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A STUDY ON VACCINATION MONITORING DOG RABIES DEFENCE SYSTEM

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Abstract: Rabies is an illness that may spread from animals to people and is brought on by a virus. The rabies virus invades the mammalian nervous system. When biting or scratching someone, a rabid animal will mostly spread the disease through its saliva. The classical rabies virus still causes human rabies, which is nearly always deadly and for which no particular therapy is available anywhere in the world. To prevent dogs from getting infected with Rabies, When the dog is three months old, it receives its initial anti-rabies shot. The dog should visit the veterinarian annually for a booster shot. In this study, we discuss how microchip technology may be utilized to capture data on Bangalore's immunized street dogs and save it in our application's database, "VACCIDOG." The data on our application will assist offer an overview of street dogs that have had vaccinations. It will also cross-verify the vaccination information of a specific dog from a certain street with the aid of the distinctive ID supplied by the microchip.
This paper is a conceptual paper and the data required was collected through secondary sources only i.e., by the way of Review of Literature and by the opinions of the authors.

INTRODUCTION

Vaccination:
A vaccination is a chemical that is used to activate the immune system of the body to mount an immunological defence against a specific pathogen that causes disease, such as a virus or bacteria. When a person receives a vaccine, the immune response it triggers helps prevent them from becoming ill if they are exposed to the pathogen again in the future. Injections, oral dosages, and nasal sprays are just a few of the ways that vaccines can be given. In addition to helping to eradicate diseases like smallpox, vaccines have been a key tool in preventing and controlling the spread of numerous infectious diseases.

Dog Vaccination:
Dog vaccinations are given to dogs to boost their immune systems and give them protection from specific infectious diseases. The disease-causing germs or portions of them are weakened or killed in vaccines, which aid in the dog's body building immunity against the disease itself. By immunising dogs, we can stop the spread of illnesses that can be extremely dangerous and even fatal to humans and dogs. Vaccinations are a crucial part of being a good pet owner and may keep dogs healthy and safe from a variety of diseases. To determine the proper immunisation schedule and types of vaccines for each specific dog, it is advised to speak with a veterinarian.

Need for dog vaccination:
Dog vaccinations are crucial for a number of reasons:

- A variety of infectious diseases that can cause significant sickness, incapacity, or even death are protected against in dogs through vaccinations. These illnesses can spread swiftly among dogs and can be very contagious.
- Some diseases that affect dogs, such rabies, can potentially spread to people. Dogs can be immunised against certain illnesses to safeguard both canine and human health.
- Dog rabies vaccination is mandated by law in several nations in order to stop the spread of this fatal disease.
- Dogs can be vaccinated against a variety of diseases that can be expensive to treat. We can save money on veterinarian fees and other associated costs by preventing certain disorders.
- Vaccinating pets also contributes to the broader community's protection. By stopping the spread of illnesses, we can lower the possibility of outbreaks and defend neighbourhood dogs and other animals.

Overall, vaccinating dogs is a crucial part of ethical pet management since it keeps canines healthy, stops the spread of disease, and safeguards both human and animal health.

Need for dog vaccination against rabies:
Rabies is a terrible and frequently fatal disease that can harm both humans and animals, so it is imperative that dogs

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receive rabies vaccinations. The virus that causes rabies targets the nervous system and can be spread by infected animals' saliva, including dogs, bats, raccoons, and skunks.

To stop the spread of this terrible disease, rabies vaccination of dogs is mandated by law in many nations. The vaccination has been shown to be safe to use and to be very efficient in preventing canine rabies. Owners of dogs should make sure that their animals receive the appropriate regimen of rabies vaccinations. Puppies should typically receive their first rabies vaccination between the ages of 12 and 16 weeks, followed by booster doses every year.
Along with immunisation, it's critical to take precautions to keep dogs away from potentially rabid animals. This includes avoiding interaction with stray or wild animals and leashing canines.
Overall, rabies vaccination of dogs is a crucial public health practise that can aid in halting the spread of this fatal illness and safeguarding both canine and human health.

