ABSTRACT: Evolving infectious diseases have been a reason for significant worldwide threats to health of human beings. In most cases, humans are unintentional hosts of an infectious cycle sustained by animal hosts, comprising insects as well. The rise of new contagious ailments such as severe acute respiratory syndrome (SARS), pandemic influenza and HIV/AIDS has revealed the susceptibility of humans to novel zoonotic health emerging intimidations. These infections are initiated by many different pathogenic agents. According to an estimate about 50 % of the approximately 1000 species of pathogens that are prominent in livestock and pets are zoonotic in nature. In past 60 years, many developed countries have effectively controlled zoonotic diseases through expensive public investments, easing synchronized involvements, comprising "test and slaughter," feed prohibitions, massive vaccination of livestock and wildlife, education, health, and milk pasteurization processes. These are extremely effective approaches of eradicating zoonotic diseases which necessitate important, effective, legal, and economic insurances. Main purpose of this mini review article is to highlight the origin and control of pandemic zoonotic diseases which are the demand of time and need of the present era.

Keywords: Eradicating, Infectious, Zoonotic, Significant, Pandemic, HIV, Insects, Livestock

INTRODUCTION

Zoonotic diseases are generated by various diverse groups of pathogens e.g. viruses, bacteria, and parasites. Moreover, from these evolving infectious diseases health of human beings have significant threats worldwide. In maximum cases, humans are unintentional hosts of an infectious cycle that is sustained by animal hosts, comprising insects as
well (Schelling et al., 2003; Alexander et al., 2012; Nyhus, 2016). The transmission of these zoonotic agents among humans, animals, and the environment upsets the human activities, their health and particularly affects economic areas. According to the Institute of Medicine (2009), zoonotic pathogens are main agents for more than 65% of emerging infectious disease proceedings in the past six decades (World Bank, 2010). The epidemiological studies against old pathogens like Mycobacterium bovis and various bacilli species showed they may transmit via ingestion of contaminated milk, or inhalation. However, by pasteurization practices there are fewer chances to gain digestive route infections as compared to airborne infections (Thoen et al., 2006). By research and knowing the route of transmission of these agents human ultimately is remained successful to prevent the spread of such diseases. However, by the rise of new communicable diseases such as Severe Acute Respiratory Syndrome (SARS), Influenza, HIV/AIDS, and pandemic COVID-19 have revealed the susceptibility of humans to new health emerging intiminations. Deaths and transmission of disease linked with HIV/AIDS have overwhelmed communities in certain countries and had led to worldwide fluctuations in the public health system. A speedy pestilence feast of SARS coronavirus in 2003, a triple reasserting H1N1 influenza in 2009, and COVID-19 together lead to in significant economic forfeiture as the pathogens subjugated. In some cases, they results in close down of worldwide travel and disturbed the whole trade systems. Susceptibilities of such type emphasized the need for an organized, preventive methodology that wishes to avert the spread, or even the preliminary occurrence of pandemics. An advent of unfamiliar pandemic mediators frequently appears to be naturally impulsive. Certainly, no pathogens have been anticipated earlier to their first advent. An appearance of these emerging infection agents most often appears to be random (Murphy, 1998). Although, sequence in the beginning and feast of novel pathogens can be prominent and are a fundamental part of observation strategy. According to Jones et al., (2008) more than sixty percent of the roughly four hundred evolving transferrable diseases that have been recognized since 1940 are zoonotic in nature. The agents are attention of specific public health interests (Oaks and Lederberg et al., 1992). Likewise, specific ecological expanses or boundaries in the people, livestock, wildlife, and the environment have been recognized as the origins of recent developing transmissible diseases, and thus are objectives for the strong surveillance (Jones et al., 2008). Exploration of former events has managed to an improved understanding of the drivers of emergence of Zoonotic diseases. These developments, coupled with an enhanced understanding of the dynamics of pathogens their transmission biology, evolution, increase and spread, help in potential possibilities to forecast pandemics. Here we review the origin and control
of Zoonosis.

