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A modified McNulty-Zelen design randomised controlled trial to evaluate the TARGET Antibiotics toolkit (Treat Antibiotics Responsibly, Guidance, Education, Tools) and its implementation

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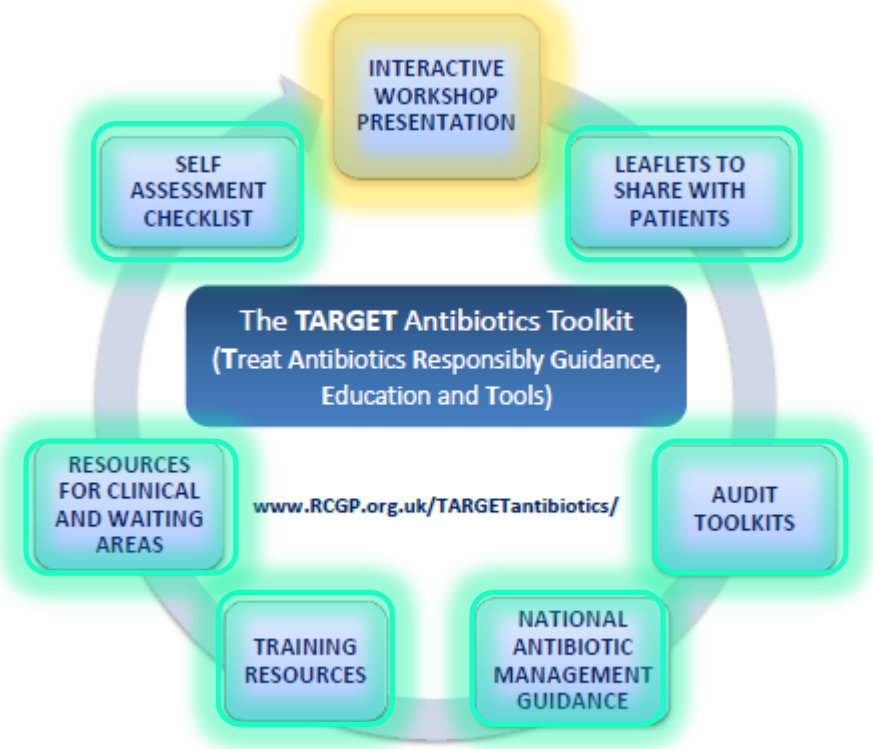
Background

What is the TARGET Antibiotics Toolkit?



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TARGET Antibiotics Toolkit

To access the Antibiotic Resistance in Primary Care elearning module, please go here.

What is TARGET?

TARGET stands for: Treat Antibiotics Responsibly, Guidance, Education, Tools

The TARGET Antibiotics Toolkit aims to help influence prescribers' and patients' personal attitudes, social norms and perceived barriers to optimal antibiotic prescribing. It includes a range of resources that can each be used to support prescribers' and patients' responsible antibiotic use, helping to fulfil CPD and revalidation requirements.

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Who is it for, and how can it be used?

The TARGET Antibiotics Toolkit is designed to be used by the whole primary care team within the GP practice or out of hours setting. These resources can be used flexibly, either as standalone materials or as part of an integrated package. We do recommend that ALL resources are used if this is feasible.

Using the resources in the TARGET Antibiotics Toolkit will enable primary care organisations to demonstrate compliance with the Health and Social Care Act 2008: Code of Practice on the prevention and control of infections and related guidance. The Toolkit also supports recommendations made in the recent NICE guideline: Antimicrobial stewardship: systems and processes for effective antimicrobial medicine use published August 2015 and is linked within the guideline.

The Toolkit includes:

- Background information about TARGET
- Resources for commissioners
- Leaflets to share with patients
- Audit Toolkits and action planning
- National Antibiotic Management Guidance
- Training resources
- Resources for clinical and waiting areas
- Self assessment checklist

Royal College of General Practitioners · BSAC The British Society for Antimicrobial Chemotherapy · NHS SCOTLAND · Royal College of Nursing · ROYAL PHARMACEUTICAL SOCIETY · ips Infection Prevention Society · BIAM British Infection Association

