

IMPLEMENTATION OF AN ANTIMICROBIAL STEWARDSHIP

PROGRAMME IN A PRIVATE HEALTHCARE SETTING IN SOUTHERN AFRICA

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CONTEXT

Mediclinic Southern Africa is a private hospital group operating in South Africa and Namibia and focused on providing acute care. The group currently operates 49 private hospitals throughout South Africa and three in Namibia with more than 7 000 beds in total. Evidence demonstrates that hospital-based programmes dedicated to improving antibiotic use, commonly referred to as Antimicrobial Stewardship Programmes (ASPs) can both optimise the treatment of infections and reduce adverse events associated with antibiotic use¹.

PROBLEM

Antimicrobial resistance is an urgent threat of broad concern globally² as well as in South Africa³. Increasingly, governments around the world are beginning to pay attention to a problem so serious that it threatens the achievements of modern medicine. South Africa's access to the recommend specialised resources for ASP⁴, such as infectious disease specialists and clinical pharmacists, is very limited. In addition, in 2010 South Africa as country had only a few ASPs at specific hospitals. Inappropriate antimicrobial drug⁵ choices for surgical prophylaxis, multi-cover (combination therapy with four and more simultaneous antibiotics) and prolonged antimicrobial therapy have been identified as focus areas for our stewardship programme in order to improve the appropriate use of antimicrobials.

INTERVENTION

Mediclinic introduced the ASP to all 52 hospitals in the third quarter of 2011. An electronic quarterly report was developed to measure antimicrobial utilisation in the three focus areas: 1) inappropriate antimicrobial drug choices for surgical prophylaxis, 2) multi-cover and 3) prolonged antimicrobial therapy in a comparable, uniform manner. The report determined progress and trends in the hospital group as well as in individual hospitals and compared hospitals with the same size and case mix.

A clinical pharmacist is a licensed specialist pharmacist with specialised advanced education and training⁶. Since clinical pharmacy is not yet registered with the South African Pharmacy Council there is no official validation of this specialisation. In order to address this acute lack of resources, we have identified 'ward pharmacists' in each hospital to form part of our ASPs. A ward pharmacist is a qualified pharmacist with an interest in clinical pharmacy. These pharmacists attended regular workshops and other training.

As part of the Antimicrobial Stewardship initiative, a guideline on the use of antimicrobials for surgical prophylaxis was compiled based on international references and consultation with local experts⁵. The ward pharmacist used this evidence-based reference as a starting point for their hospital programmes.

MEASUREMENT AND RESULTS

Antibiotic usage data was collected electronically from January 2010 from pharmacy billing data. The results were compared in quarters which unfortunately gave us only six points for our baseline data. To determine the significance of the improvements Run Charts Rules⁷ were applied.

The average percentage of surgical cases with an inappropriate antimicrobial drug choice for surgical prophylaxis has progressively decreased since the introduction of the intervention from a baseline median of 18% to 9% in the last year to the second quarter of 2014 (the new system has not yet stabilised) (Figure 1).

The number of patients on multi-cover decreased by 12% from a baseline of 3.5 per 1000 patient days in 2010 to a new median of 3.1 per 1000 patient days (Figure 2).

There has been no change in the median duration of antimicrobial treatment longer than 7 days from the baseline median of 7 per 1000 patient days (Figure 3).

CHALLENGES AND LESSONS LEARNT

Ward pharmacists equipped with evidence-based guidelines and a uniform measurement report helped to improve Antimicrobial Stewardship in two of our three target areas in a private health care setting within South Africa.

Prolonged antimicrobial therapy, that did not improve, is a complex measure across 52 hospitals, as treatment longer than seven days is indicated in certain patients.

The automated electronic data reports we introduced were essential in helping us evaluate progress; identify problem areas where attention should be given in future; facilitate discussions in the hospitals between the doctors, clinical pharmacists and other health care professionals; and show the way forward with the Antimicrobial Stewardship Programme.

MESSAGE FOR OTHERS

One intervention may not solve all the problems: introducing ward pharmacists in combination with electronic reports successfully addressed the inappropriate use of certain antibiotics for surgical prophylaxis, and reduced multidrug therapy to some extent, but did not reduce the duration of therapy at all. To further improve our ASP, we will need additional changes to our system (probably multi-disciplinary team involvement with individual patients that will facilitate the influence of the ward pharmacists). Tracking various indicators allowed us to see where our change was having an impact and where it was not.

CONFLICT OF INTEREST

None.

Figure 1: The use of correct antimicrobials for surgical prophylaxis has continued to improve over time since the intervention.