**ORIGIN OF ZOONOSIS**

In the human population the roots of zoonotic diseases are too old and their first appearance was related to time when spread of certain diseases e.g. rabies, anthrax, plague, yellow fever etc. were common. Prior to 20th century awareness was developed about these zoonotic diseases when characteristic samples were needed to be exposed to control these diseases. In the spread of these diseases three factors are considered important; primarily the occurrence and growth rate of new pathogens one and still high, even when the improved surveillance worldwide is considered into justification (Jones et al., 2008), suggesting that energies to synchronize the worldwide strategies to fight pandemics are an appropriate level and of growing significance (Morens et al., 2004; Lederberg et al., 2003). Secondly, the advent of all main groups of emergent transmissible diseases associates strappingly with human population thickness, supportive to the hypothesis that appearance of ailments is driven largely by fluctuations in human systems, such as the extension of agriculture, ways of transport, trade, and modifications in land usage (Weiss and McMichael, 2004). Lastly, the appearance of animal pathogens from wildlife source (which have subjugated the pandemics of the previous 100 years) associated intensely with both human thickness and the worldwide distribution of biodiversity (Jones et al., 2008). SARS like diseases are appeared in China in 2003 and one of the important examples of zoonosis which is caused due to coronaviruses of bats. It was spread in humans due to use of bats as foodstuff (Wang et al., 2008). In the wildlife marketplaces of Southern China these bat viruses appeared to developed stage 1 pathogens and escaped over to civets earlier being spread to people (Guan et al., 2003). This coronavirus then observed for frequent cycles of spread in people, and later countrywide and then worldwide. A higher spread rates was recorded in dense populations as compared to thin populations, and transmission was every so often greatly enriched by air travel or human migration. The mathematics of such dispersion occasions is well recognized, and a sophisticated collection of computational replicas have been used to back-predict such happenings perfectly. Moreover, in the course of the summer of 2003, an outburst of monkey pox happened in the USA with 37 definite human cases (Reed et al., 2004). Monkey pox was an unusual zoonosis triggered by a poxvirus that characteristically happens in African continent. Monkey pox was first originated in monkeys in 1958 and after that it appeared in various other animals like rodents and African squirrel. Similarly, in various pandemic zoonoses like HIV/AIDS, they have also attained from animals (non-human primates) and later transmitted via constant person-to person contact (Keele et al., 2006). So, it is clear in zoonoses spread to human beings happened by interaction with diseased animals. The outburst was
epidemiologically connected to animals in various cases. Presently spread of COVID-19 is a good example of Zoonosis. In such cases the transport, trade, or dispersal of animals, or the introduction of animals into the surroundings, can signify a risk for transmission of zoonotic disease. Spatially, obvious imitations can be used to be familiar with the areas that mostly involved producing the next evolving zoonosis (so-called hotspots of developing transmissible disease) (Jones et al., 2008).

These are few main areas such as National Parks and their adjoined areas where human actions take place alongside background of extraordinary wildlife diversity, with connected microbial diversity (Dhakal, 2016). It was reported from the Chitwan National Park even with the bites of small animals such as insects some park visitors lost their lives. According to Kruse et al. (2004) wildlife animals are rich reservoir of pathogens and possible source for diseases transmission in humans. Aiming of surveillance to such areas delivers a justification for better distribution of global funds to preclude developing infectious disease or swiftly deals with outbursts (Keesing et al., 2010). The procedure through which pandemic zoonosis arise can be analyzed to recognize the vital controller points and definite research tasks. That human populations are frequently exposed to an extensive diversity of non-human animal pathogens. To measure the role of pathogens ecology in appearance, researchers need to identify how many people are exposed to pathogens. A complete account of data is not accessible, but if investigators have a sufficient working about understanding of pathogens of livestock and pets then it helps to evaluate the transmission of zoonotic diseases (species in recurrent interaction with humans). Nearly 50% of the approximately 1000 species of pathogens that are prominent in livestock and pets are zoonotic in nature (Cleaveland et al., 2001), suggesting that any blockades between these hosts and humans are regularly breached by many diverse pathogens. More than 50% of the recognized pathogens of humans can harm other vertebrate's host (Taylor et al., 2001).

Various non-human pathogens can harm numerous hosts, and vibrant examples of viruses relocating between diverse animal hosts to cause outbreaks in many other species have been described (Cleaveland et al., 2001; Parrish et al., 2008). Pathogens can be transferred from humans to animals and among various animal species before being shifted back to humans, permitting revising and evolution with spill-back and possibly heightened pathogenicity (e.g. influenza) (Barber et al., 2001; Dawood et al., 2009). Human pathogens comprised of all animal taxa. Approximately 80% of viruses, 50% of bacterial, 40% of fungal, 70% of protozoan, and 95% of Platyhelminthes's are infecting humans. Most of the recognized reservoirs of pathogens are studied in mammalian group (roughly 80%) or, to a lesser extent in birds (Taylor and Woolhouse et al., 2001; Woolhouse and Gowtage-Sequeria, 2005). Although
people are also sharing some pathogens with invertebrates, which act as a vectors (Kilpatrick and Randolph, 2012) or intermediate hosts. Recognition of the key taxonomic groups that are sources for the emergence of zoonotic disease could help to improve targeting of investigation and interventions.

