the nurse/ teacher after the last health inspection?

Wanikezwa yini incwadi yokudluliswa ngumhlengikazi/uthisha ngemuva kokuhlolwa kokugcina?

2.1.1 Yes / Yebo ☐

2.1.2 No / Cha ☐

2.2 Did the nurse or the teacher tell you what to do with the letter?

Ingabe umhlengikazi noma uthisha wakutshela yini ukuthi uyenzenjani incwadi?

2.2.1 Yes/Yebo ☐

2.2.2 No / Qha ☐

2.2.3 Do not remember
Angikhumbuli ☐

2.3 Did you go for treatment after the nurses visit?

Waya yini ukuyokwelashwa ngemuva kokuvakasha kwabahlengikazi?

2.3.1 Yes / Yes ☐

2.3.2 No / Qha ☐

2.3.3 N/A ☐

2.4 If yes, where did you go for treatment?

Uma kunjalo walufuna kuphi usizo?

2.4.1 clinic ☐

Emtholampilo

2.4.2 hospital ☐
esibhedlela

2.4.3 doctor ☐
udokotela

2.4.4 inyanga ☐

2.4.5 Other specify ☐
Okunye, chaza

2.4.6 N/A ☐

2.5 What happened at the health centre?

Kwenzekani laphe waya kofuna khona ukwelashwa? _____

2.6

If no, why did you not go for treatment?

Uma kungenjalo, awulufunanga ngani unyango?

2.7

How is your health problem now?

Isinjani inkinga yakho manje?

2.7.1

Same as before inspection

Kusafana nangaphambi kokuhlolwa

2.7.2

Better

Sekungcono

2.7.3

Worse

Sekukubi kakhulu

2.7.4

Improved but has re-occurred

Kwabangcono kwabuye kwavuka

2.8

How did you feel before the school nurse saw you?

Wawuzizwa unjani ungakabonani nomhlengikazi?

2.9

How do you feel now?

Usuzizwa unjani manje?

SECTION C/ISIGABA C (Parent interview / ukuxosisana nomzali)

3.1

How are you related to the child?

3.1.1

Parent

Uyisihlobo sini nomntwana?

Umzali

3.1.2Guardian

Umqaphi

☐

3.1.3Other

Okunye

☐

3.2Sex:

☐

3.2.1Male

Owesilisa

☐

3.2.2Female

Owesifazane

☐

3.3Marital status:

Isimo somshado:

3.31Married

Ushadile

☐

3.3.2Single

Awushadile

☐

3.3.3Divorced

Wehlukanisa

☐

3.3.4Widowed

Washonelwa

☐

3.3.5Separation

Sehlukene

☐

3.4Standard of education

Wagcina kwabani ngokwemfundo?

3.5

Occupation:

Umsebenzi:

3.4.1

Unemployed

Awusebenzi

☐

3.4.2

Self employed

Uyazisebeza

☐

3.4.3

Part-time employment

Usebenza itoho

☐

3.4.4

Full time employment

Usebenza ngokugcwele

☐

3.4.5

Casual employment

Usebenza okwesikhashana

☐

3.4.6

Student

Uwumfundi

☐

3.4.7

Pensioner

Uholo impesheni

☐

3.6

How many children less than 21 years in the house? _____

Zingaki izingane ezingaphansi kweminyaka engu 21 ekhaya?

3.7

How many members of the family are employed? _____

Mangaki amalungu omndeni asebenzayo?

3.8

Total number of members in the family _____

Nibangaki seninonke emndenini?

3.9 Since when did you know the child's health problem?

Wayazi kusukela nini inkinga yomntwana?

☐

3.9.1 Before the nurses

Ngaphambi kwabahlengikazi

☐

3.9.2 After the nurses visit

Emuva kokubonana nabahlengikazi

3.10 Did you receive any advice to send your child for treatment?

Wasithola yini iseluleko sokudlulisa umntwana ukuthola unyango?

Yes / Yebo

☐

No / Qha

☐

3.11 If yes, from whom did you receive the advice?

Uma wasithola iseluleko, wasithola kubani?

3.12 Did the school nurse send you a referral letter for your child's health problem?

Umdlengikazi wezempilo wakuthumela yini incwadi yokudlulisa umntwana ngokwenkinga yempilo?

Yes / Yebo

☐

No / Qha

☐

Do not remember / Angisakhumbuli

☐

3.13 Has the child been treated for the health problem? Yes / Yebo

☐

Ingane isiyelashelwe leyonkinga?

No / Qha

☐

3.14 If yes by whom?

Uma kunjalo yelashwa wubani?

3.15 If no, why was the child not treated? _____

Uma ingelashwanga ayelashwanga ngani?

3.16 What is your opinion about visits to schools by school nurses to screen children for health defects and to give health education?

Sicela umbono wakho ngokuhambela kwamanesi ezikoleni ezohlola izingane nokufundisa ngezempilo

REMARKS:

ANNEXURE B

CHECKLIST TO MEASURE THE PROCESS OF HI : KZN.

SECTION A: Comparing HI in KZN

- 1. Name of school.

- 2. Type of school

- 3. Target classes

- 4. Total enrolment

- 5. Total enrolment in target classes

- 6. Total children seen in target classes for HI

- 7. Total children seen outside target classes

- 8. No. of children with health problems

- 9. No. treated at the school

- 10. No. referred for treatment

- 11. No. of parent, teacher, sibling interviews
- 12. No. of home visits

SECTION B: Follow-up visit

- 1. Date of follow-up visit
- 2. No. of children reviewed
- 3. No. of children treated on referral.....
- 4. No. of children who did not go for treatment
- 5. No. referred for treatment.....
- 6. No. of Parent, teacher, sibling interviews
- 7. No. of home visits.

