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"A SURVEILLANCE, PREVENTION, IMPLEMENTATION, AND CONTROL PROGRAM OF MOTHER TO CHILD TRANSMISSION OF HEPATITIS B"

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ABSTRACT -Hepatitis B is a major public health problem in the Philippines. An estimated 7.3 million adult Filipinos (16.7% of the adult population) are chronically infected making our country hyperendemic for hepatitis B. This rate is extremely high compared to other countries and is more than double the 8% average prevalence of HBV infection in the Western Pacific region. A 2003 survey showed the prevalence of hepatitis B to be highest in the 20-49 year age group, which comprise the workforce or those entering the workforce.

KEY WORDS: Surveillance, Prevention, Implementation, Transmission

Hepatitis B is spread thru blood, semen, or other body fluids. A person may acquire the infection thru the following activities; Sex with an infected partner, Sharing needles, syringes, or other drug-injection equipment with an infected person, Sharing razors, nail clippers/manicure or pedicure paraphernalia or toothbrushes with an infected person, Direct contact with the blood or open wounds of an infected person. Exposure to blood from needlesticks or other sharp instruments, and Birth (spread from a hepatitis B positive mother to her baby)

Globally, mother to child transmission (MTCT) of hepatitis B virus (HBV) is the major route of infections, 2 billion people worldwide have serologic evidence of past or present infection with hepatitis, emphasizing that this infectious disease should be acknowledged as a global health problem in line with HIV, tuberculosis and malaria. MTCT of hepatitis B is the most important factor for developing a persistent infection, thus the risk of chronicity is inversely proportional with age, and most of the newborns (90%), to hepatitis B positive mothers, will get the virus without any prevention strategies. This is leading us to the focus of this assignment upon the prevention of mother to child transmission of hepatitis B. Despite an existing and effective vaccine and immunoprophylaxis regime, the implementation of immunoprophylaxis in developing countries has been challenging. In the Western Pacific Region, mother-to-child transmission and early childhood exposure are the most important mechanisms of hepatitis B transmission. In most countries in the Region, up to 50% of children may become infected during the first five years of life if they are not vaccinated.

This study seeks to determine how does Bernardino General Hospital 2, implement and promote control program, prevent, and survey or monitor the Maternal To Child Transmission of Hepatitis B. and it aims to answer the following questions:

1. What is the demographic profile of Bernardino General Hospital 2 in terms of:
   A. Location
   B. Classification
   C. Service Offered
   D. Accreditation
   E. Qualification of staff:

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a. Medical
b. Non – Medical

2. How does Bernardino General Hospital 2 implement the infection control program of:
   A. Hepatitis B as a disease.
   B. Transmission.
   C. Diagnostic Test.
   D. Hand hygiene
   E. Personal protective equipment
3. What are the Institutional protocols and standards of Bernardino General Hospital 2 in terms of the following:
   A. Cleaning and disinfection and sterilization.
   B. Impact of the illness on individual, family, community and Workplace.
   C. Surveillance and Investigation of Emerging Infections
   D. Infection prevention and control house policies, procedure, and rules and regulation?

The study will benefits to the following, **NURSE AND DOCTORS:** That it may serve as a tool for awareness and realization for them in the importance of infection prevention and control. preventing the occurrence of infection transmission to other patient, to the healthcare team and to the ancillary as well. **CLIENT AND PATIENT:** This study will offer awareness to patients in order to prevent and control of hospital acquired infections. **HOSPITAL /INSTITUTION:** This will serve as a reference on how effective and efficient the infection prevention and control program is implemented at Bernardino General Hospital 2. **FUTURE RESEARCHER:** The entire research process will provide knowledge and foundation regarding the understanding of healthcare practitioners and hospital practitioners toward infection prevention and control. **CLINICAL INSTRUCTORS:** The nursing educator will make use of this study in teaching their students as a reference to the importance of strict implementation of infection Prevention And Control Program As Primary Prevention of diseases as well as means of protecting oneself from such diseases.

This study was confined and limited only to employee of the hospital. The respondents of this study are the healthcare practitioners and hospital ancillary workers presently employed at Bernardino General Hospital 2. This study will evaluate the knowledge and understanding of the respondents in the mother to child transmission of hepatitis B: surveillance, prevention, implementation and control program.

