

“Invest in the future. Defeat malaria.”

WHO World Malaria Day, 2015

Introduction

- 3.2 billion people are at risk for malaria; 584,000 deaths in 2014
- Since 2000, 47% reduction in the global mortality rate, translating to 4.2 million lives saved
- KSA is a non-endemic country, though the southwest is at high risk

Objectives

- Evaluate malaria trends in KSA from 2002 – 2011
- Analyze malaria incidence rates (IRs) stratified by administrative region, age, *Plasmodium* species, and transmission mode

Methods

- IRs and 95% confidence Intervals (CIs) estimated using number of cases per year over total population per 100,000 persons in 13 KSA administrative regions from 2002 – 2011
- Proportion of malaria cases investigated by:

- Age category
- Species (*Falciparum*, *Vivax*, *Quartan*, and *Oval*)
- Modes of transmission:
 - Local
 - Imported local (reported in one area of KSA but originally transmitted in another area of KSA)
 - Outside (imported from abroad)
 - Unclassified malaria parasite species
 - Illness by relapse or acquired by blood transfusion

Results

- 17,897 cases of malaria reported to KSA MoH from 2002 – 2011
- In 2002, the IR for total population was highest [12.1 per 100,000 population (95%CI = 11.6 - 12.6)]; in 2007, the second-highest IR occurred [11.8; 95%CI = 11.4 - 12.2]
- Of 13 regions, greatest IRs were observed in Jazan
- Tabuk, Jawf and Eastern Region had consistently lower IRs than other regions
- Proportion of those with malaria was consistently much higher for individuals > 15 years old than for those younger
- In 2012, proportion of malaria cases due to *P. falciparum* was much lower than that due to *P. vivax*
- Malaria cases in KSA are mainly imported

Table 1. Reported Cases of Malaria and Incidence Rates, by Year, Kingdom of Saudi Arabia, 2002 – 2011

Year	#	IR ^o	95% CI
2002	2,583	12.1	11.6 - 12.6
2003	340	1.5	1.3 - 1.7
2004	1,229	5.4	5.1 - 5.7
2005	1,058	4.6	4.3 - 4.9
2006	1,278	5.4	5.1 - 5.7
2007	2,862	11.8	11.4 - 12.2
2008	1,491	6	5.7 - 6.3
2009	2,337	9.2	8.8 - 9.6
2010	1,934	7.1	6.8 - 7.4
2011	2,787	10	9.6 - 10.4
Total	17,897		

Figure 4. Proportion of Reported Malaria Cases, by Age Category, Kingdom of Saudi Arabia, 2002 – 2011

