

Multidisciplinary stock management and reduced distribution of medicine up to a drug patent expiry reduced expenses without compromising medicine supply in a hospital setting

L. Refsgaard, Capital Region Hospital Pharmacy, Copenhagen, Denmark. E-mail: louise.konradsen.refsgaard@regionh.dk
 B. Abildtrup, Amgros I/S, Procurement, Copenhagen, Denmark. E-mail: bia@amgros.dk
 L. Skovsted, Capital Region Hospital Pharmacy, Copenhagen, Denmark. E-mail: linda.berg.skovsted@regionh.dk

OBJECTIVES

The aim of this project was to test a method that increases the economic benefit of a drug patent expiry. The method aims to reduce the use of the original product (Viread®) immediately before entrance of generic competitors without putting the medicine supply at risk.

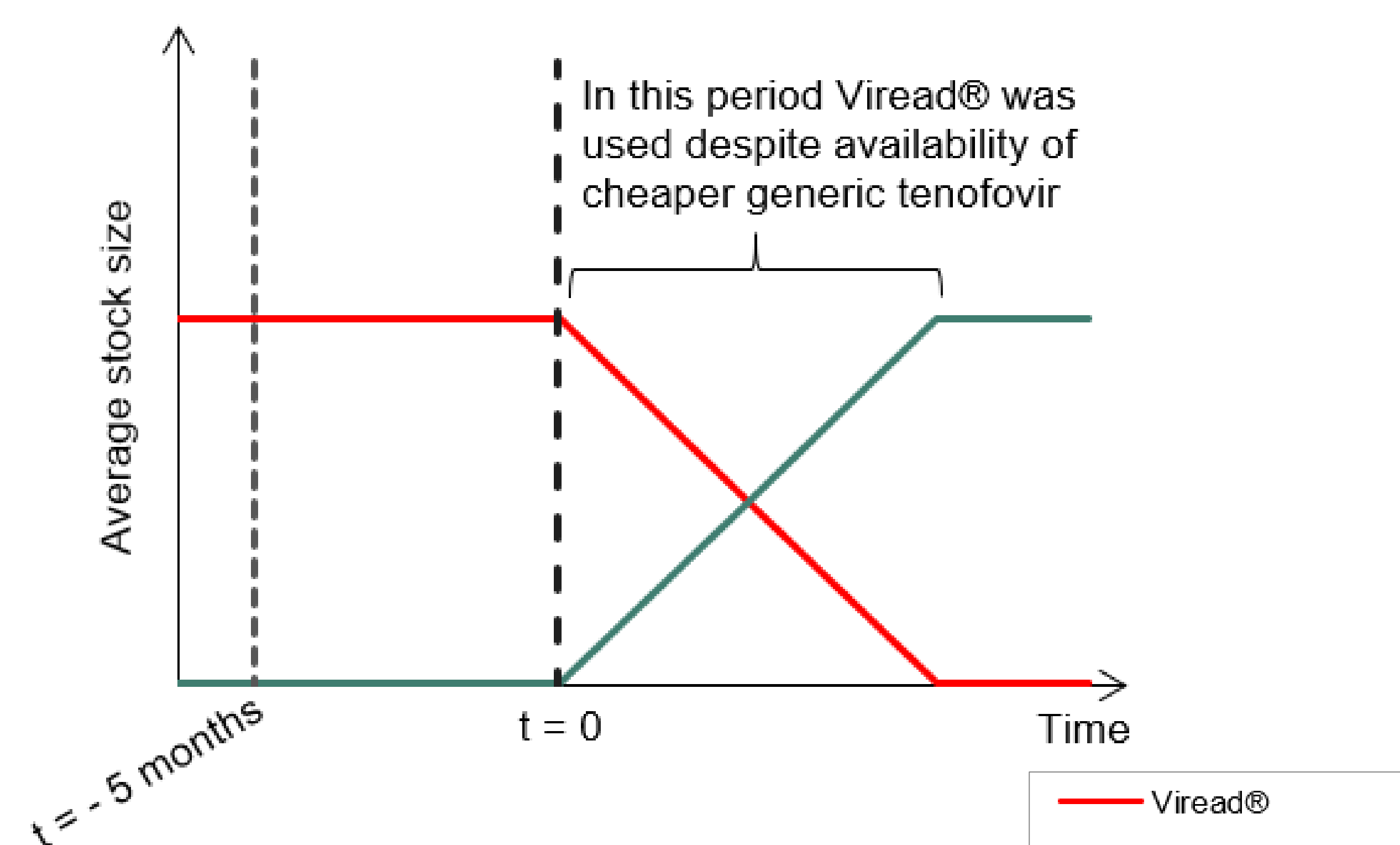
METHOD

We tested the new method when the patent on Viread® (tenofovir disoproxil) expired in 2017 and generic tenofovir entered the market. The method aimed to increase the economic benefit of the patent expiry by:

- 1) Fitting the tender period to the patent expiry of Viread®.
- 2) Interviewing the presumed generic suppliers in advance of the tendering process to obtain low prices and supply reliability of generic product.
- 3) Fitting the direct-to-patient distribution of Viread® to the tender period end date rather than consistently distributing medicine for 6 months' treatment, e.g. 1 month before generic tenofovir availability, the patient will get 1 package of Viread® instead of 6 packages.
- 4) Depleting the stock of Viread® at the hospital pharmacy and at local stocks in the outpatient departments before the beginning of the new tender period (see Figure 1).

The effect on economy and supply reliability was evaluated.

