



## ANTIMALARIAL MARKET IMPROVEMENTS IN CAMBODIA FROM 2009 TO 2015

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### BACKGROUND

Key strategies have been implemented in Cambodia to address the threat of artemisinin drug resistance and to achieve malaria elimination. These include scale-up of a Village Malaria Worker (VMW) program, and increased private sector regulation and engagement.

### METHODS

Nationally-representative malaria outlet surveys were conducted in 2009, 2011, 2013 and 2015. A census of public and private outlets with potential to distribute malaria testing and/or treatment was conducted among a representative sample of administrative units. An audit was completed for all antimalarials and malaria rapid diagnostic tests (RDT), and information was also gathered on malaria microscopy.

### RESULTS

**Have antimalarial stocking practices changed in recent years?** Within the public sector, data trends suggest declines in antimalarial availability in public health facilities and among VHWs since 2011, such that in 2015 availability in facilities was 78% and among VHWs, 74%. There have been declines in antimalarial availability among all private sector outlet types since 2009. In 2015, antimalarials were available in approximately one-third of private health facilities (31%), 21% of pharmacies, 7% of drug stores and 15% of itinerant drug vendors (Figure 1).

**Have there been changes in recent years in the antimalarial composition?** Between 2009-2013, most of the relative antimalarial market composition comprised of private sector outlets. In 2015, more than half of the market composition were public sector, including many VHWs (41%). In the private sector, the market composition shifted over time, with a declining presence of informal unregulated outlet types (drug stores, general retailers, and itinerant drug vendors) and a relative increase in service delivery points that were private for-profit health facilities (Figure 2).

**How has antimalarial distribution changed over time?** Public sector antimalarial market share increased over time from 30% in 2009 to 41% in 2015. Artemisinin-based Combination Therapy (ACT) relative market share decreased between 2009 (72%) and 2011 (52%), and increased to 87% in 2013 and 94% in 2015. Oral artemisinin monotherapy (AMT) accounted for 6% of total antimalarial market volume in 2009 and 1% in 2011, but was no longer reportedly sold/distributed in 2013 and 2015. Chloroquine was only sold/distributed in the private sector in 2015 and accounted for 5% of the market share (Figure 3).

**Where antimalarials are distributed, is confirmatory testing available?** Availability of confirmatory testing, either by malaria RDT or microscopy, remained high over time in the public sector. In 2015, over 90% of antimalarial-stocking public health facilities had testing available. In 2015, 65% of private sector outlets with antimalarials had confirmatory testing available, including over 80% of private health facilities and 70% of pharmacies.