Website for a vaccination of dogs against rabies:
In this paper, we propose a website called “THE VACCIDOG”, that focuses on the vaccination status of dogs in Bangalore areas that are considered high in population of street dogs that are not vaccinated. We will target these areas and when successful collaboration with the BBMP team that is responsible for the vaccination of street dogs is achieved, we would collect and create a centralized database for all dogs with their vaccination status at the backend of our website. We would create and maintain this website with the data of the street dogs, by keeping successful communication with the vaccination team of street dogs in Bangalore. This project requires microchip technology to be installed in all street dogs after vaccinating them. Proper funding for this installation of street dogs to complete vaccination is necessary from the Government or any NGO. With this technology in place, We would be updating the database as and when the dog is vaccinated and updating the dog’s details as vaccinated by identifying it with the help of the unique ID of the microchip on the website.

The prerequisites for this project include the following key points:
- Focus on data collection: Our project places a particular emphasis on the collection and maintenance of data related to the vaccination status and identification of each dog. This data is critical for tracking the effectiveness of the vaccination program and identifying unvaccinated dogs.
- Centralized database: Our project proposes a centralized database that will store information on the vaccinated dogs and their identification numbers, which can be easily accessed by the vaccination teams and animal welfare organizations. This will enable quick and efficient cross-verification of vaccination status and identification numbers.
- Communication and record-keeping: Our project recognizes the importance of communication and record-keeping for the success of the vaccination program. It proposes the use of a website to facilitate communication between the vaccination teams and the database administrators and to maintain records of the vaccinated dogs.

The proposed concept uses microchip technology and a centralised database of street dogs' vaccination records to regulate and prevent the spread of rabies in Bangalore. The project will involve gathering information from the BBMP office regarding the vaccination status of street dogs, building a website called "THE VACCIDOG" to keep the information, and working with the BBMP team in charge of immunising street dogs. The website will be used as a tool for efficient record-keeping, data analysis, and communication.

The emphasis on data collecting, a centralised database, communication, and record-keeping are some of the project's essential components. The project places a strong emphasis on the necessity of excellent record-keeping and communication to guarantee the process's smooth execution.

REVIEW OF LITERATURE

A Lugelo, Katie H, A Czupryna, M. B., Lorraine M. M, Denise A. M, R Kazwala, Felix L, (2021) The authors believe that thermostable vaccinations expanded the scope and effect of large-scale campaigns to eradicate infectious illnesses including the smallpox polio, and rinderpest. A 2015 study found that trial storing at 30°C for three months had no effect on the effectiveness of the Nobivac® Herpes vaccination. It is unknown if the vaccination would be effective after preservation under more natural, variable temperature conditions. Ahmed L., Katie H., Machunde B., Rudovick k., Felix L (2020). This paper suggests that thermotolerant vaccines expanded the scope and effect of large-scale vaccination campaigns to eradicate illnesses including smallpox, polio, and rinderpest. A recent study found that trial storage at 30 °C for three months had no effect on the effectiveness of the Nobivac® Canine Herpes vaccination. We undertook research to create a passive chilling device (PCD) capable of storing thermotolerant vaccines at variable sub ambient temperatures. We developed unique PCD designs for local fabrication through a process of collaboration with local communities in Northern Tanzania. The efficiency of five PCDs for vaccine preservation under varied environmental circumstances was then evaluated in a series of field studies. A L Kahn, Debra K, (2017). The authors are of the believe that expanding the