A) Original Method



B) New Method, Capital Region

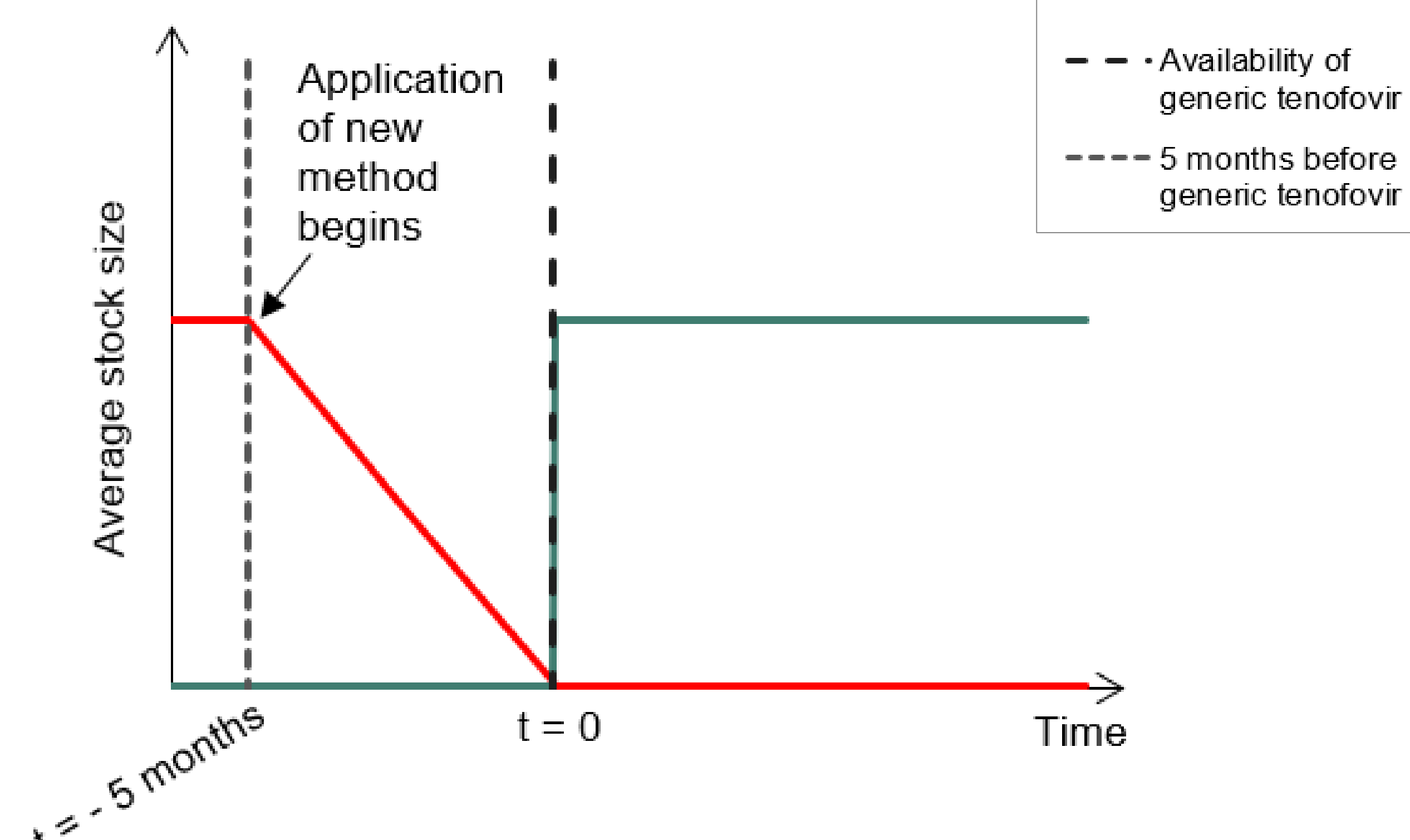


Figure 1: Illustration of average stock sizes before and after availability of generic tenofovir. The illustration represents the stock size at the hospital pharmacy as well as at local stocks in the outpatient departments. T = 0 indicates the time of generic tenofovir availability. A) With the original method, there is no change in the stock size before the availability of generic tenofovir. After t = 0 the stock of generic tenofovir increases gradually as Viread® is used up. B) With the new method, Viread® stocks are depleted the last 5 months before availability of generic tenofovir. This allows the switch to generic tenofovir to occur on the first day of the new tender period. Moreover, the direct-to-patient distribution is reduced in the same period. Thus, the method increases the economic benefit of the patent expiry remarkably.