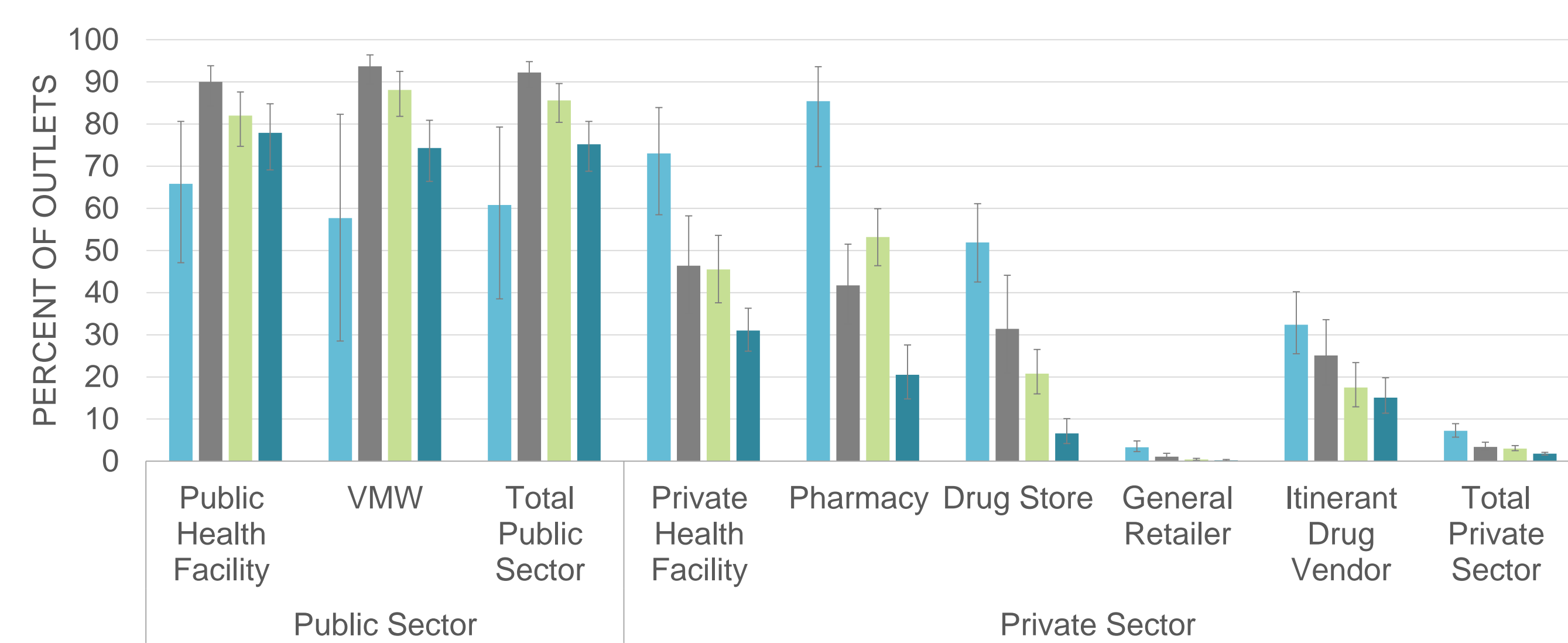
**Do private sector outlets engaged in malaria testing and treatment receive support from government or non-government organizations?** Nearly half of private sector outlets providing malaria testing and/or treatment reported receiving one or more types of support including subsidized commodities, training, supervision, and/or caseload data reporting (Figure 5).

**What types of support do private sector outlets receive?** The most common types of support reportedly received were access to subsidized antimalarials (58%), subsidized RDTs (63%), and case management training within the past year (59%). Supervisory visits were less commonly reported (21%) (Figure 6). The majority of outlets reporting each type of support reported receiving the support from an NGO, with the exception of caseload data reporting, which was commonly reported as a type of engagement received from both NGOs and the national malaria control program.