According to the most recent estimates form the World Health Organization (WHO, 2015), about 240 million people are chronically infected with hepatitis B virus (HBV), 3,6% of the world's population. An estimated 686, 000 people will annually die as a consequence of complications to the HBV infection, either acute or chronic. It is further estimated that 2 billion people have serologic evidence of past or present infection, with East Asia as one of the regions in the world with highest prevalence (<5 %). In Asia vertical transmission of HBV, also known as mother to child transmission (MTCT), is the major route of transmission.

ACUTE HEPATITIS B VIRUS INFECTION

The focus on pregnant and children the acute phase of the infectionn is often self-limiting and characterized by acute inflammation and hepatocellular necrosis. clinically it presents with different signs and symptoms, including nonspecific symptoms such as anorexia, nausea or malaise and clinical hepatitis with jaundice of individuals undergoing an acute infection 0.5 - 1% is thought to die from a fulminant hepatitis (case fatality rate). Worth mentioning is that children do have less chance of an clinical acute illness by infection, they often present as asymptomatic, while adult have about 30% chance of developing symptoms acute hepatitis by infection is serological characterized by the presence of hbsag and immunoglobulin-M (igm) antibody to the hepatitis b Core antigen (hbcag). In the initial phase, the individual is also hbeag positive. Recovery, without progression to a chronic infection, is characterized by the disappearance of hbs-ag with seroconversion to Antibodies to hepatitis B surface antigen (anti - Hbs), commonly within 3 months. A pregnant woman that undergoes an acute HBV infection.

CHRONIC HEPATITIS B INFECTION

The focus on pregnant and children a CHB Infection is characterized and defined by the presence of detect able hbs-ag (with or without coexisting Hbe-ag) in the blood or serum for more than six months. regardless of associated active viral replication and proof of hepatocellular injury and inflammation, this is called a persistent HBV infection and is the principal marker of risk for developing chronic liver disease and liver cancer. CHB includes a range of different presentations from inactive, leading to no significant .

According to previous studies vertical transmission, particularly during the perinatal period, is pointed out to be the most important phase for the prevention strategies against developing a chronic hepatitis B (CHB)

infection. Without vaccination about 50% of the children, with Hepatitis B surface antigen (HBsAg) positive mothers, will get the virus. If the transmission occurs during the perinatal period, and with a HBsAg and hepatitis B e antigen (HBeAg) positive mother, 90% will develop a chronic HBV infection without immunoprophylaxis. The risk of a chronic HBV infection decreases the transmission takes place at the age of between one and four. However, horizontal transmission to a healthy adult will in less than 5% of the infections develop into a chronic infection. This gives us an inversely proportional risk of developing chronic HBV infection to the age at time of exposure.

INTRAUTERINE TRANSMISSION occurs while the foetus is still in the uterus. Transmission of serum/body fluid, as a consequence of placenta damage, is one of the most frequently mentioned.

INTRAPARTUM TRANSMISSION includes natal transmission during delivery. This route of transmission is said to be the major route responsible for perinatal transmission. During childbirth the newborns pass through the genital tract and may be exposed to maternal body fluids or blood.

PUERPERAL TRANSMISSION more commonly called postpartum transmission. The transmission occurs during care with exposure to maternal body fluid or blood, or through breast milk and represents a less common way of MTCT. It is more or less consensus in literature that breastfeeding after injection of hepatitis B immunoglobulin (HBIG) does not contribute to MTCT of HBV.

MATERNAL SCREENING METHODS The majority of pregnant women with chronic Hepatitis B (CHB) infection will be asymptomatic, thus they will be identified through routine screening in the perinatal period.

In another study of Baum banger (2016), perinatal transmission of HBV in Vietnam and Cambodia. An introduction to two high - endemic countries. In Asia, and in particular in highly endemic East Asia, vertical transmission during the perinatal period is the main cause of the transmission of HBV. The region has one of the worlds highest prevalence of the virus(>5%) and the virus is one of the major infectious cause of death in the region, ahead of malaria, tuberculosis and HIV. As previously described, MTCT occurs in 50% of unvaccinated children with HBs-Ag positive mothers. 90% of these will develop to chronic carriers, with the complications that follow.

According to the Department of Health (DOH) aims to find out as it conducts the National Hepatitis B Sero-prevalence Survey, with support from the Research Institute for Tropical Medicine, United States Centers for Disease Control and Prevention, and the World Health Organization, in 25 provinces of the country that started this month. As secretary of health Francisco T. Duque III said, he wanted to be more effective in preventing hepatitis B, and this survey will yield very important information on how DOH can improve its health services.

