

PUBLIC HEALTH AND TECHNOLOGY

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ABSTRACT

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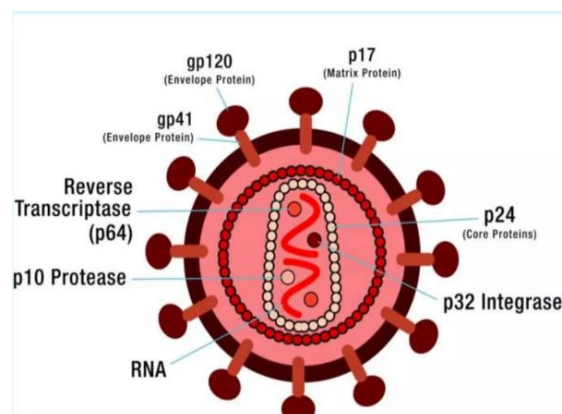
Public health is the science of protecting and improving the health of people and their communities . This work is achieved by promoting healthy lifestyles , researching disease and injury prevention and detecting , preventing and responding to infectious disease . Technology in healthcare has provided the healthcare community with advanced patient care. The goal of public health is the biologic , physical and mental well being of all [members of society](#) . Thus , [unlike medicine , which focuses on the health](#) of the individual patient , public health focuses on the health of the public in the aggregate .

In my research I take to study ‘‘ROLE OF MODERN TECHNOLOGY IN PUBLIC HEALTH ‘‘. The World Health Organization defines public health as ‘‘the art and science of preventing disease , prolonging life and promoting health through the organized efforts of society ‘‘. Advances in public health technology have made a huge impact on global health.

Keywords = Public health , Technology , well being, Disease

INTRODUCTION

Human immunodeficiency virus (HIV) is an infection that attacks the body’s immune system. Acquired immunodeficiency syndrome (AIDS) is the most advanced stage of the disease.HIV targets the body’s white blood cells, weakening the immune system. This makes it easier to get sick with diseases like tuberculosis, infections and some cancers.HIV is spread from the body fluids of an infected person, including blood, breast milk, semen and vaginal fluids. It is not spread by kisses, hugs or sharing food. It can also spread from a mother to her baby.HIV can be treated and prevented with antiretroviral therapy (ART). Untreated HIV can progress to AIDS, often after many years.WHO now defines Advanced HIV Disease (AHD) as CD4 cell count less than 200cells/mm³ or WHO stage 3 or 4 in adults and adolescents. All children with HIV younger than 5 years of age are considered to have advanced HIV disease.



SIGNS AND SYMPTOMS

The symptoms of HIV vary depending on the stage of infection.

The disease spreads more easily in the first few months after a person is infected, but many are unaware of their status until the later stages. In the first few weeks after being infected people may not experience symptoms. Others may have an influenza-like illness including:

- fever
- headache
- rash
- sore throat.

The infection progressively weakens the immune system. This can cause other signs and symptoms:

- swollen lymph nodes
- weight loss
- fever
- diarrhoea
- cough.

Without treatment, people with HIV infection can also develop severe illnesses:

- tuberculosis (TB)
- cryptococcal meningitis
- severe bacterial infections
- cancers such as lymphomas and Kaposi's sarcoma.

HIV causes other infections to get worse, such as hepatitis C, hepatitis B.

TRANSMISSION

HIV can be transmitted via the exchange of a variety of body fluids from people living with HIV, such as blood, breast milk, semen and vaginal secretions. HIV can also be transmitted during pregnancy and delivery to the child. People cannot become infected through ordinary day-to-day contact such as kissing, hugging, shaking hands, or sharing personal objects, food or water.

It is important to note that people with HIV who are taking ART and have an undetectable viral load do not transmit HIV to their sexual partners. Early access to ART and support to remain on treatment is therefore critical not only to improve the health of people with HIV but also to prevent HIV transmission.

RISK FACTORS

Behaviours and conditions that put people at greater risk of contracting HIV include:

- having condomless anal or vaginal sex;
- having another sexually transmitted infection (STI) such as syphilis, herpes, chlamydia, gonorrhoea and bacterial vaginosis;
- engaging in harmful use of alcohol and drugs in the context of sexual behaviour;
- sharing contaminated needles, syringes and other injecting equipment and drug solutions when injecting drugs;
- receiving unsafe injections, blood transfusions and tissue transplantation, and medical procedures that involve unsterile cutting or piercing; and
- experiencing accidental needle stick injuries, including among health workers.

DIAGNOSIS

HIV can be diagnosed through rapid diagnostic tests that provide same-day results. This greatly facilitates early diagnosis and linkage with treatment and prevention. People can also use HIV self-tests to test themselves. However, no single test can provide a full HIV positive diagnosis; confirmatory testing is required, conducted by a qualified and trained health or community worker at a community centre or clinic. HIV infection can be detected with great accuracy using WHO prequalified tests within a nationally approved testing strategy and algorithm.