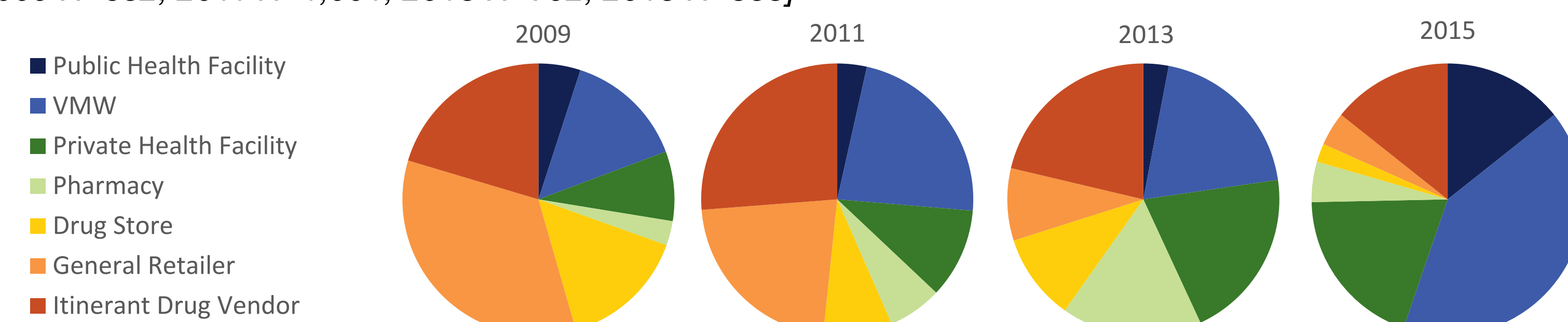
### CONCLUSION

Repeat outlet surveys in Cambodia demonstrate the success of public and private strategies to improve case management. VMWs are now a common service delivery point for antimalarial treatment, and the role of the informal unregulated private sector in malaria case management has declined over time. The private sector still accounts for the majority of antimalarial distribution. In 2015, nearly half of private sector outlets providing malaria testing and/or treatment reported receiving some sort of support or engagement by government or non-government organizations, such as training or access to subsidized commodities. Given the continued role of the private sector in antimalarial distribution in Cambodia, there is need to scale up private sector engagement and support to ensure quality case management. Finally, while overall public sector readiness to test and appropriately treat has remained relatively high in recent years, gaps particularly in first-line treatment availability should be addressed to ensure that all suspected cases are tested and treated according to national guidelines.

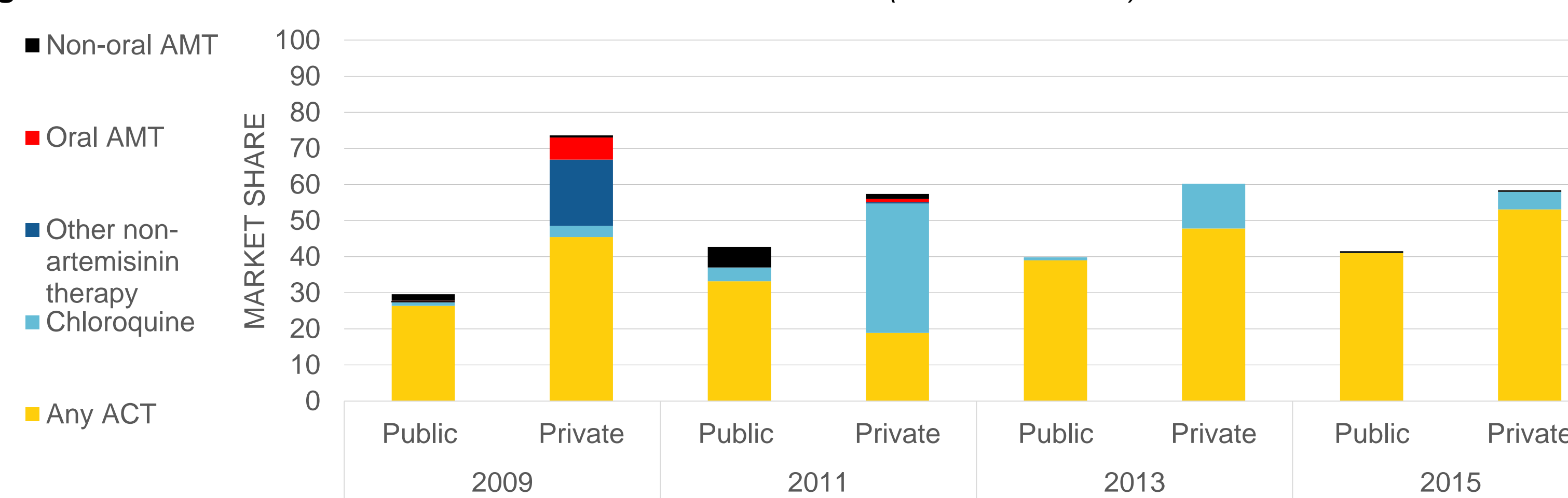
**Figure 1: Availability of any antimalarial on the day of the survey** Among all screened outlets [All outlets: 2009 N=7,513; 2010 N=17,920; 2013 N=15,755; 2015 N=26,664]