In Bernardino General Hospital 2, we follow the mandatory screening of Hepatitis B among pregnant women in antenatal consultation as Department of Health mandated. As package of routine consultation on the first trimester includes Laboratory (urinalysis, complete blood count, blood typing, HBs-Ag screening), radiology (ultrasound). As a blood test request of physician to diagnose hepatitis B listed below are common laboratory test that is to be properly interpreted by the physician in the antenatal clinic.

In Bernardino General Hospital 2 infection control policy Most of it is based on DOH and WHO standards of infection prevention and control program. This has been included in the study with the consent of the BGH administration.

According to the study of Hepatology Society of the Philippines preventions Hepatitis B is preventable by vaccination. Vaccine must be given to all infants and those people who belong to high risk population (e.g. healthcare workers, commercial health workers, people who inject drugs).

In another study done by Hepatology Society of the Philippines (HSOP 2013), there are several factors contributing to the high burden of hepatitis B infections in the Philippines, lack of awareness about viral hepatitis and its transmission, which affects the response of viral hepatitis in the Philippines and it is fuelled by stigma the disease. The stigma has range impacts including preventing to be screened for infections and assessing due to discrimination, people decline to be tested. In recent recently review of Department of Health (DOH), the national institute of Health, and the world Health Organization (WHO) in the Philippines of the current situation of hepatitis in the country. The DOH estimates that 10% to 16% Filipino suffer from chronic hepatitis B infection.

REPUBLIC ACT 10152

An Act Providing for Mandatory Basic Immunizaztion Services for Infants and Children. Signed in June 2011, The safe and effective vaccine to protect from Hepatitis B. It is given as a series of (3) shots over a period of 6 months. It stimulates the body's immune system to produce antibodies that protect against the virus. Here in the Philippines, Hepatitis B immunization include in the maternal, Newborn, Child Health and nutrition (MNCHN). Complementing this law, our government also passed Senate Bill Act No. 2029, otherwise known as the " Liver Cancer and hepatitis B awareness Month Act" which declares it "February"

METHODOLOGY

The study follows descriptive-survey method to determine the prevention of mother to child transmission of hepatitis b, a surveillance, prevention, implementation, and control program of hepatitis B virus infection. A descriptive type of research deals with the collection of data and obtaining the information concerning the current status of phenomenon to describe what exist with the respect to variables in a situation. Descriptive research is used to evaluate research design.

The data was collected through the use of questionnaire in Bernardino General Hospital 2. The researcher will choose selected individual to make the rsearch/ study happen.

The collected data from the responses of the respondents through questionnaire in form of checklist. It was collated, analyzed and interpreted using descriptive statistics. The point scoring index was used:**Frequency, distribution and percentage** %= (F/N) x 100%**,** Where: %= percentage distribution**,** F = Frequency of responses**,** N = total number of responses, 100 = constant

RESULT AND ANALYSIS

Hospital, Point Of Interest, Establishment
Address:
2 Olympus, Novaliches, Quezon City, Metro Manila, Philippines
Coordinate: 14.740147, 121.046598
Rating: 2.40
Phone: +63 2 418 6684
www.bgh.powersites.ph/ #contact

