

An effective and efficient roll out of Human Papilloma Virus (HPV) vaccine in schools

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Introduction

Human papillomavirus (HPV) is a viral infection that is passed between people through skin-to-skin contact. There are over 100 varieties of HPV, more than 40 of which are passed through sexual contact and can affect your genitals, mouth, or throat.

South Africa's national HPV vaccination campaign is a public school-based initiative to provide free vaccination to all Grade 4 girls aged 9-12 years. The vaccination campaign entails a 2-dose schedule—the second dose is provided 6 months after the first. The campaign was housed within the relaunched Integrated School Health Program (ISHP)—a program jointly implemented by the NDoH and the Departments of Basic Education (DBE) and Social Development (DSD). Grade 4 was used to identify those most likely to be 9 years old, the youngest age cohort eligible for the vaccine.

The importance of this topic is to assess the current roll out of HPV Vaccine to schoolgirls between the ages of 9 and 12 in public schools and to investigate if there are better ways to roll it out. Is the costs of having a separate vaccination programme running parallel with the immunisation programme justifiable or could it be merged and have one programme.

The Northern Cape Provincial government needs evaluate on a regular basis programmes that can be merged with others or provided in a different and efficient format.

The investigation is based on the Northern Cape Department of Health, which has taken the lead role in implementation in collaboration with Department of Education.

The investigation is based on the 2018/19 financial year actuals, which is the first year the HPV conditional grant was introduced to provinces.

Summary

According to statistics from the National Cancer Registry (NCR) 2014, the top five cancers affecting women in SA include: breast, cervical, colorectal, uterine and lung cancer.

Both **breast** and **cervical** cancer have been identified as a national priority with increasing incidences occurring. Approximately 19.4 million women aged 15 years and older live at-risk of being diagnosed with one of these cancers. In 2013, deaths from breast cancer and cancers of the female genital tract, accounted for 0.7% and 1% of all deaths in South African respectively. We need an urgent intervention in order to slow the pace at which these young women are diagnosed with cervical cancer.

The HPV vaccine roll out is intended to reach girl children in public schools between the ages of 9 and 12 years. There is a total number of 12905 girls between 9 and 12 years attending public schools in the Northern Cape. The department initially intended to administer the vaccine in two dosages 6 months apart from each other. This roll out was in previous year conducted separate from the normal immunisation programme. Based on my research it would be wise and cheaper to roll out the first dosage during the immunisation programme whereby the department would use the same nurses to roll out the HPV drug.

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1. Introduction

The topic of my PER is with respect to the roll out of HPV vaccine to schoolgirls in the ages of 9-12 years in public schools. This topic is of great importance to the Health and Education sectors. A healthy citizenry translates to improved education outcomes, a skilled workforce, and an oiled economy that transforms the lives of its citizens. The purpose of the programme launched officially in 2014 by the Minister of Health Dr Aaron Motsoaledi, is to reduce the incidence of cancer of the cervix through the introduction of the HPV vaccination to grade 4 school girls and give before they are exposed to HPV infection. The HPV vaccination campaign is part of the Integrated School Health Programme driven the Department of Health and Education.

The programme is intended to benefit young women in the country, who are the most vulnerable to the disease.

2. Policy and Institutional Information

My PER refers to mainly the Integrated Schools Health Policy and focuses on the services offered by the Department of Health and Education in the Northern Cape in terms of rolling out this very important vaccination programme.