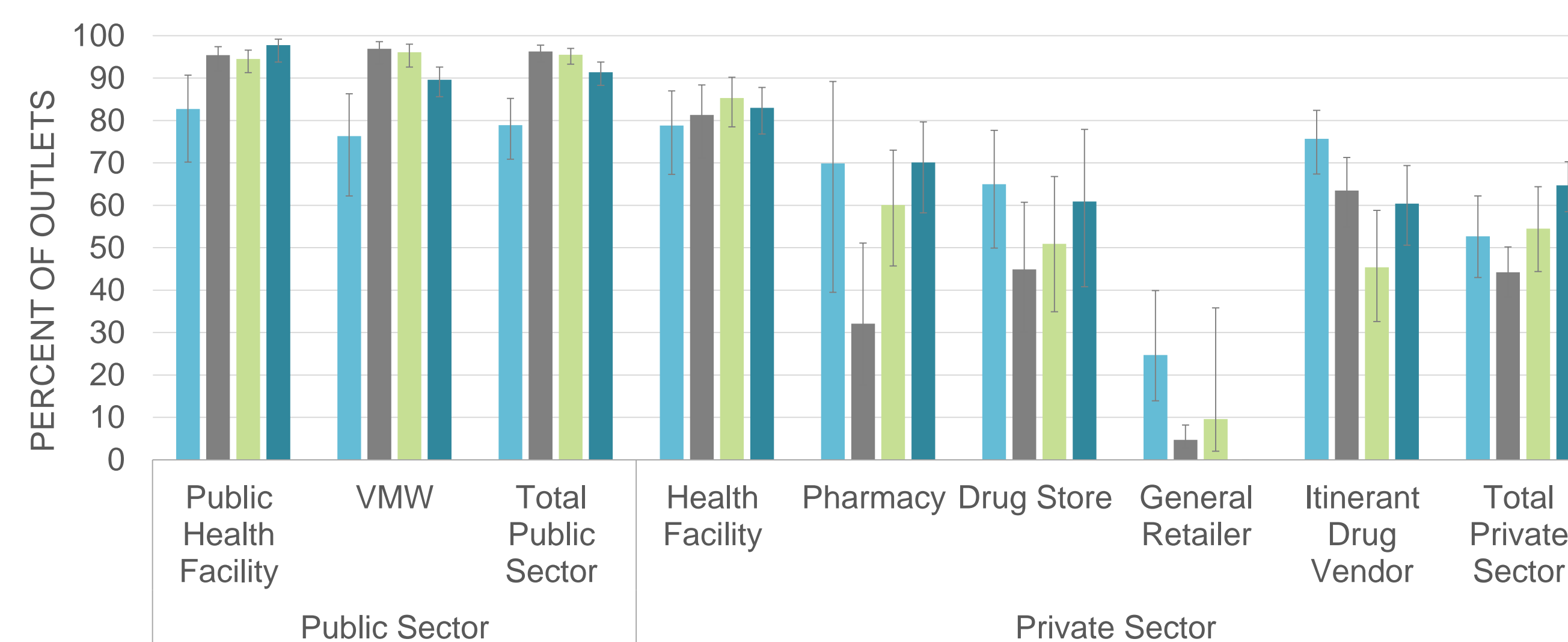
**Figure 2: Antimalarial market composition by outlet type** Among outlets with at least one antimalarial in stock [2009 N=652; 2011 N=1,001; 2013 N=792; 2015 N=858]