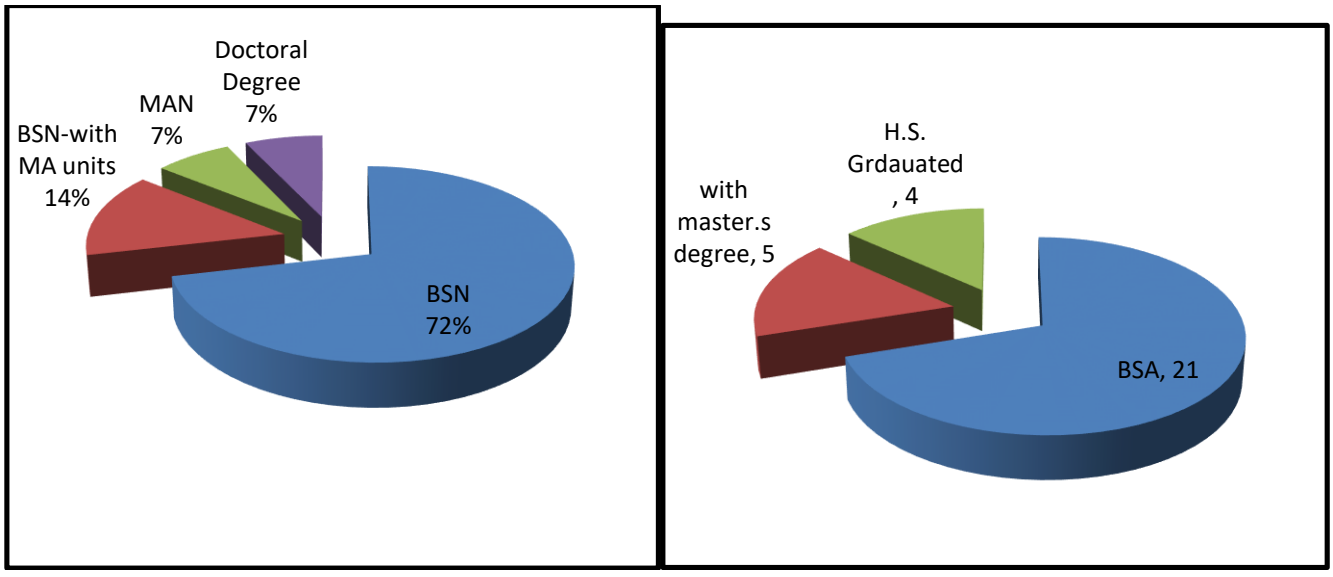
Bernardino General Hospital Corporation 2 (BGH 2), and it is located at Blk 1 Lot 1 North Olympus, Zabarte Road, Barangay Kaligayahan, Quezon City. BGH 2 or (B2) was founded and started its operation on March 1, 1999. The hospital has fifty four (54) bed capacity. Bernardino General Hospital also serve as a training Hospital for nurses, doctors, midwives and other health care professionals. The hospital are known to have competent medical practitioners, well-trained staff and up to date facilities and equipment suitable for health care needs of the community it serves with following mission/vision, and corporate values in their heart and mind of every staff and authorities of the institution. B2, classified as private – secondary hospital and presently serving the community of Brgy. Kaligayahan, San Agustin, Urduja, Clemente, Brgy. 172,176,178,177, Bagong Silang and other nearby localities.

Bernardino General Hospital understand the family need medical care and essential peace of mind. BGH2 offers the following services:

Bernardino General Hospital 2, is a member of Philippine Hospital Association, fully recognized by the Department of Health and certified member of Department of Health program "Mother Baby Friendly Hospital", and accredited member in the Philippine Health Insurance Corporation with Level I accreditation since September 2017. BGH 2 is also accredited of following Health Insurance of the Philippines.

BGH 2, have set of series of standard for every employee underwent procedure before being hired. In respect qualification of the staff :**MEDICAL-For Old/Regular Employee:** annual Physical Medical Examination as per staff nurses, midwife, and other hospital practitioner they are entitled to have and submit their medical and undergo some laboratory diagnostic such as (xray,Cbc, Hbs-Ag titer, ECG), medical executive check up like (ears, nose, abdomen, and eyes) on same month of every employees Birth Month. **For newly hired / applicant:** must accomplished medical/physical examination, submit other requirements as listed below. Diploma, Transcript of Records**,** Latest license (Medical)**,** Latest Seminar Attended Certificate**,** NBI / Police Clearance / Brgy. Clearance**,** City Health Office Health Card**,** Latest Medical Physical Examination**,** X-ray , CBC, Hepa- Screening, Latest Hepatitis Vaccine**,** Latest Tetanous Toxoid Vaccine. **Educational Qualification:** all staff nurses, midwife, nursing aid and others hospital professionals must submitted a certain requirement to the HR Department to be file at staff file 201, staff must be a four (4) year or 2 years graduated from medical school or colleges. Accompanied by supporting document such as: Diploma**,** Transcript of Record**,** Seminar / Training Attended**,** Medical and Physical Examination**,** Latest Vaccine taken, Latest Professional licensure.

