

Theme 1

Knowing the Challenge

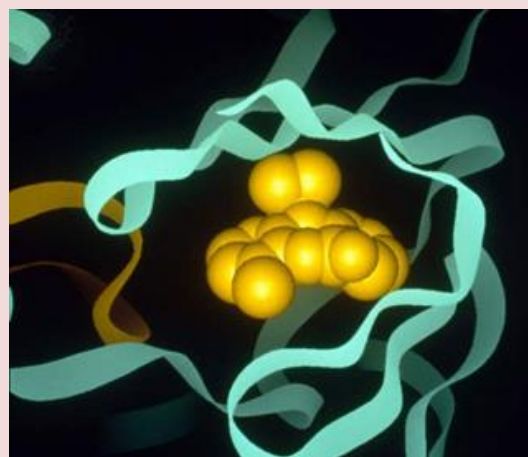
Throughout history, humans have been challenged by many different health issues. With the development of vaccines for many life-threatening and crippling diseases (such as for rabies, smallpox and polio) and the discovery of antibiotics, humans have gradually become used to the idea that most diseases could be prevented or treated. However, in the last two decades of the 20th century, this false sense of security was shattered by HIV and Aids.

So how can we meet the challenge posed by HIV and Aids?

This is the question we investigate in Theme 1. We do this by dealing with six basic questions:

- Where does Aids come from?
- What is HIV and how does it attack the body?
- How is HIV transmitted from one person to another and how can we prevent it?
- What are the symptoms and diseases associated with HIV infection?
- How can HIV infection or Aids be diagnosed?
- How can HIV infection and Aids be managed with antiretroviral therapy (ART)?

Each one of these questions will be discussed in a separate learning unit and, in this way, we will start to suggest possible answers to the Aids challenge.



Structure of Nevirapine

INSTRUCTIONS – HOW TO NAVIGATE

- Throughout the learning units you will find links that will help you to navigate through the text.
- These links are clearly marked in blue or purple.
- They are called [NEXT]; [BACK]; [ACTIVITY]; [FEEDBACK] or [ASSESSMENT]
- Click with your mouse on these links to navigate quickly through the learning units and to avoid getting lost.
- At the end of each learning unit you can click on the link to go directly to the **next learning unit**. Please note that this link will work only inside *MyUnisa* and NOT if you are working offline.
- At the top of each learning unit a block will indicate if the learning unit should be studied by both tracks or by the Counselling or Care track only. Please remember which track you have chosen.
- Now click on [\[NEXT\]](#) to go to the beginning of Learning Unit 1.

Learning Unit 1:

HIV and Aids: A brief history

**BOTH
TRACKS**



[\[NEXT – TABLE OF CONTENTS\]](#)

Table of Contents

[INSTRUCTION: CLICK ON THE SECTION YOU WANT TO GO TO]

Learning Unit 1 – HIV and Aids: A brief history

- [Introduction](#)
- [The birth of a new epidemic](#)
- [The origin of HIV](#)
- [The global Aids epidemic](#)
- [The world's response to the Aids epidemic](#)
- [Assessment](#)

Introduction

[\[TABLE OF CONTENTS\]](#)

People **react** differently to challenges. Some choose to ignore them and hope that they will go away. Others feel helpless and disempowered in the face of a huge problem and this makes it difficult for them to meet the challenge effectively. We believe that the best way to meet a challenge like HIV and Aids is to know as much as possible about the threat and to explore as many avenues as possible in combating the spread and effects of the virus. Our first learning unit therefore deals with the following key questions:

Key questions

Use the following questions as pointers to ensure that you retain your focus on the important issues in this learning unit:

- When and how did the Aids epidemic start?
- Where and when did HIV originate?
- What does it mean when researchers talk about the “prevalence” and the “incidence” of the Aids epidemic?
- What is the response to the Aids epidemic?

[\[NEXT\]](#)

Key concepts

While working your way through this learning unit, look out for the following key concepts. Make sure that, after you have completed this learning unit, you know what they refer to and how they are used. You can also look up the definitions of the terms in the glossary. (To go to the glossary, simply click on the word that is highlighted in blue.) Please note that some of the key words in this list might not be in the glossary.

HIV	HIV prevalence
Aids	HIV incidence
Crossing the species barrier	AZT
Urban legends	

[\[NEXT\]](#)

The birth of a new epidemic

[\[TABLE OF CONTENTS\]](#)

Where did the HI virus come from, how and where did the epidemic start, and how did it spread to become a pandemic (i.e. spread all over the world)? An equally controversial issue is who first discovered (or isolated) the HI virus? All these questions are discussed in your prescribed book.