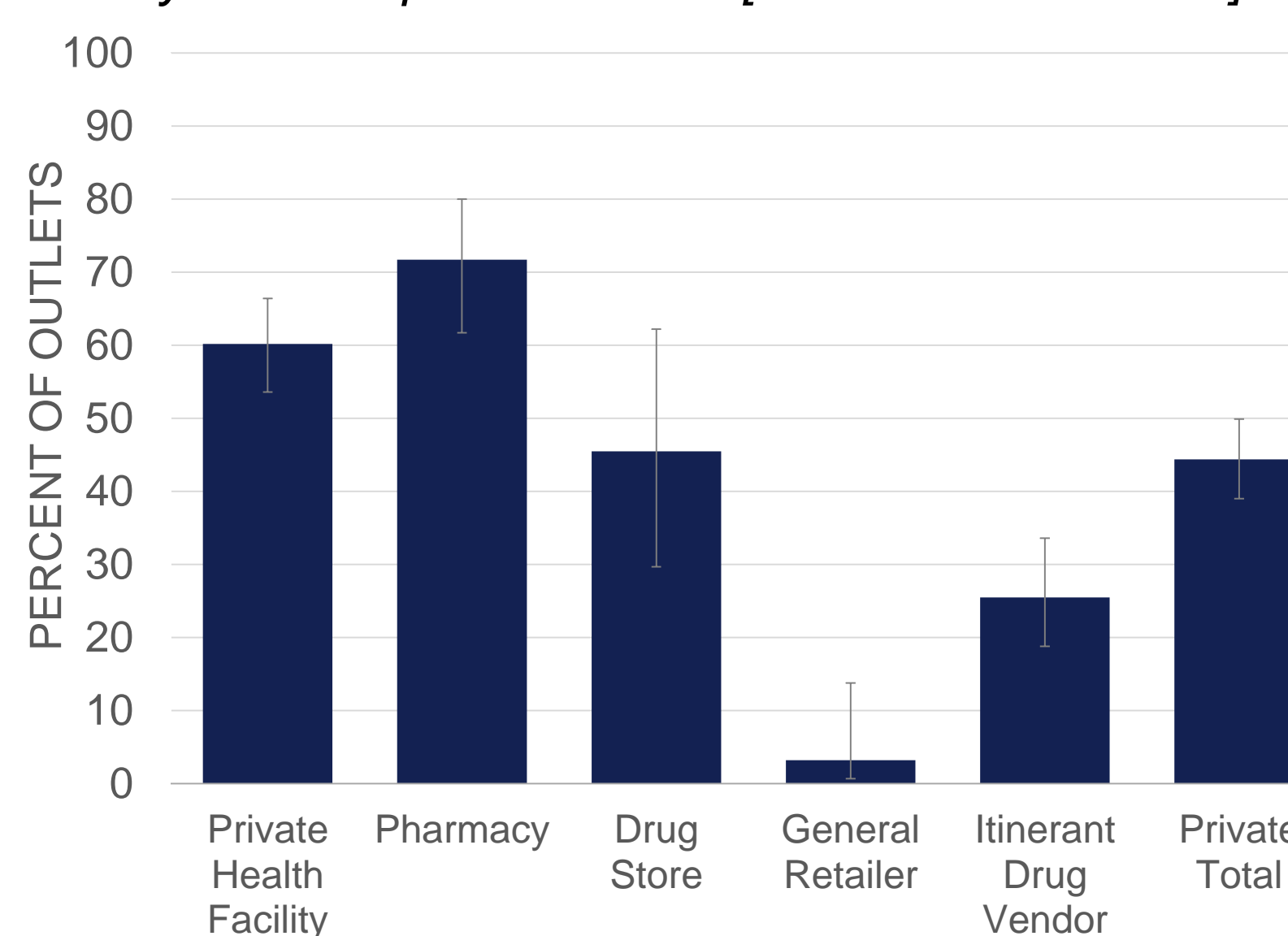
**Figure 3: Antimalarial market share** Relative market volume (sale/distribution) of antimalarials