NON – MEDICAL - Educational Qualification: all ancillary staff must submitted a certain requirement to the HR Department to be file at staff file 201, staff must be a graduate of Bachelor in Administration, or a graduated of any 4 years courses. Accompanied by supporting document such as:Diploma**,** Transcript of Record**,** Seminar / Training Attended**,** Medical and Physical Examination**,** Latest Vaccine taken, Civil Service Examination**,** International Code of Disease Encoder. **For employee carrier of Hepatitis B (Medical / Non Medical)**: annual monitoring of Liver function enzymes testing SGPT, Anti-HBc, IgM anti-HBc and anti HBs and liver ultrasound-(HBT). **For employee with positive Hepatitis B (Medical/Non Medical)**: will be assigned to area or department of hospital that limited to contact to patient to avoid emerging of transmission through their blood.



Out of 70 medical staff 72% are said to be BSN graduate, 14% are BSN with Units in MAN, and 7% are shared by with Master's degree and with Doctor's Degree. As of 30 Non-medical Staff, 70% are Bachelor in Administration graduated, and 17% are Master's Degree Holder and the remaining 13% are belongs to High School Graduated.

Bernardino General Hospital 2 considers HBV is a contagious and believe that early detection of possible carrier must be screen. Since, Globally, mother to child transmission (MTCT) of hepatitis B virus (HBV) is the major route of infections. Hepatitis B Prevention Program in BGH 2 comes out with mission and vision used as guidance to achieve the goal of the program.**Vision :** To support exclusive hepatitis B screening among women, and prevention of maternal to child transmission. **Mission:**

To provide assistance to mother and infants in achieving successful early identification, prevention of hepatitis B transmission by standardizing, teaching, eliminating the contradictory advices and implementing practice conducive to perinatal transmission. **The primary goal of vision /mission of the BGH 2 program** is to identify all pregnant women infected with hepatitis B and prevent perinatal transmission of the virus by ensuring infants born to women receive the recommended prophylactic treatment at birth. Item below are the key step of BGH 2 in monitoring the Maternal to Child Hepatitis B transmission: **SCREENING**, **SURVEILLANCE, PREVENTION –** Bernardino General Hospital 2 has it's own program that is designed to prevent and to provide a safe, and sanitary environment. (**Infection Control Program** / **Infection Control Committee), DIAGNOSTIC TEST** - As package of routine consultation on the first trimester includes Laboratory HBs-Ag testing should be incorporated into standard prenatal testing panels (e.g., blood type, HIV infection, Rh factor, rubella titer, syphilis infection, urinalysis, complete blood count, HBs-Ag screening, radiology, ultrasound) used by all practitioners caring for pregnant women. **HAND HYGIENE -** Bernardino General Hospital 2, provides foster of Hand Washing Technique Using Soap and Water to every rooms to remind patient and staff washing of hand is one key to minimize spread and transmission of disease. And lastly, **PERSONAL PROTECTIVE EQUIPMENT -** Bernardino General Hospital have own policy regarding the used of protective clothing, helmets, goggles, or other garment designed to protect the wearer's body. Personal protective equipment (PPE), is specialized clothing or equipment worn by a worker for protection against a hazard. The hospital management requires the use of PPE by all workers to guard against blood borne pathogen if there is reasonably anticipated exposure to blood or other potentially harmful materials

Bernardino General Hospital (B2) Policies and Procedures on Cleaning, Disinfecting, Drying, Packaging and Sterilizing of Equipment, Instruments and Supplies **Cleaning, Disinfection, Sterilization, Surveillance and Outbreak Investigations:** further investigation including case study, a new laboratory result has been collected to make up a plan should include special problem-focused studies that describe personnel or environmental sampling, including what circumstances and who has the authority to order.**Policy and procedure, Staff Education, Quality Assurance Communicable Disease Reporting,** BGH 2 as institution usually makes the infection control program responsible for reporting communicable diseases required by state law.

The Bernardino General Hospital 2 infection control policy is currently in its early stages of development . Some areas are still for revision and clarification. Most of it is based on DOH and WHO standards of infection prevention and control program. This has been included in the study with the consent of the BGH administration. **Contact precaution** – used to reduce transmission by direct contact between persons or contact with items in the environment. Exposed personnel to possible blood borne infection should receive a post exposure prophylaxis, vaccination, immunization when possible. A report must be made upon detection and should reported to the ICN within 24 hours. **Routine Care (minimal)**

The antenatal include HBs-Ag screening and care guidelines specify the need to inform mothers during their first. trimester visits about the immunization needs of their children. The guidelines should be modified to include information on the need for a hepatitis B vaccine injection for newborn infants within 24 hours of birth. All staff involved in providing antenatal care should be trained in informing mothers about the importance and need for early hepatitis B vaccination. The mother should also be asked where she plans to deliver so that the vaccine can be made available at the place of birth. Such information will create demand from parents for the the Vaccination or Injection