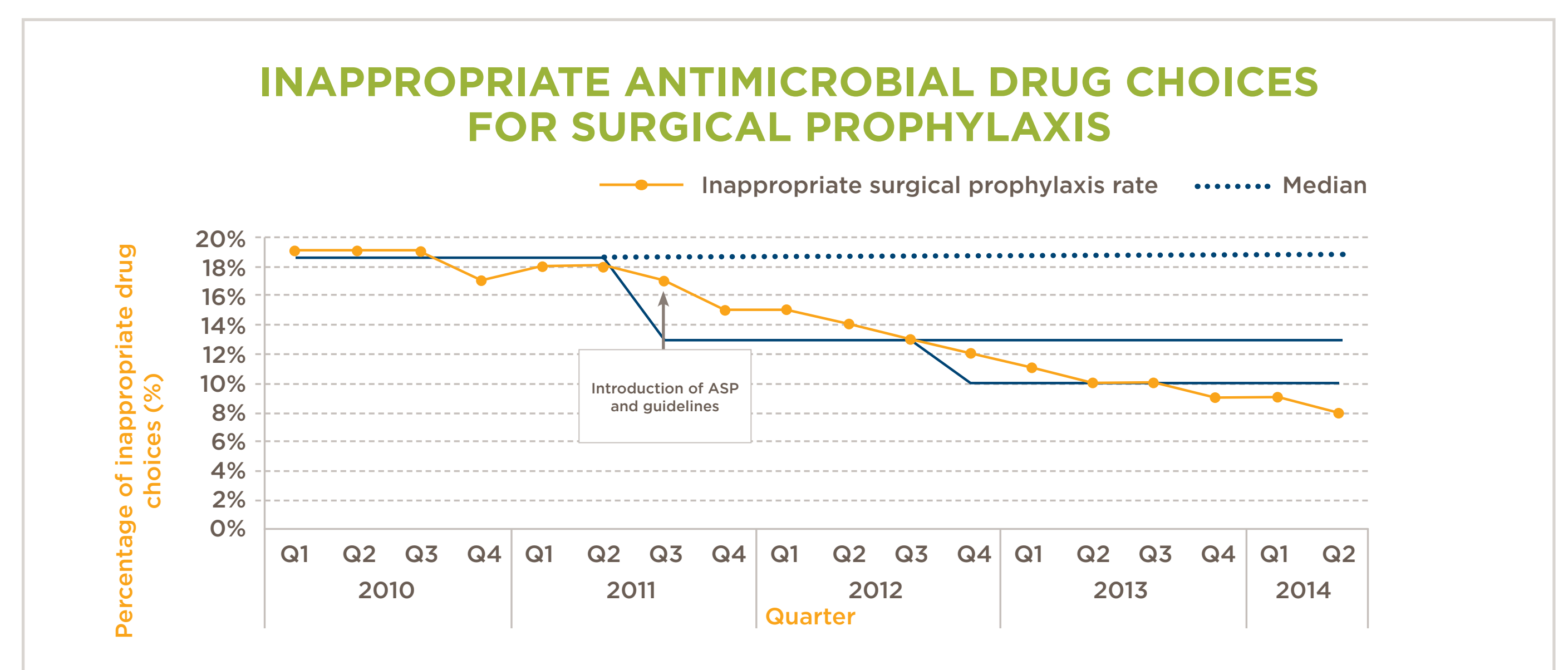


Figure 2: Days on multi-cover significantly improved since the intervention.