Most widely used HIV diagnostic tests detect antibodies produced by the person as part of their immune response to fight HIV. In most cases, people develop antibodies to HIV within 28 days of infection. During this time, people are in the so-called window period when they have low levels of antibodies which cannot be detected by many rapid tests, but may transmit HIV to others. People who have had a recent high-risk exposure and test negative can have a further test after 28 days.

Following a positive diagnosis, people should be retested before they are enrolled in treatment and care to rule out any potential testing or reporting error. While testing for adolescents and adults has been made simple and efficient, this is not the case for babies born to HIV-positive mothers. For children less than 18 months of age, rapid antibody testing is not sufficient to identify HIV infection – virological testing must be provided as early as birth or at 6 weeks of age. New technologies are now available to perform this test at the point of care and enable same-day results, which will accelerate appropriate linkage with treatment and care.

PREVENTION

HIV is a preventable disease.

Reduce the risk of HIV infection by:

- using a male or female condom during sex
- being tested for HIV and sexually transmitted infections
- having a voluntary medical male circumcision
- using harm reduction services for people who inject and use drugs.

Doctors may suggest medicines and medical devices to help prevent HIV, including:

- antiretroviral drugs (ARVs), including oral PrEP and long acting products
- dapivirine vaginal rings
- injectable long acting cabotegravir.

ARVs can also be used to prevent mothers from passing HIV to their children.

People taking antiretroviral therapy (ART) and who have no evidence of virus in the blood will not pass HIV to their sexual partners. Access to testing and ART is an important part of preventing HIV.

TREATMENT

There is no cure for HIV infection. It is treated with antiretroviral drugs, which stop the virus from replicating in the body.

Current antiretroviral therapy (ART) does not cure HIV infection but allows a person's immune system to get stronger. This helps them to fight other infections.

Currently, ART must be taken every day for the rest of a person's life.

ART lowers the amount of the virus in a person's body. This stops symptoms and allows people to live a full and healthy life. People living with HIV who are taking ART and who have no evidence of virus in the blood will not spread the virus to their sexual partners.

Pregnant women with HIV should have access to and take ART as soon as possible. This protects the health of the mother and will help prevent HIV from passing to the fetus before birth, or to the baby through breast milk.

Antiretroviral drugs given to people without HIV can prevent the disease.

When given before possible exposures to HIV it is called pre-exposure prophylaxis (PrEP) and when given after an exposure it is called post-exposure prophylaxis (PEP). People can use

PrEP or PEP when the risk of contracting HIV is high; people should seek advice from a clinician when thinking about using PrEP or PEP.

Advanced HIV disease remains a persistent problem in the HIV response. WHO is supporting countries to implement the advanced HIV disease package of care to reduce illness and death. Newer HIV medicines and short course treatments for opportunistic infections like cryptococcal meningitis are being developed that may change the way people take ART and prevention medicines, including access to injectable formulations, in the future.

THE ROLE OF TECHNOLOGY IN HIV PREVENTION AND CARE

Human Immunodeficiency Virus (HIV) is a global health challenge that affects millions of people worldwide. Since the first cases were reported in the 1980s, significant progress has been made in the prevention and treatment of HIV. However, the disease still remains a major public health issue, especially in low- and middle-income countries.

One of the key factors in the fight against HIV has been the role of technology. Technological advances have enabled more effective HIV prevention and care strategies, making it easier to diagnose and treat HIV, while also reducing the stigma and discrimination that surrounds the disease.

Preventing HIV transmission with technology

One of the biggest challenges in preventing the spread of HIV is identifying those who are infected and providing them with the necessary care and treatment. However, many people living with HIV are unaware of their status and may unknowingly transmit the virus to others. This is where technology comes in.

In recent years, HIV testing has become more accessible and convenient with the development of rapid diagnostic tests that can produce results in as little as 20 minutes. These tests can be performed in a variety of settings, including community centers, schools, and workplaces, making it easier for people to get tested and know their status.

In addition to testing, technology has also enabled new methods of HIV prevention. One such method is Pre-Exposure Prophylaxis (PrEP), which involves taking antiretroviral drugs to prevent HIV infection. PrEP has been shown to be highly effective in reducing the risk of HIV transmission, and technology has made it easier to access and administer PrEP with online consultations and telemedicine services.

Improving HIV Care with Technology

In addition to prevention, technology has also played a key role in improving the care and treatment of people living with HIV. Electronic health records (EHRs) have enabled healthcare providers to better manage patient care by providing easy access to patient information, including their medical history, medication regimens, and lab results.

Telemedicine and mHealth (mobile health) apps have also been instrumental in improving HIV care, by enabling remote consultations and monitoring of patients. This has been especially important in areas with limited healthcare resources, where patients may not have access to regular clinic visits.

CONCLUSION

The HIV epidemic has taught scientists, clinicians, public health officials, and the public that new infectious agents can still emerge. The nation must be prepared to deal with a fatal illness whose cause is initially unknown but whose epidemiology suggests it is an infectious disease.