

Slide	Presentation Notes
1	Ready for a quick tour through malaria?
2	Much to cover – far more than can be covered in 1 hour. Will hit the highlights as I see them, and answer the following questions... We'll only be discussing <i>P. falciparum</i> .
3	What's the big deal? 3 billion people at risk. 500 million cases each year, >90% in Africa. 1-3 million deaths per year, most of them infants and children.
4	Over the past 50 years, malaria has receded from affluent areas of the world. First the southern U.S. and Europe, then areas like China and much of Brazil. How does this affect development? Now compare these two maps – malaria risk vs GDP – what do you see? (mirror images). Malaria reduces GDP in high-burden countries up to 1.3%, leading to large wealth divides over time between countries with and without malaria. Accounts for up to 40% of public health spending in some high burden countries.
5	Before we get to the clinical disease, let's look at the vector, the female anopheles mosquito.
6	This is the typical anopheles breeding ground – transient pools of freshly standing water. VERY difficult (if not impossible) to clear these after a rain.
7	Ethiopian highlands – work low, sleep high – a malaria avoidance strategy.
8	On to the clinical...
9	Narrate slide on uncomplicated malaria.
10	How does this compare to severe malaria? We'll see this slide again, so try to remember this WHO classification.
11	What determines uncomplicated vs severe malaria?
12	At a cellular / microscopic level – CDC life cycle – mosquito stage, liver stage, blood stage. Amplification occurs through schizogony (16-24:1), first in the liver for ~6 days, then in the blood every ~48 hours; time from infection to clinical disease usually ~10-12 days. Usual diagnostic stage -- trophozoites in blood; because of 'sequestration,' usually only see young trophozoites in peripheral blood smear. If you DO see schizonts in blood, look out, parasitemia is about to skyrocket!
13	How do we diagnose malaria? Recommendations from WHO Malaria Treatment Guidelines 2010. (<i>Note: more recent guidelines have been released, so these and other slides from 2010 should be updated before use</i>)
14	Narrate slide on clinical diagnosis of uncomplicated malaria.
15	Narrate slide on confirmatory diagnosis of uncomplicated malaria.
16	A word on light microscopy. Note 'reflector' mirror (no electricity needed) used in many rural health centers.
17	Contrast to rapid diagnostic tests, increasingly becoming standard of care in lower volume settings, because of falling costs, high sensitivity/specificity, ease of use by community health workers and non-specialized health workers.
18	How do we manage uncomplicated malaria?
19	Ask for volunteer to read quote.
20	Narrate slide.
21	Note key recommendations, use of artemisinin-combination therapy, tailored according to local resistance patterns.
22	Basically, no ACT in 1st trimester unless no other effective treatment available. ACTs are preferred in 2nd and 3rd trimesters.

23	Major point here is children can get sick quickly and with relatively little warning. Caution advised.
24	Ask for volunteer to read quote.
25	Can anyone recall the 5 components of the WHO practical classification for severe malaria?
26	Patients are critically ill and should be managed as such (ICU if available, fluid resuscitation, etc.)
27	Narrate slide.
28	Narrate slide.
29	Some details of specific management. Generally pitched too high for pre-clinical audience, but can touch on the highlights.
30	One quick clinical pearl – respiratory distress in a child is more likely to be metabolic acidosis – in which case fluids should continue to be given cautiously. Whereas respiratory distress in an adult is more likely to be acute pulmonary edema, so fluids should be stopped and diuresis considered.
31	Thank you.