Study



Prescribed book: pp. 4-6

Section 1.1: The birth of a new epidemic. Pay special attention to:

- The meaning of the acronym “Aids” and what is meant by the term “syndrome”.
- The outcome of the controversy about the discovery of HIV.

[\[NEXT\]](#)



Figure 1: Luc Montagnier, Françoise Barré-Sinoussi (for the discovery of HIV) and Harald zur Hausen (for the development of the HPV virus vaccine), won the Nobel Prize in Physiology or Medicine in 2008.

We are sure that you have heard various theories and opinions about the origin of HIV, some more far-fetched than others. So how can you tell fact from fiction? Although we would like you to always consider different views and ideas by consulting the voices of various communities, the news media, colleagues and scientists, you should remember that this is a scientific course and not mere popular speculation. To uncritically accept rumours, conspiracy theories and alternative views just because you like them is not acceptable within a scientific or university milieu. This is not to say that scientists always agree. For example, in the case of HIV, a large number of different theories were put forward in the earlier years of the epidemic about the origin of the virus.

Let's consider a few so-called urban legends about the origin of HIV. Urban legends regarding the origin of HIV often consist of unsubstantiated conspiracy theories or stories that blame somebody, some organisation or some government agency for manufacturing or spreading the virus. Discover this for yourself by doing the following activity.

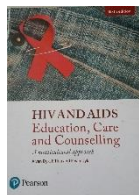
ACTIVITY 1.1 – DISCOVER CONSPIRACY THEORIES AND URBAN LEGENDS

Click on the link below and it will take you to this activity where you will discover more about the urban legends that exist about HIV and Aids. Link: [Activity 1.1](#) (If you are using the printed version of this document, go to Activity 1.1 in the Appendix)

Feedback: Urban legends and conspiracy theories are widespread in our society and you should carefully consider why they are not true.

It is important to understand the difference between scientific theories and popular conspiracy theories. One of the basic tenets of science is that we should not merely believe everything that we hear, that is, we should develop a critical attitude.

Study



Prescribed book: pp. 6-9

Section 1.2: The origin of HIV. Pay special attention to:

- How scientists gradually became more certain about the exact origin of HIV. Also note the reasons behind the current theory that it crossed the species barrier on several occasions from various primate species, each occurrence resulting in a different group of the HI virus (see Figure 1.2 in your prescribed book). The fact that many pathogens (e.g. viruses) are specific to a species (e.g. one kind of animal), but may in some cases cross over to another species (e.g. humans), is well-known to epidemiologists. Although this crossing of the species barrier by a pathogen is by no means a common occurrence, it is nonetheless common enough so that many of the seasonal flu viruses which plague us during the winter months have their origin in other species such as pigs or birds (thus the popular names such as swine or bird flu). **Click on the video icon** or type the following link (<http://goo.gl/B8fUVp>) into your web browser to watch a YouTube video about the origin of HIV.
- The nature of and reasons behind urban legends and conspiracy theories so that you identify them in future and dismiss them for what they are: unsubstantiated rumours which people wish to believe for various reasons.



It is now commonly accepted that an ancestor of the HIV-1 group M virus was transmitted from a chimpanzee (*Pan troglodytes troglodytes*).



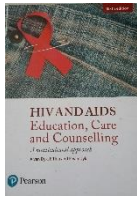
[\[NEXT\]](#)

The global Aids epidemic

[\[TABLE OF CONTENTS\]](#)

This section in the prescribed book, about the current global prevalence of HIV infection, is deliberately short, indicating only broad trends. The reason for this is that, by the time you read it, it will already have become outdated. You are therefore referred to the [UNAIDS website \(http://goo.gl/ArUSY\)](http://goo.gl/ArUSY) for a more detailed and up to date figures about the Aids pandemic. You can also click on the word “[Global report](http://goo.gl/Opm2ef)” (<http://goo.gl/Opm2ef>) which will take you directly to the report on the global HIV infections statistics.

Over and above the global figures of HIV infection, this section also deals with exactly how these figures are calculated and what the difference between prevalence and incidence is.

