

# Free statement of the problem essay sample

[Countries](#), [Canada](#)



## **Final Report**

### Background of the Study

The research majors on immunization of newly born babies and children aged below 5 years in Canada, New Brunswick. Children below the age of 5 are prone to infection by contagious diseases. Vaccines come in handy as a preventive measure that reduces the chances of infection for this vulnerable section of the population in Brunswick. However, the administration of the vaccines is only possible after the children's parents given their consent. The primary objective of administering vaccines is to attain global health for children all over the world.

Vaccinations are secure and effective ways of ensuring children are safe from viral and bacterial infections (government of New Brunswick, 2013, p. 2). It is cost effective to prevent and control the spread of preventable disease other waiting to treat the infected children. However, high costs pose a risk to the process of vaccination. The government of New Brunswick has advanced the New Brunswick Immunization Program which administers vaccines by customary, contagious and high risk diseases.

In New Brunswick, vaccines are funded publicly. They are also available to all residents. Residents need to contact a Public Health centre or a doctor for them to acquire the notification purposes and the immunization record of New Brunswick. The Routine Immunization Schedule is set up by the Chief Medical Officer of Health. The schedule recommends the vaccines to be administered by the Public Health and other health care providers within the locality. The following table is an illustration of a schedule for immunization of a sub-population of children aged below 5 years.

### (a) Purpose of the Study

The main objective of the study is to establish ways of increasing and developing stronger immune systems new-born babies to children aged 5 years, over the forthcoming ten years. Public health is an area of concern since it affects young children within the locality under study and the areas beyond. Vaccination is a great achievement in the public health sector which has had widespread effect on the achievement of optimal health. It has promoted the growth and development of young children.

However, lack of vaccination among this age group of children weakens their immune system and makes them prone to the risk of acquiring diseases like measles, hepatitis and poliomyelitis. These diseases may result into premature deaths and prolonged hospitalization of children. As a result, the diseases are the dependent variables since they are the consequences of inadequate immunization (Sekaran, 2012, p. 3). The research investigates the immunization of children below five years in connection to public health. The process of immunization and the children are the independent variables. Consequently, the aim of the study is to explain the variability of immunization with regard to the age group concerned in New Brunswick.

### **The relationship is shown in Figure 2 below:**

#### (b) Research Question

The research is centred on how approaches to be used in future would guarantee optimal rates of immunization for the future population in New Brunswick. This future population is at risk of suffering from preventable childhood diseases. As a result of this risk, it is necessary to reform the health care system into a reliable, all-inclusive and responsive system. Such

a state-of-the-art system will improve the rate of immunization for all children below 5 years.

The question also persuades the society within the province to change its attitude. The society will also be required to provide appropriate leadership. For its success, the objective needs steady, predictable and sufficient devotion to executing and funding the exercise. Medical practitioners in New Brunswick also need to question the customary methods of immunization of babies and children below the age of 5.

### **Scope of the Study**

The jurisdiction of the study is limited to new-born babies and all children aged below 5 years. This group is vulnerable to disease attacks due to an underdeveloped immune system. The research also limits itself in New Brunswick province in Canada.

Information will be acquired from providers of immunization like pharmacies, family doctors, clinics and other medical practitioners. Social and political institutions like schools, the Department of Health, Public Health and the government are also important sources of immunization information in the study.

### **Relevance of the Study**

The study seeks to solve a health issue in New Brunswick province. The desired result is to find new methods and approaches that will increase the rate of optimal immunization in the province. According to the research, this optimal rate needs to be achieved in a period of ten years for the targeted population of babies and children below 5 years of age.

Use of data analysis in the research addresses ethical issues where certain parties may not agree with the decision of the Public Health sector to conduct an immunization exercise on all the children below 5 years. The disagreement may arise from the cultural or religious beliefs. However, the research will enable such individuals to appreciate the need for immunization because their cultural doctrines may not entirely eliminate the risk of disease infection by the children. The study is relevant as it seeks to let the people in the province to understand the importance of immunization. It may even infringe the personal liberty of an individual for the greater good (Bayer, 2007, p. 4)

## **Research Design**

The research methods used in the study are modern and as such, they require a scientific approach when dealing with important parts of the research. These critical stages of the research are found in its methodology which includes collection of data, analysis of data and presentation of data. Data has to be presented in a manner that can be understood by any individual who wishes to make use of the data, even if they do not possess the technical skill to interpret it. The critical stages must be carefully considered for a comprehensive research endeavour.