DISCUSSION

1. Bernardino General Hospital II, contributes in Prevention of Maternal to child Hepatitis B prevention by compliance and the government law, Senate Bill Act No. 2029, otherwise known as the " Liver Cancer and hepatitis B awareness Month Act" which declares it "February"
2. BGH 2 ensure the leaflets they are providing are informational and effective because prior to use and distributed to client this is being reviewed by Infection Committee heads.
3. Bernardino General Hospital help to identify all pregnant women infected with hepatitis B and prevent perinatal transmission of the virus by ensuring infants born to women receive the recommended prophylactic treatment at birth. Item below are the key step of BGH 2 in monitoring the Maternal to Child Hepatitis B transmission

4. BGH 2 takes part in eliminating common mis-belief by sending healthcare providers that are well equipped with knowledge about Perinatal Hepatitis B Transmission and prevention program.
5. BGH 2 contributes in disseminating mother to child Hepatitis B prevention program by lectures, trainings, signages and power point presentation entitled, " "Hepatitis B Awareness Month"
6. Bernardino General Hospital 2 strictly implements both ancillary and healthcare practitioners perceived that the Bernardino General Hospital 2 strictly implements the infection control program, the management of said hospital should continuously sustain the strict implementation of infection control program.
7. BGH 2 has continuous improvement in all components of infection control program as used in this study especially on infection prevention and control house policies, procedures, rules and regulations, and surveillance and investigation for emerging infections.
8. BGH 2 has available integrated software solutions for infection control program- Integrated computerized software solutions must be available that assess the incoming risk messages from microbiology and other online sources. By reducing the need for data entry, this said software significantly reduces the data workload of Infection Control Practitioners, freeing them to concentrate on clinical surveillance.

CONCLUSIONS

Based on the findings the researcher drew the following conclusions:

1. Bernardino General Hospital is encouraging their pregnant client to undergo Hepatitis B screening during antenatal at Out-patient Department. This is can be proven by the signage's and poster posted in the hospital's premises. Also, they are educating their patient through the help of their Ob-Gyne and staff with the use of leaflets and lectures. Leaflets are accessible in Obstetrician room, OPD nurse station and on Reception area.
2. The hospitals provides their staff personal protective equipment, and also BGH 2 have their own ICC (Infection Control Committee) to do the surveillance and investigation of emerging infections.
3. Bernardino General Hospital II, have continuous training and education in infection control and health epidemiology, infection prevention and control house policies, procedures, rules and regulations is implemented.
4. The Bernardino General Hospital 2 provided a copy of infection control policy in all areas in the hospital for staff guidance.

RECOMMENDATIONS

The following recommendations are based on the researcher's findings. These are:

1. To the hospital administrators, they must be vigilant in the implementation of infection prevention and control in their hospitals. It is a must in order to provide safe nursing care and service to the community it serves. Continuous training and education must be provided not only to the healthcare staff but also to the Ancillary staff so that both groups would have the same level of understanding as well as practice in respect to the infection prevention and control program of the institution.
2. To the patient, they should do their share of work in order have a infection free hospital. Since they will be one of the benefactors of the program, they must comply with the standards imposed by the hospital so that cross infection between patients will be prevented or controlled.
3. To the Clinical Instructors, the nursing educators will make use of this study in teaching their students the reference to the importance of strict implementation of infection prevention and control program as primary prevention of diseases as well as means of protecting oneself from such diseases.
4. To the nurse and doctors, each must do their part in order to make the infection control and prevention of the hospital successful. One must be updated with the latest trends by attending seminars or doing personal research in order to provide safe and effective care to our clients.
5. To the future researchers, they may use this as a resource to their studies and there should be a follow up study of the research work using other facilities may it be private or government institution.
6. Authorities in the hospital should work hand in hand with the Department of Health in the implementation of infection prevention and control of the hospital. The hospital must also sponsor seminars of their staff in order to update them with the latest trends in dealing with current infection rampant in the community it serves.
7. Continuous monitoring, planning and evaluation of the program should be done to ensure strict implementation. The program must be improved by providing a monitoring tool for evaluation of the infection prevention and control in the hospital.

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