<p>Study</p> 	<p>Prescribed book: pp. 9-11</p> <p>Section 1.3: The global Aids epidemic. Pay special attention to:</p> <ul style="list-style-type: none">• Broad trends in global HIV infections and the most recent statistics as reflected on the UNAIDS website.• The important difference between <i>prevalence</i> and <i>incidence</i> of HIV. An easy way to remember the difference is to picture prevalence as the frequency (or how common) HIV infection is amongst the population as a whole (either globally or in a specific country or group). Incidence refers to the rate of infection, that is, the number or percentage of new infections in a given year. Why is it important for you to know this difference? If you don't know what the difference is, you will not understand what scientists mean when they use these terms.• How HIV prevalence is measured. People often express doubt (without giving any reasons) about the number of HIV infections in a specific country or group. It is therefore important to be knowledgeable about the process of measurement and that it is done according to the guidelines of UNAIDS.
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You have read about the National Household Surveys that are done by the HSRC (Human Sciences Research Council) on a regular basis in South Africa. Visit the [HSRC website \(http://goo.gl/FC5Lti\)](http://goo.gl/FC5Lti) to familiarise yourself with the amazing work they are doing.

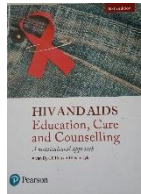
[\[NEXT\]](#)

The world's response to the Aids epidemic

[\[TABLE OF CONTENTS\]](#)

This section deals primarily with the kind of inaction and denial which featured during the earlier years of the Aids pandemic, especially in South Africa.

Study



Prescribed book: pp. 11-23

Section 1.4: The world's response to the Aids epidemic. Pay special attention to:

- The psychological reasons why people may tend to deny, blame and moralise when trying to come to grips with a potentially deadly disease.
- The current South African government's ARV programme and how it entails a total 180 degree switch from the previous policy.
- Table 1.1 for a summary of all major historical events regarding the Aids pandemic and to situate yourself in terms of these events by doing the Activity that follows.

ACTIVITY 1.2 – WHERE WERE YOU WHEN AIDS HAPPENED?

Click on the link below and reflect on the first time you became aware of HIV and Aids. Link: [Activity 1.2](#)

Feedback: *Where was I? Although I had already been working in the Aids field since the mid-1980s, Aids really hit me when Freddie Mercury died on 24 November 1991. What a waste of talent, and how terribly sad that the use of highly active antiretrovirals (HAART) was introduced only in 1995. It was also a time of silence, stigma and prejudice. Do you think things are better now? In what sense? (Alta van Dyk)*



Click on the link <http://goo.gl/Bv9dzc> to watch a video about the people we have lost because of Aids.

Flight MH17 – We mourn our Aids colleagues

The world was shocked and saddened by the loss of so many members of the international Aids community when flight MH17 was shot down over the Ukraine on Thursday 17 July 2014. They were on their way to the 20th International Aids Conference in Melbourne, Australia. One of the victims was Dr Joep Lange from the Netherlands who fought for years to make ARVs available and accessible in developing countries. I will always remember him saying “If you can get Coca Cola to the smallest villages in Africa, you can also get ARVs there.” Our thoughts are with the families and friends of all those who died on flight MH17.

You are now finished with this learning unit. Click on [Assessment](#) to do some self-assessment questions.

Study reflection

After completing Learning Unit 1 (HIV and Aids: A brief history), you should have acquired the following knowledge and understanding and be able to:

- narrate the early history of HIV and its discovery.
- explain how HIV crossed the species barrier from various primates.
- explain the main differences between scientific theories and urban legends and rumours.
- explain the difference between prevalence and incidence of HIV and how prevalence is measured and calculated.
- narrate the main events about the history of HIV and Aids and how people reacted to the epidemic.

These skills will help you to continue reading and discovering more amazing, although often disturbing, facts about HIV and the Aids epidemic, but also may empower you to help fight the disease in your community. We can only succeed in this fight if we stand together and dispel half-truths and ignorance. Are you willing to become part of the solution?

Self-Assessment 1



Now is the time to pause briefly and to assess whether you have acquired the necessary knowledge and skills. Click on the link [Self-Assessment 1](#) to do a few questions on this learning unit. (If you are using the printed version of this document, go to Self-Assessment 1 in the Appendix.) Please note that these self-assessment questions do not contribute to your year mark or your admission to the exams. The feedback to the questions will be given to you immediately after you have completed each question.

You are now finished with the assessment. Go to Learning Unit 2

Appendices

[PLEASE NOTE: if you followed the various links in the above learning unit then you have already done/consulted the activities, self-assessment and glossary following below.]

- Activities
- Self-Assessments
- Glossary

ACTIVITY 1.1 - CONSPIRACY THEORIES AND URBAN LEGENDS

Conduct an informal survey amongst your friends and colleagues and see how many additional conspiracy theories and urban legends about the origin of HIV you can discover.