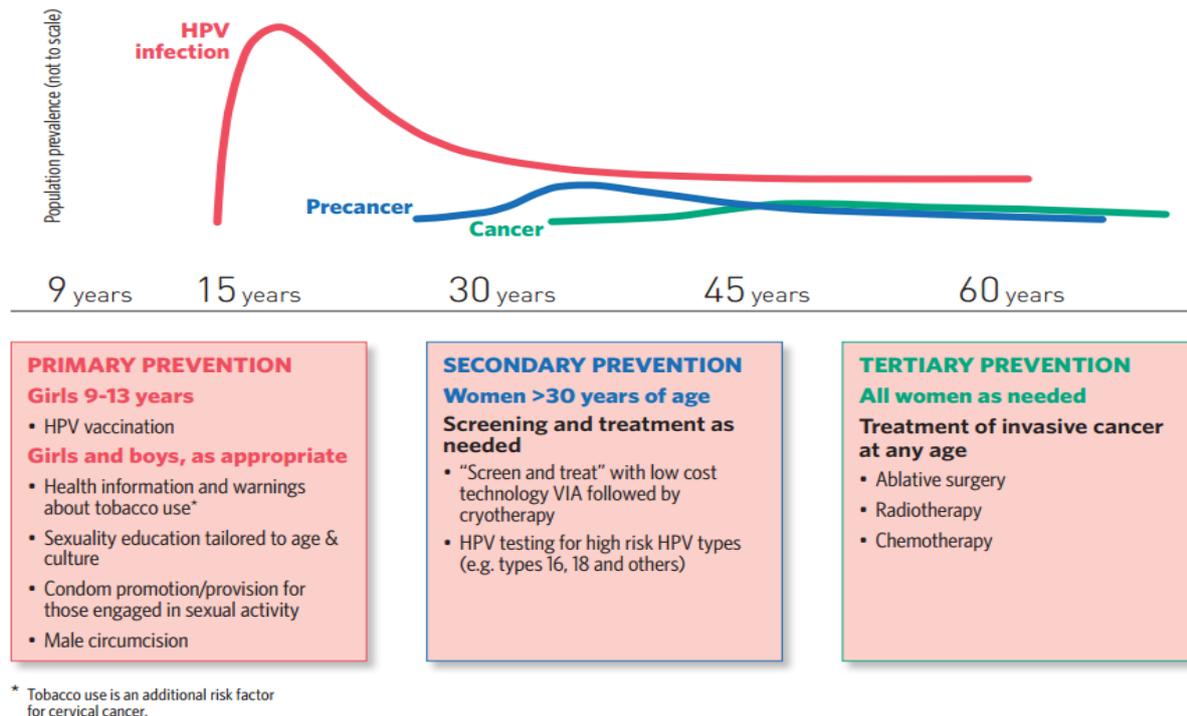
Several other acts have particular relevance to implementation of the Integrated School Health Policy (ISHP). These include:

- The Constitution of South Africa (Act No.108 of 1996)
- The Children's Act (Act No.38 of 2005) as amended.
- The South African Schools Act (Act No. 84 of 1999)
- The National Health Act (Act No. 63 of 2003)
- The Mental Health Care Act (Act No. 17 of 2002)

The Department is lead implementing agency in respect of this HPV vaccination. This department is responsible for procuring the right vaccine and medical supplies in the right

quantities for the roll out and also responsible for training additional nurses on how to administer the dosages to the children.

Fig 1. Prevalence of Cervical cancer and prevention



The Diagram above is the ideal prevention solution extracted from the World Health Organisation (WHO), which shows that the primary prevention phase is between ages of 9- 12; and this is the phase that is currently adopted in the ISHP by South Africa and at provincial level. Government has decided to intervene and roll out the vaccine during the ages of 9- 12 yrs to all girls in public schools in order to slow the rate at which women are diagnosed with cervical cancer.

This programme is a Health initiative but is delivered at public schools, which are under the auspices of the Department of Education; hence there is a need for collaboration and a better roll out model.