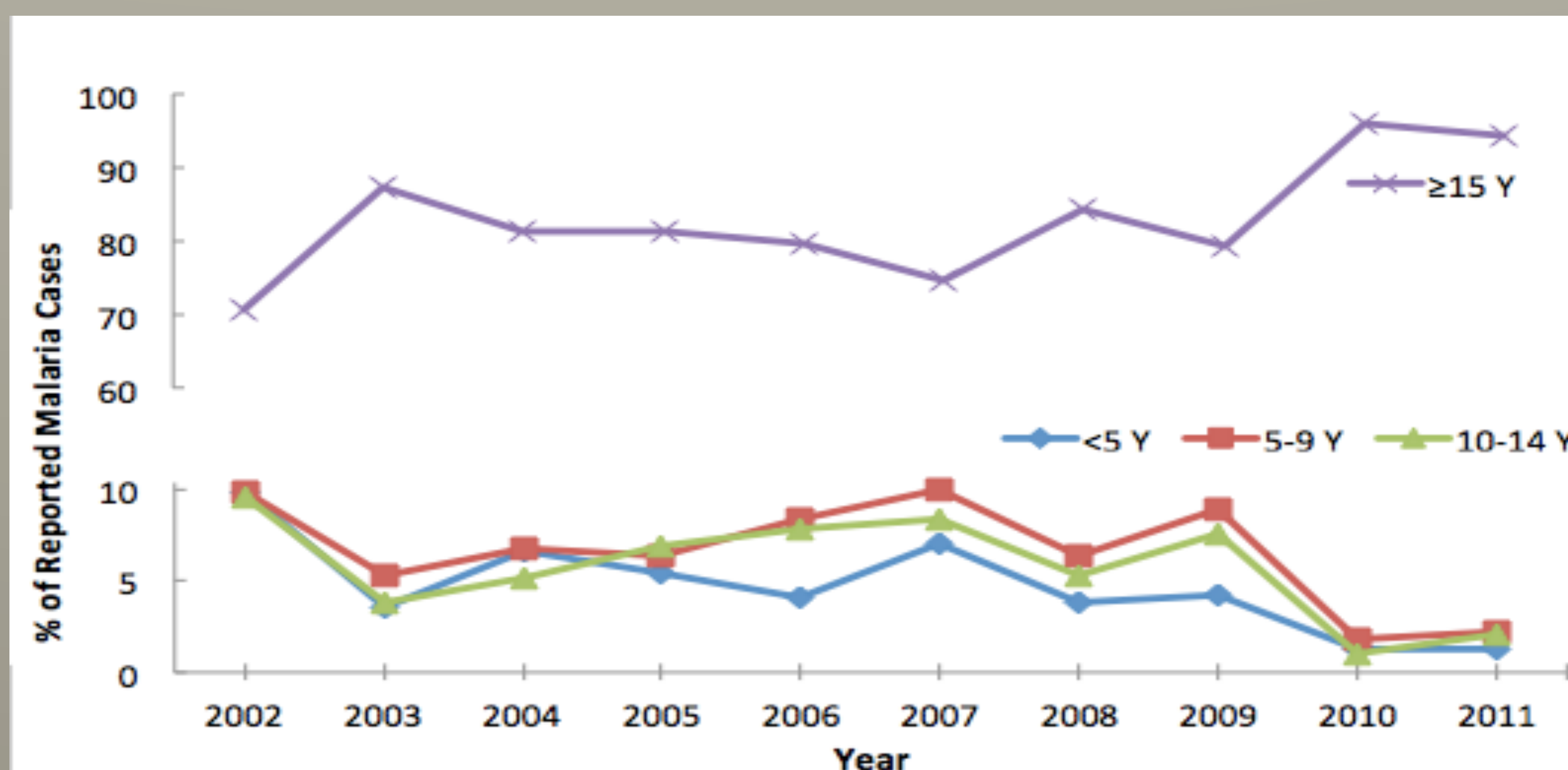


Figure 5. Proportions of Malaria Cases, Plasmodium Species, Kingdom of Saudi Arabia, 2002-2011