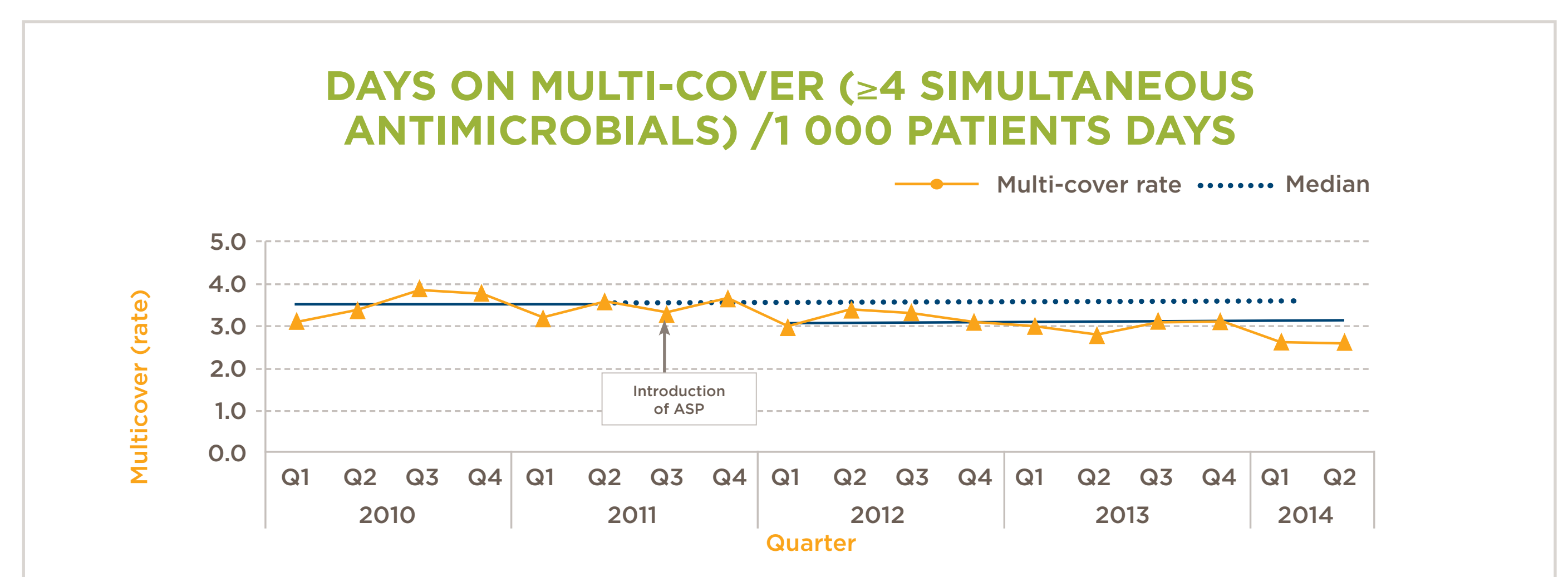
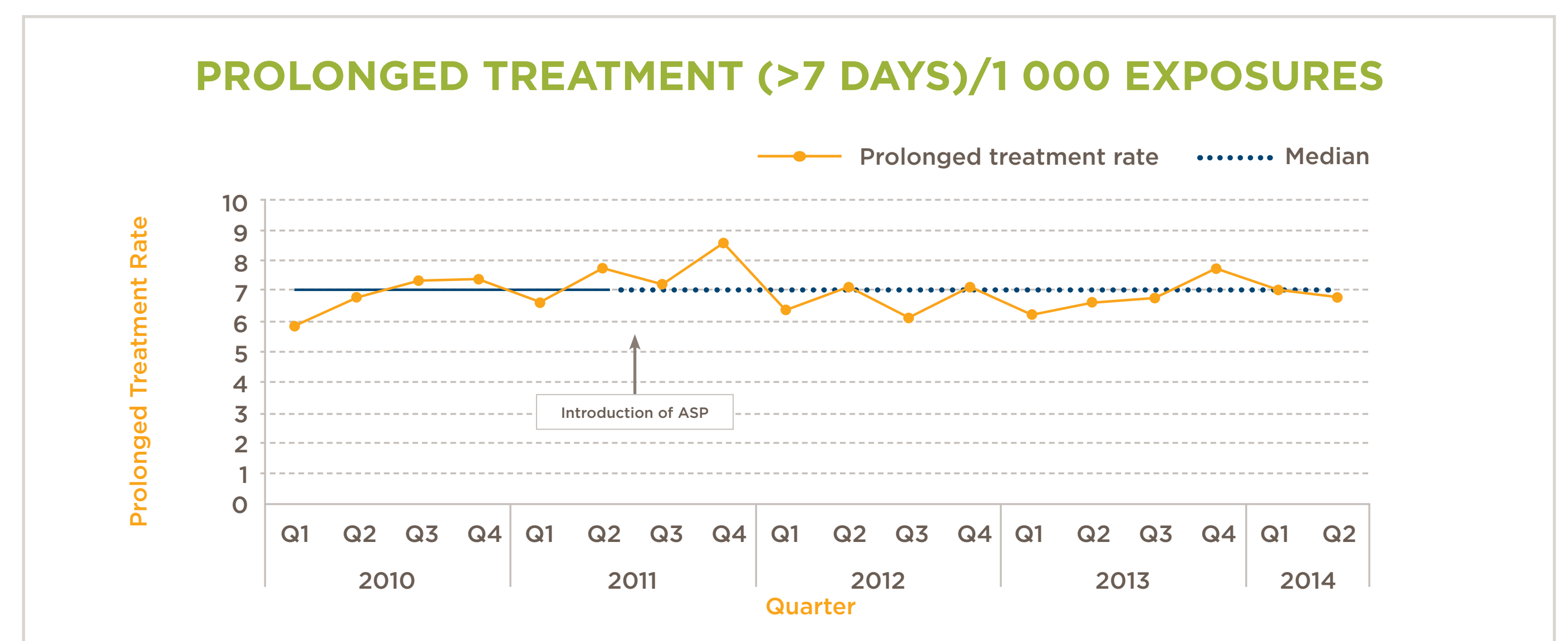


Figure 3: The intervention did not change the use of prolonged antibiotic treatment.



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