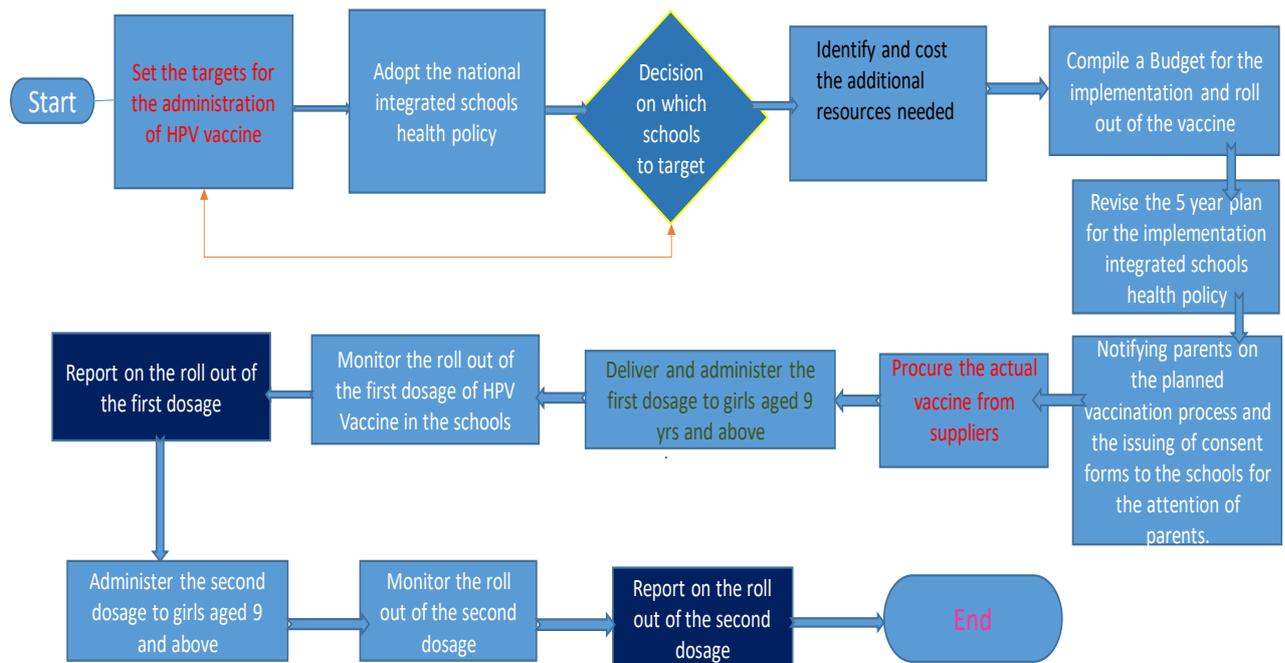
3. Programme Chain of Delivery

The DOH district directors compile provincial school health policy, which has been adopted from the national department's national policy. The draft policy is then presented to the Head of Department for concurrence and approval. The importance of having an approved policy is gain political buy-in and for information sharing with school governing bodies and eventually with parents. The policy will give guidance as to which schools and children are entitled to receive the vaccine. The policy is then gazetted in the government gazette, which is then implemented in public schools. The costing of the vaccination programme is developed by the districts and submitted for to Head office to draft a budget for the programme. The budget is then presented to Head of department for approval and signed off. After sign off, the actual procurement of the vaccine and medical supplies happens. This then runs parallel with the training of nurses and teachers who will administer the vaccine to the eligible children.

Consent forms in the department's letterhead are then issued to schools for the attention of the affected parents, who must then fill the forms and return to the schools. The department will then collates the information and the actual vaccination will be carried out to the children at the schools on a predetermined date.

The information and learner turnout of the vaccination programme is collated and reports are compiled for Head of Department who will then shares the report with the MEC of Health and the Portfolio Committee on Health. These reports are then forwarded to the National Department of Health for the attention of the Minister of Health.

Fig 2. Process flow of HPV vaccination Programme



4. Expenditure Observations

The HPV grant was only introduced in the 2018/19 financial year to provinces. My PER expenditure data relates only to one history year and 2020 MTEF projections. The budget of Northern Cape was to R4.6 million in 2018/19 financial year. The Department of Health spent 99 percent of this budget with a minimal underspending. Most of the costs, to be precise 92 percent relates to the actual vaccine, travelling, and subsistence.

Fig 3. Actual expenditure analysis and projections

Sum of Total_ Expenditure Row Labels	Column Labels	Projected growth			Share analysis					
		2018/2019	Grand Total	2019/20	5.10%	5%	4.80%	2019/20	2020/21	2021/22
ADVERT:MARKETING	R	15 705	R 15 705		16 506	17 332	18 164	0.3%	0.3%	0.3%
CATERING	R	17 035	R 17 035		17 904	18 799	19 701	0.4%	0.4%	0.4%
COMMUNICATION	R	-	R -		-	-	-	0.0%	0.0%	0.0%
OPERATING LEASES	R	-	R -		-	-	-	0.0%	0.0%	0.0%
SALARIES	R	-	R -		-	-	-	0.0%	0.0%	0.0%
SURGICAL/MEDICAL SUPPLIES	R	156 090	R 156 090		164 050	172 253	180 521	3.4%	3.4%	3.4%
SYRINGES AND NEEDLES	R	137 614	R 137 614		144 632	151 864	159 153	3.0%	3.0%	3.0%
TRAINING AND DEVELOPMENT	R	-	R -		-	-	-	0.0%	0.0%	0.0%
TRAVEL AGENCY FEES	R	25 974	R 25 974		27 299	28 664	30 040	0.6%	0.6%	0.6%
TRAVEL AND SUBSISTENCE	R	256 917	R 256 917		270 019	283 520	297 129	5.6%	5.6%	5.6%
VACCINES	R	3 991 781	R 3 991 781		4 195 362	4 405 130	4 616 577	86.8%	86.8%	86.8%
Grand Total	R	4 601 116	R 4 601 116		4 835 773	5 077 561	5 321 284	100.0%	100.0%	100.0%

The expenditure outcomes of 2018/19 financial year are not a true reflection of the performance of the grant. The allocation of 2018/19 financial year was 99 percent spent as at end of March 2019, but the actual turnout of children that received the vaccine is way below the target of 12804 children that was set in the Annual Performance Plan.