If you have access to the internet, use the Google search engine and search using the words “HIV conspiracy theories” or “Urban legends about Aids”. The search will probably return hundreds of different types of conspiracy theories. Try to find as many as possible.

Now ask yourself the following questions:

- Who are the villains (“bad guys”) in these theories or urban legends?
- Is the source of the virus always attributed to the same “bad” organisation or person, or does it vary according to the storyteller’s own perspective or group?
- What proof is offered to support any specific theory, except that “it is generally accepted” or that its acceptance depends on what people wish to believe?

[\[FEEDBACK\]](#)

FEEDBACK 1.1

If you paid close attention, you would probably have realised that urban legends and conspiracy theories are widespread in our society, but that they are difficult or impossible to verify. The specific agency to which the conspiracy is attributed also varies greatly (depending on the setting in which the legend circulates). During the Cold War in the 1980s (and today), the US military was and is a popular villain. In South Africa, the previous apartheid government is a popular choice for the “bad guy”. On the other hand, within certain religious communities, the New Age movement is seen as the “source of all evil” and therefore also as the possible source of HIV.

[\[BACK\]](#)

ACTIVITY 1.2 – WHERE WERE YOU WHEN AIDS HAPPENED?

Look at the timetable showing the history of HIV and Aids in Table 1.1 in your prescribed book. Do the following:

- Look at each one of the main incidences on the timetable. Think about what you were doing in your life at that time.
- Take a pencil and draw a circle around the year on the timetable when you first became aware of HIV and Aids.
- What made you aware of HIV and Aids at that time in your life?
- Think back of how you felt about Aids at the time. How do you feel about Aids now? Have your feelings about Aids changed over the years?

[\[FEEDBACK\]](#)

FEEDBACK 1.2

We all have our own personal experiences which will influence our answers.

[\[BACK\]](#)

SELF-ASSESSMENT 1

[NB: Please note that the feedback to the questions is on the next page.]

Question 1

When did the world first become aware of a new disease that affected the immune systems of young homosexual men?

1. 1981
2. 1985
3. 1991
4. 1995

Question 2

Who won the Nobel Prize in Physiology or Medicine in 2008 for the discovery of HIV?

1. Robert Gallo
2. Louis Pasteur
3. Luc Montagnier
4. Françoise Barré-Sinoussi and Luc Montagnier

Question 3

HIV crossed the species barrier from primates to humans. We now know that HIV-1 (Group M) was originally transmitted from a to a human being, probably during hunting.

1. Green monkey
2. Chimpanzee
3. Vervet monkey
4. Gorilla

Question 4

Define the concept "HIV incidence".

Question 5

Define the concept "HIV prevalence".

[\[FEEDBACK\]](#)

FEEDBACK SELF-ASSESSMENT 1

Feedback Question 1

The correct answer is 1981 (alternative 1)

Feedback Question 2

The correct answer is Françoise Barré-Sinoussi and Luc Montagnier (alternative 4)

Feedback Question 3

The correct answer is chimpanzee (alternative 2).

Feedback Question 4

It is the annual number of new HIV infections as a proportion of previously uninfected people. (See Section 1.3.1 in your prescribed book for a full explanation of HIV incidence.)

Feedback Question 5

HIV prevalence is the percentage of people living with HIV (as a proportion of the total population) at a specific time. (See p. 10 in your prescribed book.)

[\[BACK TO LEARNING UNIT\]](#)

HIV:

An acronym for the Human Immunodeficiency Virus – the virus that causes Aids. The predominant form of HIV in central, eastern and southern Africa, North and South America and Europe is HIV-1. HIV-2 is a closely related retro- virus found in western Africa.

[\[BACK\]](#)

AIDS:

An acronym for: Acquired Immune Deficiency Syndrome. This acronym emphasises that the disease is acquired and not inherited. It is caused by a virus (HIV) that invades the body. This virus then attacks the body's immune system and makes it so weak and ineffectual that it is unable to protect the body from both serious and common infections and pathogens.

[\[BACK\]](#)

HIV Prevalence

The proportion (percentage) of people within a population living with HIV.

[\[BACK\]](#)

HIV Incidence

Refers to the annual number of NEW HIV infections as a proportion (percentage) of previously uninfected people.

[\[BACK\]](#)

AZT (Zidovudine):

AZT is an ARV falling in the class of Nucleoside reverse transcriptase inhibitors (NRTI). NRTIs disturb the life cycle of HIV through interference with the reverse transcriptase enzyme by mimicking the normal building blocks of HIV DNA.

[\[BACK\]](#)