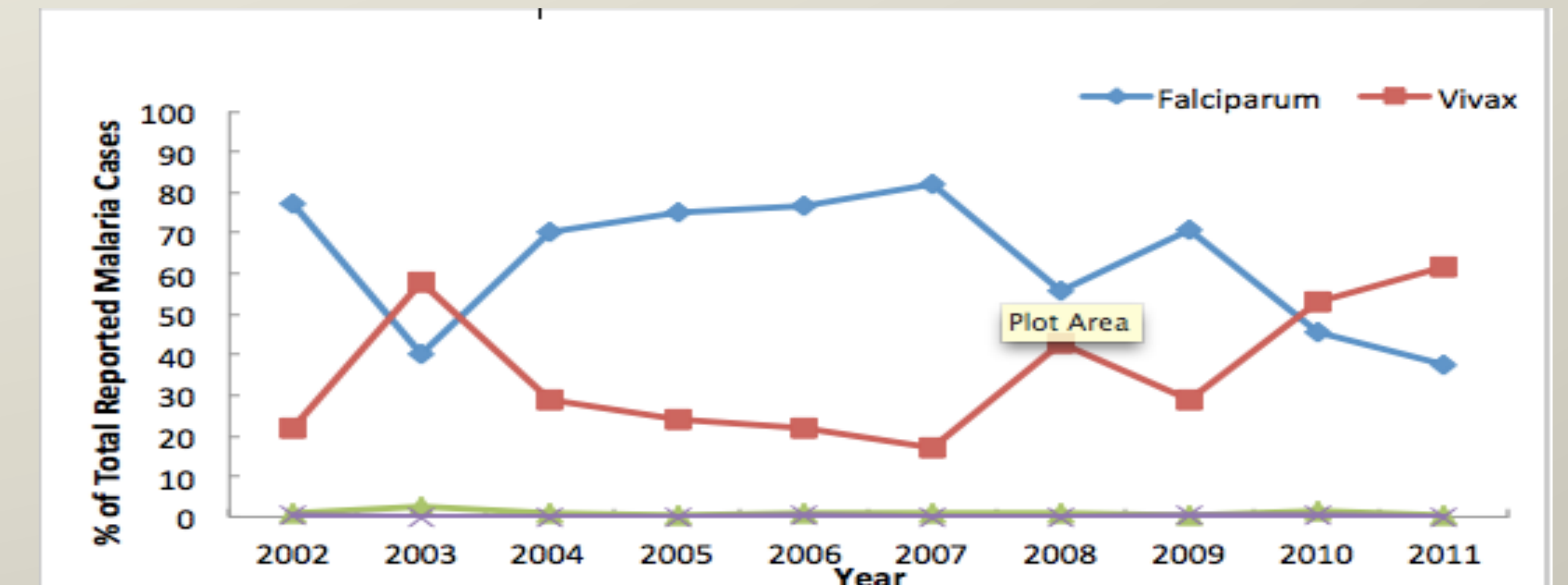
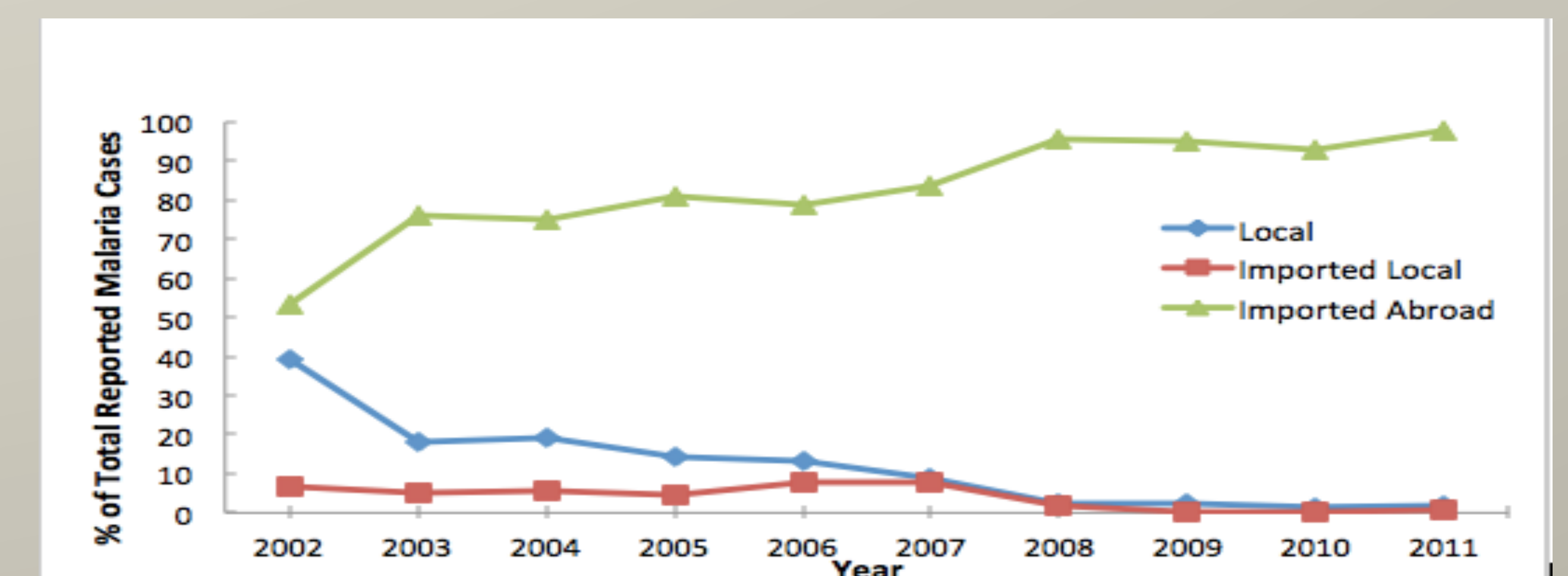


Figure 6. Proportion of Reported Malaria Cases, by Transmission Category, Kingdom of Saudi Arabia, 2002 – 2011



Discussion

- Imported malaria has been major source of reported cases since 2002

Recommendations

- Improve surveillance system to eliminate and prevent malaria
- Improve case definition, data collection, and data analysis
- Overcome political issues with Yemen to facilitate effective preventive measures
- Test those visiting the Kingdom for work, tourism, or religious purposes for any signs of malaria before entry

Acknowledgments

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Figure 1. Malaria-Endemic Countries in the Eastern Hemisphere, Centers for Disease Control and Prevention