Fig 4. Direct costs and overheads

Cost Drivers	2018/2019	Grand Total	2018/2019	Pareto analysis
				80/20
Direct costs				
VACCINES	R 3 991 781	R 3 991 781	86.8%	86.8%
TRAVEL AND SUBSISTENCE	R 256 917	R 256 917	5.6%	92.3%
SURGICAL/MEDICAL SUPPLIES	R 156 090	R 156 090	3.4%	95.7%
SYRINGES AND NEEDLES	R 137 614	R 137 614	3.0%	98.7%
Overhead costs				
TRAVEL AGENCY FEES	R 25 974	R 25 974	0.6%	99.3%
CATERING	R 17 035	R 17 035	0.4%	99.7%
ADVERT:MARKETING	R 15 705	R 15 705	0.3%	100.0%
COMMUNICATION	R -	R -	0.0%	100.0%
OPERATING LEASES	R -	R -	0.0%	100.0%
SALARIES	R -	R -	0.0%	100.0%
TRAINING AND DEVELOPMENT	R -	R -	0.0%	100.0%
Grand Total	R 4 601 116	R 4 601 116	100.0%	200.0%

5. Performance

The investigation into the performance of the current HPV vaccination programme has revealed that during the 2018/19 financial year 12804 schoolgirls between the ages 9-12 were targeted to receive both dosages of the vaccine. The actual beneficiaries who received the first dosage were only 9017, while those that turned out for the second dosage dropped to 6439. Clearly, the programme failed to reach the intended targets and is not achieving the objectives in the current format. The HPV grant to provinces was only introduced in the 2018/19 financial year and there is not a lot of data to share at the moment, but the performance of the financial year under review shows clearly that the Northern Cape Department of Health is under performing and some sort of intervention is needed to accelerate the roll out of this important vaccine.

6. Options

The possibility of doing things differently and cheaper do definitely exist. **Firstly**, the roll out of HPV vaccine can be incorporated into the whole immunisation programme and in that way we might save significantly on some of the costs. **Secondly**, we can explore the route of clustering some of the schools together and roll out the programme on different dates to different clusters. **Lastly**, there is an option of only rolling out only the first vaccine instead of both vaccines, but this might increase the risk and increase the costs of treating the actual cancer when it does eventually occur. For this PER, only one scenario is explored; which is by incorporating the programme in the immunisation programme.

To have a realistic costing model, I will need to use all the costs involved in effectively rolling out this vaccination programme. Some of the major cost drivers and inputs associated with this programme will surely be following:

1. Vaccine prices;
2. Travel and subsistence costs;
3. Surgical/medical supplies costs; and
4. Syringes and needles costs

And some of the variable costs that will influence the cost are, travel and subsistence, number of required vaccines, number of schoolgirls aged 9-12 years, number of days/ frequency to roll out the vaccine and other needed medical supplies like cotton wool and sterilizers.

7. Recommendations

The report shows that if we incorporate the HPV vaccine roll out with the normal immunization programme it would save the Department of Health a lot of money and make it possible to reach more girls between ages of 9 and 12 compared to the 2018/19 financial year.

The same nurses that conduct the immunization programme in public schools would then also administer the first dosage during the immunization and the second dosage six months later. This will bring the administrative cost and travelling costs down because the same people will be doing the work and travelling together. The only costs that would increase or remain in more or less the same range is the vaccine itself.

8. Action

To have a successful vaccination programme, the department must incorporate the HPV programme into the immunisation one for the first dosage. I will continuously monitor the implementation of the programme. I will continue to raise this concern in the different forums that we have with the Department of Health. During the Provincial Medium Term Expenditure committees and the Provincial Budget Lekgotla, this proposal will be made to the management of the department.

Because the HPV vaccine has only be around for two years now, we will monitor the performance of the programme very closely and make recommendations to the department.