## **Data Collection: Sampling and Field Experiments**

Collection of data is not a simple exercise. The data must be collected using scientific procedures so as to avoid exaggeration and bias. Data collected from health practitioners must be accurate since it can be used to come up with decisions that impact on the lives of human beings.

Consequently, this research requires following a precise procedure when choosing the people to be interviewed. This is made possible by field experimentation and sampling. Our goal is to select our respondents by using random sampling.

## **Sampling**

A permissible sample method is selected to enable the collection of data from clinics, homes, hospitals and other related health care providers. It is necessary for us to collect a substantive amount of data relating to current vaccines and those that can be administered in the future. The data will also enable our research to reflect the level of preparedness of health care providers to meet the optimal immunization demands, the number of children who access the vaccines, leadership of the program and funding. This data will provide the basis of determining how much the government and the community can intervene to ensure optimal immunization. Our research will employ random sampling to conduct interviews through:

- Posting questionnaires to government organizations and health facilities.
- Conducting interviews on several leaders in selected facilities.
- Interviewing respondents from 3 health facilities (static departments).
- Interviewing at least 10 children from three learning institutions.

Data collection will also involve searching for information on the rate of mortality and the birth rate of specific localities from government websites.

## **Field Experiments**

Our sources of data need to include experiments in the field on optimal types of vaccines and their level of effectiveness. However, we do not use

experiments because the data collected on the children is enough to help us draw conclusions on the measures that should be adopted in the next decade.

As a result, our field research will involve interviewing children from various schools and homes. We will use phone calls, e-mailed questionnaires and some face to face interviews within New Brunswick.

### **The following figure represents a sample questionnaire used on each individual child interviewed.**

#### Sample Questionnaire

##### Questionnaire to be used in Health Facilities

##### Literature Review

Our literature review is also an important source of data for us. The literature review will be detailed to provide information on the following areas:

- Modern types of vaccines and how effective they are
- Cost factors of vaccination
- The best procedure to be followed in order to increase the accessibility to vaccines.
- Intervention measures that can optimize administration of vaccines.

### **Data Analysis**

After the collection of data through interviews, questionnaires and literature review, the data must be analysed in detail. Scientific methods are used to come up with reliable conclusions and recommendations relating to the problem.

## **Quantitative Analysis**

The data collected will be tabulated to indicate the present scenario, the expected scenario and the possible interventions that can be made. This data will be revealed in the interviews. On the other hand, data collected by use of questionnaires will be coded and thus subject to further analysis. The data will be in tables to present a simple view for comparison purposes. Tabulation will also simplify the whole process of analyzing the collected data.

### **The Summary Tables below will be drawn for 3 health facilities.**

- Frequency tables

## **Type of Interventions**

Pie Charts

We will draw two pie charts

- The first chart will compare the number of children expected to be immunized per every facility with those who are already immunized.
- The second pie chart will compare the number of male children immunized against the number of females who are also immunized.

### **After presenting the data, it is edited and mathematical formulas are applied for calculations.**

Mathematical formulas such as those used to compute measures of central tendency will be applied to analyze the data presented. Editing will involve discarding incomplete and biased responses. This will increase the reliability of the data presented. We will then come up with a summary of all the data



in prose which will indicate the attitude, preparedness, financing, effectiveness and the drawbacks encountered during immunization by medical facilities.

## **Hypothesis Testing**

This part of data analysis involves calculations which validate or invalidate our assumptions. Testing hypothesis is very important when drawing conclusions and making the final recommendations. These calculations include:

- The mean number of children immunized against their ages.
- The mean number of children born each year in a facility
- The expected number of children to be immunized in each facility.

