How is HIV/AIDS treated?

HIV is an acronym for **H**uman **I**mmunodeficiency **V**irus. The HIV virus is primarily transmitted through 1) sexual contact, 2) from an HIV-infected mother to her child during pregnancy, delivery and breastfeeding or 3) through blood and blood products. The virus exploits the body's normal immune system by infecting certain types of white blood cells (our body's "soldiers" in fighting infections and cancers) and turning them into "factories" for making more HIV viruses, releasing them to infect more and more white blood cells. Over a number of years the immune system gets progressively weaker until it can no longer fight infections properly. When a person is getting serious infections from an immune system weakened by HIV, they are classified as having AIDS, **A**cquired **I**mmune **D**eficiency **S**yndrome.

HIV Attacking a white blood cell

As scientists learned about the details of how HIV replicates itself inside our white blood cells, they began developing medications (antiretroviral medications, or ARVs) that interfered with various steps in virus replication. In the 1980's, medications such as zidovudine (AZT) were shown to significantly reduce HIV replication and disease progression. Unfortunately, much if this improvement was short-lived as the virus eventually developed resistance to the drug's effect.

Through years of rigorous basic science and clinical research, and the bravery of HIV patients and activists, it became clear that specific combinations of drugs (which effected different pathways of HIV replication) would lead to significant and lasting reductions in HIV in the body, and a dramatic reduction in AIDS-related deaths. In the late 90's these combinations, termed HAART (highly-active anti-retroviral therapy) lead to a revolution in how HIV was treated.

In the years since, many additional drugs and drug combinations have been developed which decrease the number and frequency of pills to be taken, and the side effects of the drugs themselves. Until 2002, the cost of these newly-developed drugs (often over $1,000/month) was completely out of reach for all but the richest Africans. In 2002, generic drug manufacturers in India defied international patent regulations to manufacture and distribute generic versions of these drugs at a cost of about $20/month. The reduction in AIDS-related deaths was reported as well and, contrary to the fears of many, it was found that even the poorest and least educated patients' compliance to the medications was very good, even higher than in developed countries.

In 2004, the Malawi Ministry of Health (MoH), began an ambitious project to scale up the delivery of a World Health Organization (WHO)-approved regimen known as Triomune, produced in India. Their "public health approach" used

primarily nurses and lower level providers to dispense ARVs. This medication is taken orally just twice a day, at a cost of about $11/month. This enabled Malawi to have the lowest cost and most effective HIV treatment programs in the region.

Malawi is now working toward implementing a program to increase the number of patients on treatment by treating them earlier in the disease, maximizing HIV testing and treatment in pregnant women to reduce or eliminate new infections in children, and transitioning to a once-a-day ARV medication. In combination with a broad HIV prevention strategy, it is expected that we will continue to see reductions in HIV-related deaths, as well as new HIV infections. See Why Treat HIV