Fighting a deadly fungus:
A new strategy to reduce deaths due to *Cryptococcus*

Cryptococcal meningitis is a leading cause of death among people living with HIV. In sub-Saharan Africa, it is estimated to kill more people than tuberculosis.

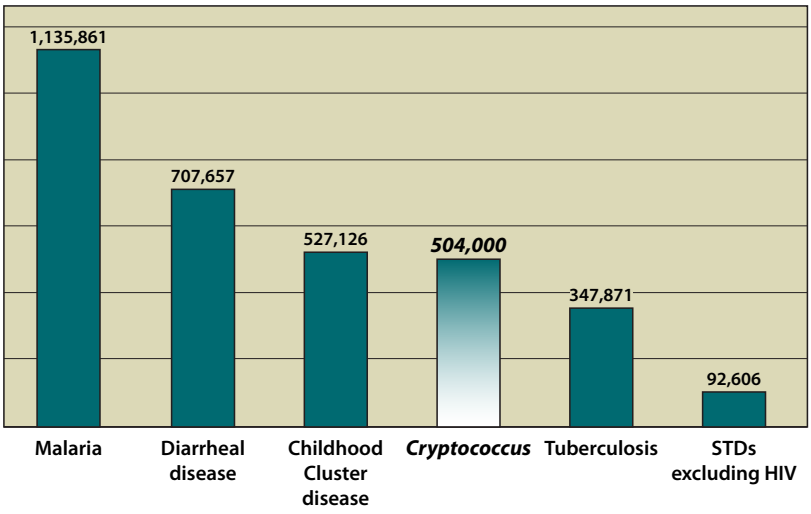
The infection caused by Cryptococcus "is one of the most dangerous HIV-related issues… HIV therapy programs should not neglect to address this still lethal disease."

Vincenzo Esposito and Antonio Chirianni, *HIV Therapy* 2010

What is *Cryptococcus*?

Cryptococcus is a fungus that is found in the soil and produces spores that can be inhaled. People can get *Cryptococcus* early in life but never know it. If a person's immune system is weakened (for example, by HIV), *Cryptococcus* can cause a life-threatening infection called cryptococcal meningitis.

Estimated causes of death in sub-Saharan Africa, excluding HIV, 2009



Adapted from Park, et al., *AIDS* 2009

Why is *Cryptococcus* a major public health issue?

- It is a leading cause of death among people living with HIV.
- *Cryptococcus* is the most common cause of meningitis in Africa. Meningitis develops after the dormant fungus has been reactivated. For people living with HIV, it can be triggered when their CD4+ count drops.
- Cryptococcal meningitis mortality is high (50–70%).
- In developing countries, medication to treat cryptococcal meningitis is often unavailable or too expensive.
- Management of cryptococcal meningitis is intensive, requiring frequent lumbar punctures and lifelong medication.

National Center for Emerging & Zoonotic Infectious Diseases
Division of Foodborne, Waterborne, and Environmental Diseases

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New solutions for treating *Cryptococcus*

Because it is not possible to prevent the initial infection, it is best to screen people who have been exposed to *Cryptococcus* to prevent meningitis from developing. A novel dipstick screening test (currently pending FDA approval) has just been developed that is

Simple: It's easy to learn how to perform the test and read the results

Available: It's a test that can be performed in the clinic, so people who live in remote rural areas (where there are no laboratories nearby) can use it, too

Effective: The test is highly sensitive and highly accurate (>95%)

Affordable: It costs $2 per test

Quick: Results are available in 10 minutes

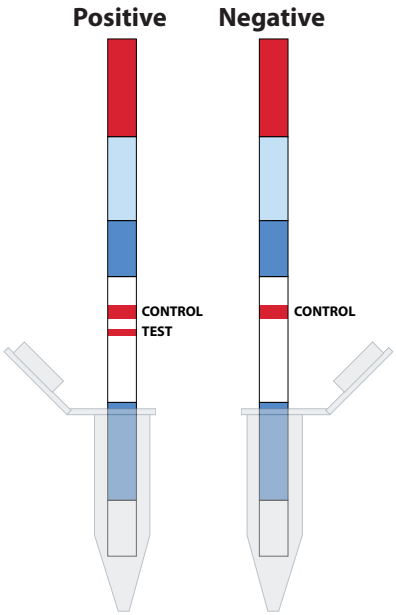
If screening detects the presence of *Cryptococcus*, beginning treatment at this point—before meningitis develops—is

Affordable: The medication that can be used before meningitis develops (oral fluconazole), is free or inexpensive ($1–$2 per month)

Cost-effective ($180/life year gained), similar to other more widely used preventive measures, such as co-trimoxazole prophylaxis or tuberculosis preventive therapy

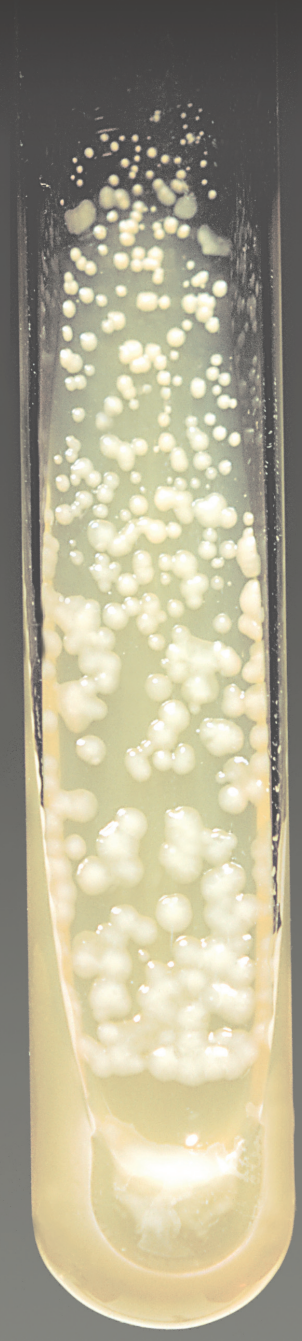
Lifesaving: Studies where people were treated before developing meningitis have demonstrated better outcomes

Dipstick screening test



"The magnitude of the benefit of …screening [for Cryptococcus] is overwhelming."

David Meya et al., *Clinical Infectious Diseases* 2010



Cryptococcus: A call to action

By 2015, equip one-half of all HIV clinics in Africa and Asia to perform *Cryptococcus* screening and diagnostics. This could save 50,000–100,000 lives each year.