## **Validation and Invalidation against the Mean**

For every research conducted, for instance immunization for reducing the mortality rates, the mean number of deaths reported will be used against the number of births registered. The simple mean is important in comparing the hypothesis with what really exists on the ground. For instance, the mean number of children below 5 years of age who die with or without immunization can be used to evaluate the mortality rates. Means or averages seek to validate the importance of immunizing new-born babies and all children below 5 years.

## **Regression Technique**

Hypothesis will be validated basing on simple regression that was used to guide the data collection process. Simple regression is applied because variables are studied autonomously and verification of on the individual

aspects of public health done later. We will consider the case of late immunization on the health of children. In this case, simple regression is used to connect the two variables. The health of the child is the dependent variable while their age is the independent variable.

## **Qualitative Data Analysis**

Qualitative analysis indicates the reliability of the data. As a result, it is used to draw conclusions and make recommendation after the research. It involves the following steps:

- Display of data
- Conclusions and recommendations
- Validation

## **Data Display**

### Conclusion and Recommendations

After display of data and its validation, the conclusion and recommendation stage comes in as the final part of data analysis. The conclusions relate to objectives of the study and the hypothesis on which the study was based. In this research based on achieving an optimal level of immunization in the next 10 years in New Brunswick province, the conclusion will point out the following issues:

- Whether immunization is significant or not.
- Whether increased awareness will assist in attaining optimal immunization
- Factors influencing immunization such as culture and religion and how these factors can be dealt with in the coming ten years.
- Funding the process of immunization.

- Traditions affecting immunization of children
- Other resources involved in immunization such as personnel
- Health care education relating to immunization
- Types of vaccines that will be ideal for children in the next ten years.

## **Time Frame of the Study**

This research can be comprehensively carried out for 9 years where the same procedure is repeated every year. The report can then be handed over to the sponsors of the immunization process in the tenth year after accurately determining the right procedure to be followed to attain optimal immunization. Mini-reports can be filed every year before coming up with the conclusive report that will file all the requirements for the sponsors.

## **Cost Factors of Optimal Immunization**

The cost factors of immunization set in through big data. Visualizing datasets can be powerful in the medical sector. It is difficult to keep records of all the patients in the province yet the exercise calls for accurate record keeping to ensure that all the children in the province are immunized. This is costly where the records have to be kept manually.

Big data technological advancement will make sure that the cost of carrying out immunization reduces by a substantial amount. Technology will help sort out most of the problems related to medicine by hastening the immunization process. It will also help in administering the vaccines to the children.

Doctors will be able to analyze data connected to the vaccines administered. Incorporating immunization program into the relevant data will help to reduce the chances of complication, re-admission and the rates of mortality

in the province (Government of New Brunswick, 2014, p. 10).

Big data assists in controlling huge amounts of information. It also adheres to the necessity to retain the confidentiality of some information given by patients. It asserts that privacy is not yet dead hence parents should not be afraid of their children being stigmatised. The big data technological advancement is effectively being utilized in New Brunswick by the medical practitioners. The practitioners use big data information to set up analytical tools intended to improve healthcare for both patients and stakeholders. The cost incurred by the province for immunization varies from one year to another. This cost depends on the birth rate of the province as the years go by. The research conducted over the 9 year period establishes the average cost incurred by the province every year. After arriving at the weighted average value, the cost of immunization for the province can be expected to reduce by a half. However, in the first year, the costs may increase slightly as a result of the initial set-up cost of the big data system. The cost will then subside in the subsequent years because the big data system will lower the operational costs of the immunization process.

## References

Bayer, R. (ed.). (2007). Public health ethics. New York, NY: Oxford University Press.

Government of New Brunswick. (2013). Routine immunization schedule.

Retrieved from <http://www2.gnb.ca/content/dam/gnb/Departments/h-s/pdf/en/CDC/Immunization/RoutineImmunizationSchedule.pdf>

Government of New Brunswick. (2014). What you need to know about

<https://assignbuster.com/free-statement-of-the-problem-essay-sample/>

immunization. Retrieved from <http://www2.gnb.ca/content/gnb/en/departments/ocmoh/cdc/content/immunization.html>

Sekaran, U. (2012). Research methods for business. Hoboken, NJ: John Wiley & Sons.