The animals such as hoofed mammals are those with which humans are sharing the maximum pathogens (Cleaveland et al., 2001). This may be not surprising because, as key food sources, these animals are often in close proximity to people. Rodents, carnivores, and primates are also well studied for spread of various diseases in human. It is also well known that the pathogens which may be considered emerging or re-emerging are excessively likely to be zoonotic (Keesing et al., 2010). Moreover, their reservoirs are much the same as those of non-emerging zoonotic diseases (Woolhouse and Gowtage-Sequeria, 2005).

**CONTROL OF ZOONOSIS**

In the last sixty years, lots of industrialized developed countries have effectively managed or eradicated zoonotic diseases with the help of expensive public investments easing synchronized involvements, comprising "test and slaughter," feed prohibitions, massive vaccination of livestock and wild fauna, education, health, and milk purification processes. These are extremely significant approaches of eradicating zoonotic diseases which necessitate significant effective, legitimate, and economic insurances (Keusch et al., 2009). In many emerging countries, investigation of pandemics are not acknowledged as "unique-health" alliance amongst human medication and veterinary medication. In accumulation, numerous countries possess deficiency in diagnostic capability and health organization. In cattle populations, determinations have principally concentrated on applying avoidance and extermination processes with less stress on the outcome of modification (spread management) approaches, taking into attention the financial and expansion effects at the macro (nationwide budget, atmosphere) or micro (health system, incomes, food-safety of small-scale agriculturalists) levels. Various industrialized countries are capable to manage or decrease the threat of diseases complete community investments in preventive actions such as investigation and reimbursement of agriculturalists for discarded typical in the incident of outbreaks. In April 2001, the UK government thrashed by devastating two million animals in UK to stop epidemic of foot-and-mouth disease (Sobrino and Domingo, 2001). Similar intrusions are not practical in many developing countries due to reduced investigation system, incomplete institutional capability, and deprived support or, deficiency of resources (Zinsstag et al., 2007). Education platforms to rush manufacturer level bio-safety processes were applied in developing countries without vigilant deliberation on how to modify conduct of modest
producer's sustainability, not supported by great level of governmental backing (Narrod et al., 2011). Fruitful outlay in zoonosis regulation needs valuation of the price of disease and the cost-eflicacy of projected involvements, moreover, to the adjustments of the involvements to the indigenous background.

Cost calculations of zoonosis necessitate comprehensive understanding of the biology of disease. Comprehensive understanding about spread pathways provides assistance to recognize sectors subsidizing to the cost of disease and is critical for decisive productive efforts involves for break of the disease phase. Zoonosis management is exceptional in that actual involvements may lie external to the health area because diffusion frequently does not occurs among human beings, but merely from animals to human alike in brucellosis or rabies (Zinsstag et al., 2005a, 2009b). A "one health" method validates closer support among human beings and animal health subsequent in welfares that are not accomplished along the 2 remedies working individually. "Single health" progressed from "single medication," a word devised by veterinarian epidemiologist Calvin Schwabe in the 1960s to determine that around is no example change among human beings and veterinary drugs, therefore, permitting for combined effort (Schwabe, 1984). Up to the present time, there have been inadequate determination to unify studies seeing both the public and biological structures, though this method is not theoretically novel but have been effectively pragmatic in an "ecological method to health" or "biological-health" (Forget and Lebel, 2001). It is recommend that such a method has massive prospect to increase community and animal wellbeing and deliver cost decrease in the community and privatized enterprise (Schelling et al., 2003; Zinsstag et al., 2009b). Evaluating the cost of zoonosis in various areas enables recognition of cost-distribution possibilities for example a discrete cost system. Though brucellosis management by cattle mass vaccination is not budget-operative from a community health sector viewpoint, it develops extremely cost-effective when costs are shared among the public health and agrarian areas in amount to their welfare (Roth et al., 2003). Incorporated valuations are hence vital for zoonotic disease management in reserves deprived countries (Zinsstag et al., 2007). The objective of the structure is to connect the examination outputs of animals and humans disease diffusion prototypes, financial influence prototypes, and assessment of risk managing options as an applied tool to gain improved understanding of aspects disturbing the adoption of risk managing policies so that investment design includes the most encouraging involvements in an integrated fashion.

CONCLUSION

The foundation on which to shape the worldwide pandemic inhibition strategy has transformed
significantly over the past few years. After studying different research papers, it is concluded that in developing countries, loop holes such as poorly developed health, surveillance, and control system are the main reasons for the emergence of diseases and its spread. It is demand of time to invest at massive scale on health system to cope with future pandemics. Furthermore as a community it's our responsibility to take momentous steps to control upcoming pandemics by timely investigating health and surveillance system and developing mass level awareness among people.

REFERENCES


9. Guan Y, Zheng BJ, He YQ, Liu XL, Zhuang ZX, Cheung CL, ...


429–35.


