**SUMMARY:**I investigated how vaccines have lowered the incidence of infectious disease in Australia in comparison to developing countries. To answer this question, I utilised a number of processes to gain valuable research that I could analyse in depth. These research processes included the following:

* Email and verbal correspondence
* Conducting interviews via email
* Accessing a variety of internet sites
* Visiting the state library
* Collecting primary sources

My outcome was an in depth, unbiased report, based on facts alone. Through this research I gained valuable insight into how vaccines themselves work and the factors that can impact their effectiveness. Consequently, I was able to make a thorough comparison between the number of cases of infectious diseases in Australia and developing countries and the impact vaccination has had on these numbers. In producing the report I gained a deeper understanding of the effectiveness of vaccines and the impact they have had on society.

(150 words)

**EVALUATION OF RESEARCH PROCESSES:**
**Internet Sources:**Analysis of internet sources was a valid research process as it improved my understanding of my research topic and began to decide what would classify as a key finding. The impact this process had was that I was able to narrow searches to specific topics, such as the efficacy of vaccines. Another impact was that I ensured my research was based around sources published by well-known organisations such as WHO to decrease my use of biased sources. This research process greatly impacted my key findings as I was able to accumulate information on the effectiveness of vaccines and most importantly on the difference in individual responses. A limitation of internet research was that it was difficult to find sources that were at an acceptable reading level. Many sources were too basic and lacking information or there was too much information that was at a much higher reading level than my own. Another limitation was that many of the sources were biased. Many contained significant bias and decreased their credibility and reliability. While some sources did reference opinions stated in the source and were therefore credible, some sources accessed were entirely opinionated and had no references and were therefore not credible. Due to this I did not use them as a reference for my outcome but I did gain some insight into the views by society, which allowed me to redirect further research and this process remained valid.

**Interviews:**Interviews with medical professionals were useful for gaining knowledge from their experience and became a highly valid process. They allowed me to gain a deeper understanding of why people need to vaccinate and what impacts vaccination rates in Australia and developing countries. It also enabled me to gain opinions from Dr Michael Rice and Dr Ben Saxon, a retired and current Paediatric Haematologist/Oncologist respectively. Their opinions are factually based, unlike parental interviews. This process enabled me to gain a deeper understanding of why vaccination is beneficial to society and how in areas of Australia and countries that have poor vaccination rates the incidence of infectious diseases increases. A limitation of this process was that it was difficult to fit into the busy schedules of the doctors I wanted to interview, meaning a lot of time was spent waiting on responses. The interviews were credible and reliable due to the numerous years of experiences of each doctor and their knowledge on the subject. While they were obviously biased for vaccination, their responses were not just opinions, they had experience with their answers and many other sources agreed with their answers. Due to this, interviews of medical professionals were highly valid and provided me with many key findings.

Alternatively, parental interviews were useful for gaining opinions of the wider public. This enabled me to gain the parental perspective of those for and against vaccinations and their reasoning behind their decisions. The impact this process had was that I was able to redirect my research to address the concerns. From this I ensured that my outcome addressed these concerns and provided an answer to make it more relevant to the public. A limitation of this process was that the answers given were based on opinions alone and there wasn’t any factual information gained. They were also not credible or reliable due to the bias of those interviewed and their lack of knowledge on the subject. Some answers did agree with other sources, but many of their opinions were completely their own and weren’t shared with those found in other sources. Due to this, the interviews were useful in directing future research, but were not a highly valid research process.

**Literature Sources:**In addition to the other research processes, literature research was carried out to broaden my range of sources. This enabled me to gain some written statistics, specifically from a Cosmos magazine article and the Australian Immunisation Handbook. This information proved useful for my key findings on the impact of vaccination in Australia, by providing statistics, but also for having a large list of concerns commonly held about vaccination. From this process I was able to research the concerns listed in more detail and gain a deeper understanding of parental concerns. A limitation of this process was that one of the most detailed sources was highly outdated, being published in 2000 and only having statistics from the 90’s. While the references and data inside it was credible in 2000, newer research has come along meaning it is no longer current or credible, which in turn means I could not use its statistics or risk contradicting new credible sources. Another limitation of this process was that the newspaper and magazine sources were heavily biased, which significantly reduced their reliability. The only valid literature source was the Australian Immunisation Handbook, which was proven to be credible and reliable as it was free from bias and contains references for its information.

**EVALUATION OF DECISIONS MADE:**Early on I decided to use the process of verbal correspondence to help direct my research and my interview questions and interviewee’s. I decided to do this with Dr Michael Rice due to his many years of experience. This proved difficult as I had to pass my questions through word of mouth and it took time for the message to go through. However, through persistence and keeping the lines of communication open I was able to gain valuable insight into how I could direct my research processes. The outcome of this was that I was able to direct my research appropriately as my project progressed. I was also able to develop better interview questions to improve the validity of my interview process, such as changing the wording to gain a better answer from the interviewee, and also who I should interview to gain the most findings.

Another decision that had to be made was to limit my use of literature sources. This was due to a variety of reasons, one source was out of date, and another was too biased to be considered reliable. This meant this process did not work very well initially and I had to expand my search, because I couldn’t base my research solely on internet sources. This meant I reached out to doctors at my mums work and they provided me with literature sources, most notably the Australian Immunisation Handbook. This proved to be helpful and revalidated literature sources as a research process. In overcoming this challenge I turned to further verbal correspondence to find relevant, current literature sources and was able to gain some valid literature sources.

One final decision that had to be made was weighing the opinions I found from sources. I wanted to have an outcome free of bias, but I knew varying opinions heavily impacted people’s decision to vaccinate. I had to collate all my internet, literature and interview research processes, sort the opinions out to produce an unbiased outcome. In overcoming this challenge I had to remain conscious of having my own personal bias when countering or agreeing with the opinions found in all my processes. This proved to be difficult, but by using my key findings I was able to produce an unbiased outcome which included the numerous viewpoints.

**EVALUATION OF RESEARCH OUTCOME:**The outcome produced from my research processes was insightful and interesting. Previously I had little knowledge on the subject and I was unaware of how vaccination works on a global scale. Once I began writing my outcome I gained a deeper understanding of not only the vaccination program, but also how and why the incidence of infectious disease is affected. This allowed me to produce a high quality outcome which was comprehensive even to those with limited knowledge.

I believe I answered my question in depth, whilst also making it understandable for those without medical knowledge. I determined some reasons behind why Australia’s incidence of infectious diseases is lower than that of developing countries and why vaccines are the reason behind this, but I did not cover them all. I was also able to include relevant information about the safety of vaccines and their effectiveness. The findings are reasonably good, due to the depth in which I was able to answer my question; however the findings were only based on a small amount of research, much more research would need to be conducted for it to be used professionally.

The research conducted allowed me to form a detailed answer to my question, not just a superficial answer. If published, my outcome could prove useful to parents of young children or those planning on having children. This is because of the explanation of the impact of vaccination on the incidence of infectious disease in Australia being relevant today. Due to the many references used to produce my outcome it could be classified as credible, however as I am no expert on the subject it could not be classified as reliable information. The research outcome is limited due to time constraints and access to information. To create a better outcome a longer research period would be required.

**Word Count:** 1,496