SECTION C - School Health Service Procedures.

ACTIVITY	DONE	NOT DONE
Preparation of the class room		
Group health talk		
Weight		
Height		
Eye test		
Hearing test		
Dental check		
Scoliosis check		
Ear examination		
Head to toe		
Heart		
Lungs		
Polio Drops		
Diphtheria, tetanus vaccine		
Clothing		
Personal hygiene - body, hair, clothing		
Parent interview		
Home visit		
Parents meeting.		
Checking safety of the environment		

SECTION D - Nearest referral services to the school

SERVICE	DISTANCE AWAY
Mobile clinic	
Fixed clinic	
Hospital	
Private Doctor	
Dentist	
Social worker	
Child counselor services	
Optician / optometrist/ eye specialist	
Ear, nose and throat services	
Orthopedic department.	
Supplementary services (e.g. Speech)	
Specialist doctors	

SECTION E - School health team visiting the school.

CATEGORY	NUMBER
Registered Nurse	
Enrolled Nurse	
Auxiliary Nurse	
Health Assistant or SASO	
Clerk	
Driver	

ANNEXURE D**QUESTIONNAIRE FOR COSTING SCHOOL HEALTH SERVICES 1997**

1. Total number of schools visited in 1997

2. Total number of children seen on 1997

For example:

- pupil screened only
- pupils examined only
- pupils screened and examined
- pupils treated

3. Parents interviewed in 1997

4. Home visits conducted in 1997

5. Number of parents' meetings held in 1997

6. Total kilometers traveled

7. Type and size of car

8. Staff establishment

NAME & SURNAME	CATEGORY	PERSAL NUMBER	SALARY

9. EQUIPMENT

Please list all the equipment that you have and estimate the price (just list the items, I will estimate the cost)

10. Stationery

Please indicate:

- Number of pens ordered
- Number of papers used the whole year
- Number of school files
- Number of staplers
- Etcetera

11. Telephone (Please estimate the cost of official calls made)

12. Office equipment (Please estimate the value of office equipment)

If no equipment was bought in 1997, say how old your furniture is and please list it item by item, e.g., 2 chairs, 1 table, 1 fan, etc.

13. Capital works

If your office rented or renovated please indicate

14. Electricity and water

If possible, estimate how much your unit was charged for the above in 1997.

15. Medication

With the help of your order books and stock control cards, please indicate how much and what type of medication was used in 1999.

16. Other expenses

If you know of any other expense that I have not mentioned please include them.

ANNEXURE E

UNIVERSITY OF NATAL
FACULTY OF MEDICINE
INTER-OFFICE MEMORANDUM

TO: Mrs DT Memela
Dept of Community Health
Faculty of Medicine

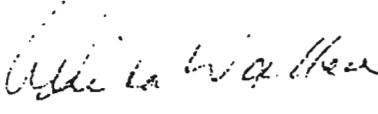
FROM: Mrs V Ireland
PostGraduate Administration
Faculty of Medicine

19 December, 1995

PROTOCOL REVIEW OF THE SCHOOL HEALTH SERVICE (SHS) IN
KWAZULU/NATAL DT MEMELA, COMMUNITY HEALTH (093/96)

The Ethics Committee has considered your reply to the queries with regard to the above-mentioned protocol and found it acceptable. Ethical approval is granted.

The Higher Degrees Committee has considered your reply to the queries with regard to the above-mentioned protocol and found it acceptable. The study is approved for an MMedSc thesis.


MRS V IRELAND
PostGraduate Administration

/s/ethics/nie tele.3

ANNEXURE F

DEPARTMENT OF EDUCATION AND CULTURE
UMNYANGO WEMFUNDO NAMASIKO
DEPARTMENT VAN ONDERWYS & KULTUUR
Province of KwaZulu-Natal / Isifundazwe saKwaZulu-Natal / Provinsie KwaZulu-Natal

Street Address/Isithethi nalolu kulu/Struataadres:
22a Pietermaritzburg Street, Pietermaritzburg

Postal Address/Isithethi likaposa/Postadres:
Private Bag 9044, Pietermaritzburg 3200

Telephone/Ucinga/Teléfono: (0331) 552111

Facsimile/Isikhulimisi/Fax: (0331) 943808

ENQUIRIES/IMIBUZO/NAVRAE: Mr R G Pearce

REFERENCE: 2/12/23

24 July 1996

Ms M Taylor
University of Natal
Faculty of Medicine
P.O. Box 17039
Congella
4013

Dear Ms Taylor

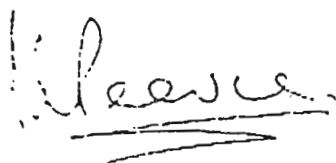
PERMISSION TO UNDERTAKE A RESEARCH STUDY

After careful consideration by the Committee for Research Proposals we have pleasure in granting Mrs Memela, Mrs Nzimakwe, Mrs Morar and Ms Taylor permission to undertake the study on the effectiveness of the components of School health services.

The schools you have requested to use as part of your study are Ehongha, Ekwe-
nani, Caluza, Hlelingomuso, Nottingham Road State Aided, Islamia, Rosefern,
Pier Retief, Richmond State Aided, Emowini, Ntintwa, Mayeleleni Eshane
Khangungqusha, Sweetwaters, Lutho, Luhana, Lubomvana, Fikesthe.

Please make the relevant arrangements with the respective Principals. Remember the final right of entry is at the discretion of the relevant school principal. Should you have any problems please request the principals to contact Mr Pearce at the above number.

Yours sincerely,



ACTING SUPERINTENDENT GENERAL