Expenses used on Viread®

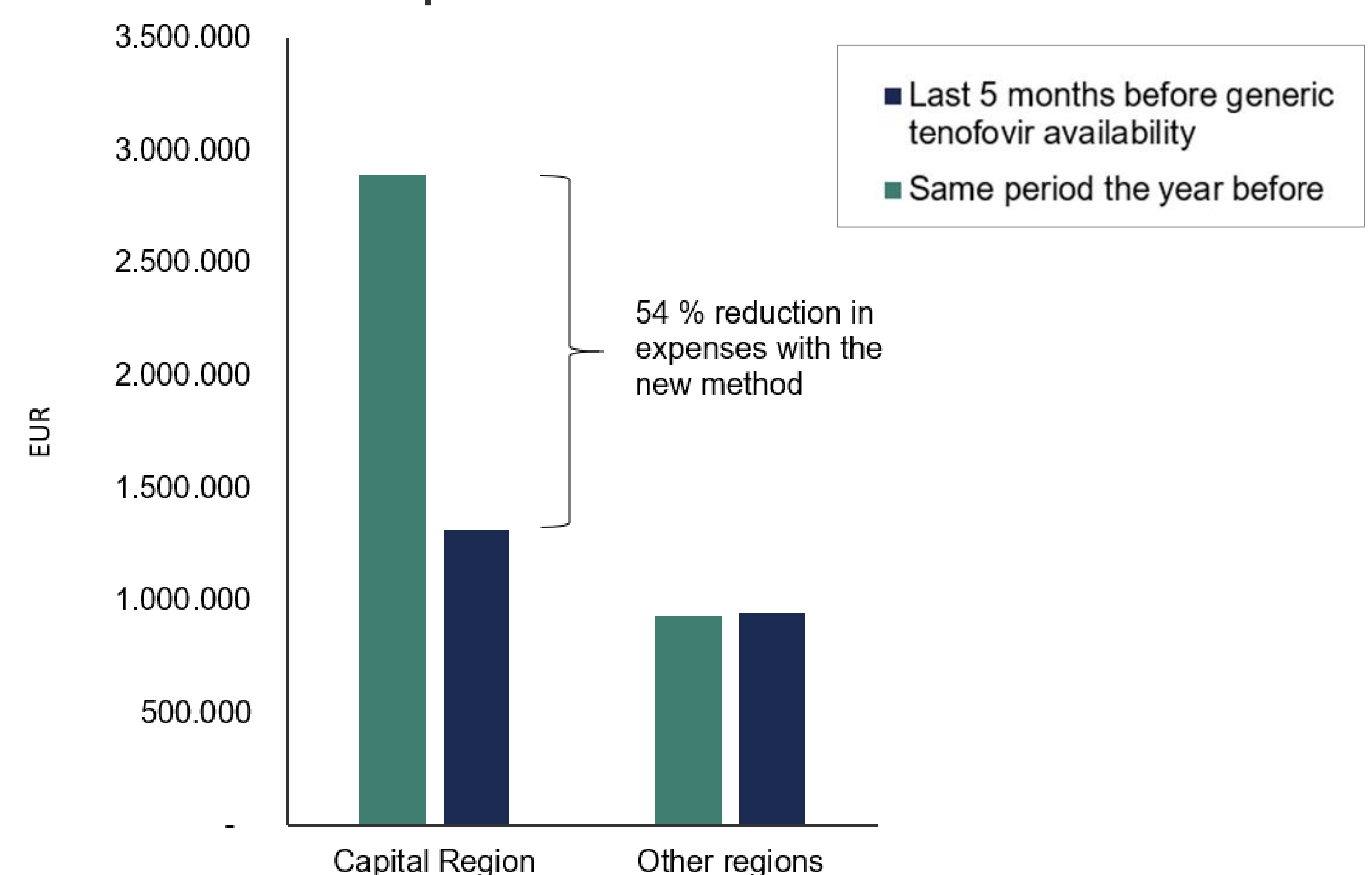


Figure 2: The Capital Region reduced Viread® expenses with 54 % by applying the new method. Applying the new method the last 5 months before availability of generic tenofovir resulted in a 54 % reduction in expenses compared to the same period the year before. The other regions applied the original method and obtained no reduction before the patent expiry.

RESULTS

In the Capital Region, the new tested method led to a 54 % reduction in medicine expenses in the last five months before availability of generic tenofovir compared to the same period the year before (see Figure 2). The rest of the country continued as usual and obtained no economic benefit prior to availability of generic tenofovir. The supply of generic tenofovir was sufficient in the whole country.

DISCUSSION

The pronounced success of the method was highly dependent on crucial elements:

- Close collaboration and trust between the generic supplier, the tender organization (Amgros I/S), the Capital Region Hospital Pharmacy, the outpatient departments and the patients.
- An accurate forecast of consumption of generic tenofovir.
- Patient information leaflets which emphasize that generic tenofovir is of similar quality and safety as Viread®.
- Close monitoring of stocks and distribution practice to support implementation of the new method.

The same method has been applied in 2018 as the patent on Humira® (adalimumab) expired. This second application of the method confirmed that the method is very effective in reducing medicine expenses without compromising the medicine supply.

CONCLUSION

The method reduced the use of Viread® immediately before generic tenofovir availability and allowed the switch to generic tenofovir to occur on the first day of the new tender period. This increased the economic benefit of the patent expiry substantially without compromising the medicine supply.

The method has proven successful in a second application and will be applied in the Capital Region of Denmark in the future.

ACKNOWLEDGEMENTS

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