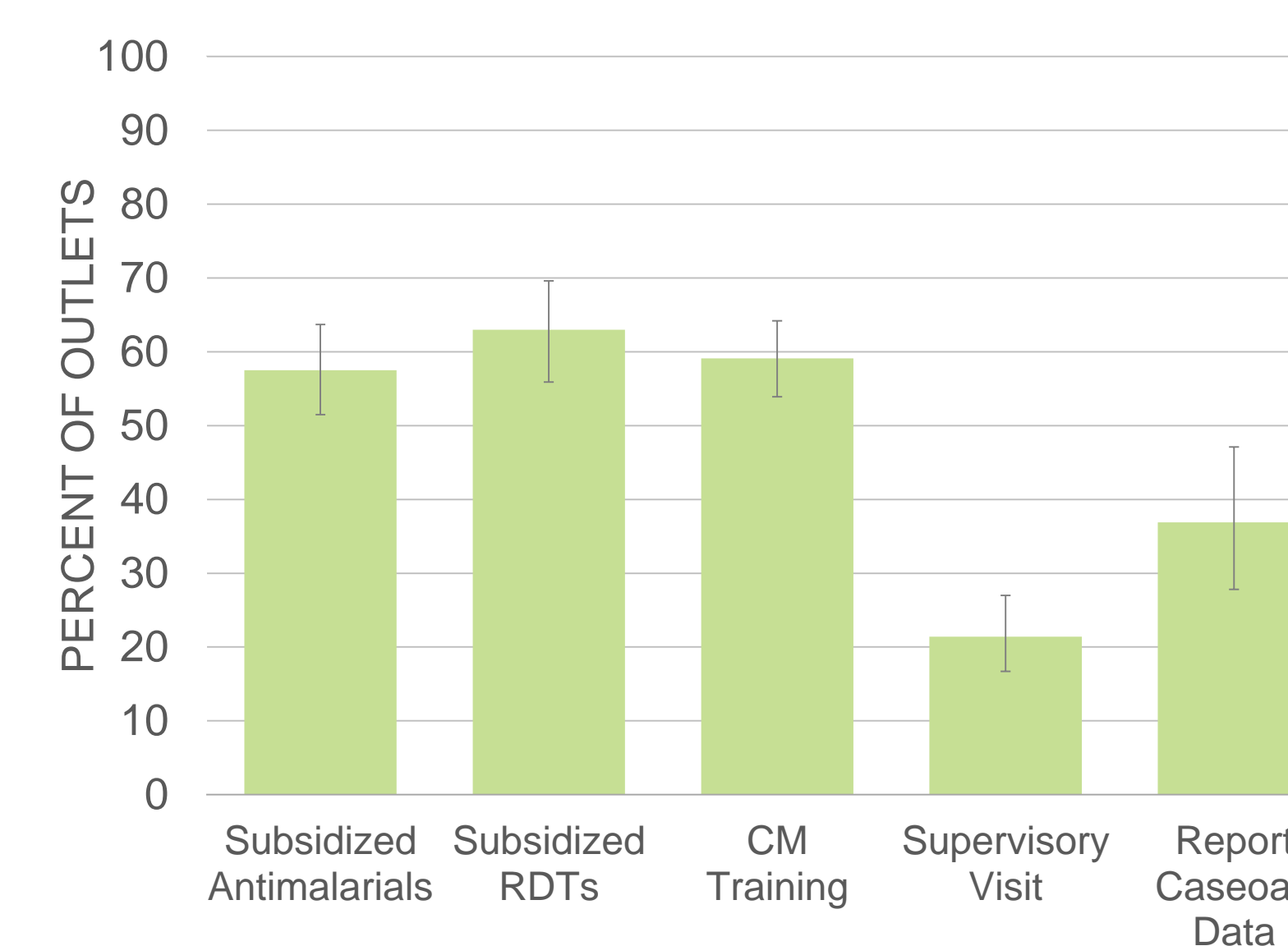
**Figure 4: Availability of malaria blood testing** Among outlets stocking antimalarials on the day of the survey or in the past 3 months [All Outlets: 2009 N=867; 2011 N=1,516; 2013 N=1,338; 2015 N=1,112]



**Figure 5: Percentage of private sector outlets that report receiving any type of support** Among outlets with testing or treatment in stock on the day of the survey or in the past 3 months [Private Total=N=727]



**Figure 6: Types of support reportedly received by private sector outlets** Among all outlets reportedly receiving support [N=264-268]



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