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use of vaccinations in a set temperature chain (CTC) is one strategy to strengthen immunisation supply chains. CTC is an approach to enhance vaccine access and coverage, particularly among hard-to-reach populations. It allows certain vaccines used in alone antigen methods of distribution or campaign situations to be kept outdoors of the standard cold chain of +2 °C to +8 °C for a brief amount duration under controlled and monitored conditions suitable to the antigen's stability. ACTC normally entails a single trip of the vaccine into conditions not exceeding +40 °C for a particular number of days prior to vaccine administration. Felix J. L, Pieter A.W.M. W, Anna C, Guy H. P , Imam M , S Cleaveland, Mike J. Francis f , David J., Denny G.P. S, (2017). This study provides the first solid evidence that the antibody reaction of dogs vaccinated with Nobivac Rabies vaccine stored at elevated temperatures (up to 30 C) for several months is not inferior to that of dogs vaccinated with vaccine maintained at recommended cold-chain settings (2-8 C). A non-inferiority study comparing the four-week after vaccination serological opinions of Tanzanian village dogs injected with vaccine that was previously stored at hot temperatures for various amounts of time via those of dogs vaccinated with the same goods stored according to label recommendations was conducted. The neutralising reaction of antibodies following the use of vaccine that had been held for a maximum of six months at 25 C or three months at 30 C was specifically studied. Joanie R, Lauren F, D Maire, (2017). The authors are of the believe that the World Health Organization's (WHO) Immunisation Devices Programme-Performance, Quality, and Safety (PQS)-has been instrumental in bringing these to market. The authors investigate the advent of novel freezing equipment technology from 2004 to 2016, in addition to the involvement of PQS with this progression. Methods: This evaluation focuses on three significant vaccine freezing technology innovations: solar direct-drive freezers, for a long time passive cold boxes, and freeze prevention equipment that is user-independent. The authors utilised online information via WHO PQS, literature searches, and unreleased study findings for the review. Brian G. (2014). This paper suggests that vaccination has contributed to a huge difference on global health. Smallpox and rinderpest, two significant illnesses, have been eradicated. Since the establishment of WHO's Expanded Programmes of Immunisation in 1974 and the Global Alliance for immunisation and Immunisation in 2000, global coverage of immunisation against numerous key infectious illnesses of childhood has increased considerably. Polio is nearly eradicated, and its effectiveness of fighting smallpox makes the disease another possible target for elimination. Despite these achievements, over 6.6 million children die each year, with illnesses such as pneumonia and diarrhoea accounting for roughly half of these deaths, which may be avoided with immunisation. Increased use of the most recent bacterial conjugate and viral vaccines should result in an additional decrease in childhood mortality. Developing vaccines against more complicated illnesses, such as malaria, TB, and HIV, has proved difficult, with minimal results thus far. Dong-Kun Y., Ha-Hyun K., Kyung-Woo L., Jae-Young S., (2013). In this paper the work is concerned with Managing rabies in a host reservoir with immunisation is a successful approach for preventing rabies. The rabies vaccination has shown to be the most efficient tool for combating this lethal viral zoonotic illness of animals that are warm-blooded, including humans. Natural rabies infection in humans is invariably accompanied with rabid animal contact, and clinical symptoms can last from days to months. The disease's incubation period is determined by the location of the bite, the severity of the wound, and the percentage of infectious virus present at the moment of exposure. In humans, untreated instances have a 100% death rate. D. A. Henderson and Petra K. (2013). The authors in this paper feels that the last genuine instance of smallpox occurred over thirty-five years ago. Enough time has elapsed to provide an objective evaluation of what elements contributed to the eradication effort's success and what insights smallpox can teach to other initiatives. The multinational effort to eliminate smallpox was led by Professor D. A. Henderson. We offer an overview of D. A. Henderson's views on smallpox eradication here. This work is based on D. A. Henderson's Unither Baruch Blumberg Lecture, delivered at the University of Oxford in November 2012, as well as discussions and communication with Professor Henderson. Karen M, P.D. Burr, D.R. Snodgrass, R Sayers, (2004). The authors are of the opnion that following rabies vaccination, some cats and dogs fail to produce an antibody titre sufficient to meet the standards of the UK Pet Travel Scheme. Data from 16,073 samples of serum accepted to the Animal Labs Agency for serological testing among 1999 and 2002, 1002 tests submitted to BioBest between March and April 2001, and 1264 tests connected with one make of vaccine uploaded to BioBest between June 2001 and January 2003 were analysed to investigate this problem. A B Sabin (1973). This paper study that there is no single journal that contains the complete history of reduced poliovirus strains generated by one of us (Sabin, 1965) for vaccine manufacture. The author has received numerous requests for specifics such as separation and attenuation over the past few years, so he felt that compiling the data in the paper below could be both beneficial and useful to those involved in the manufacturing and oversight of poliovirus vaccine (oral) geared up from these strains.

OBJECTIVES

- To create awareness about dog vaccination against rabies
- To develop a website for dog vaccination against rabies

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RESEARCH METHODOLOGY

The focus of this essay is conceptual. The information required for this study was gathered from a review of the literature and from the perspectives of some members of the relevant groups, such as students who are paying residents and guests. Various articles are used to obtain some data as well.

LIMITATIONS OF THIS RESEARCH

The information needed for this study, which is conceptual in nature, was gathered from secondary sources, such as various journals and other papers. The authors of this work and a select group of other interested parties are the only ones allowed to express their opinions. Also, it is restricted to a review of the literature.

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