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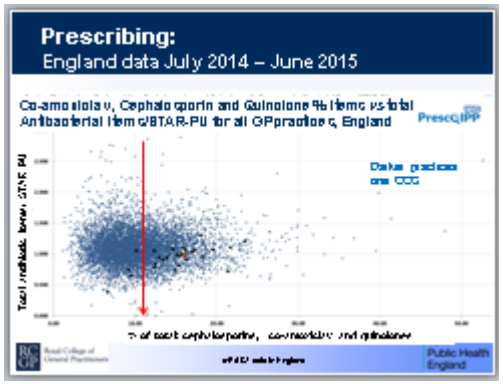
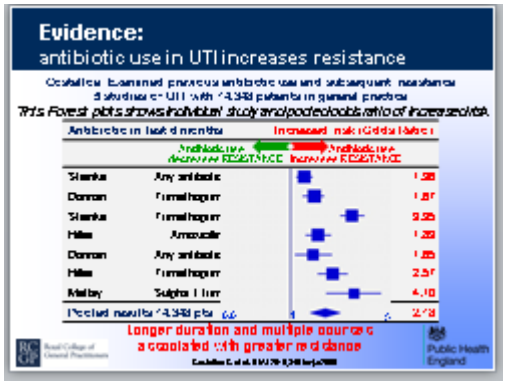
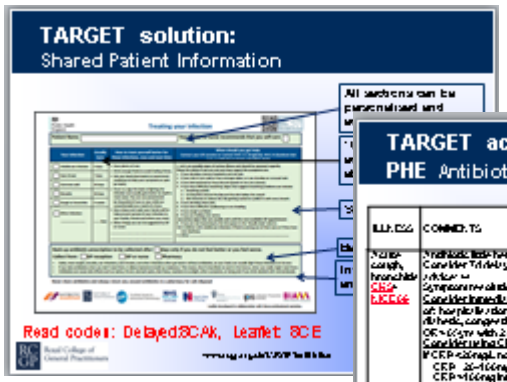
TARGET Antibiotics

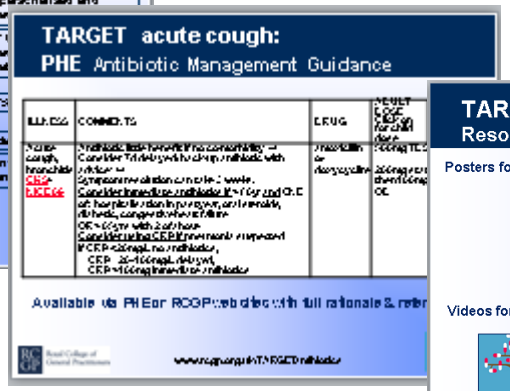
"There are few public health issues of potentially greater importance for society than antibiotic resistance"

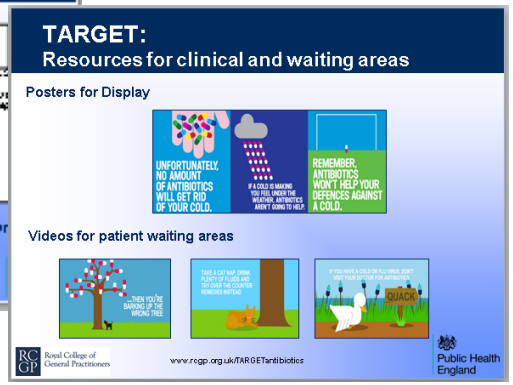
2013 CMO Prof Dame Sally Davies

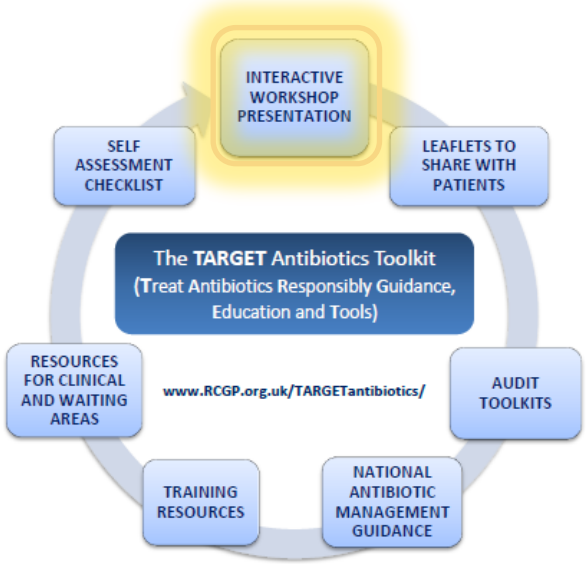


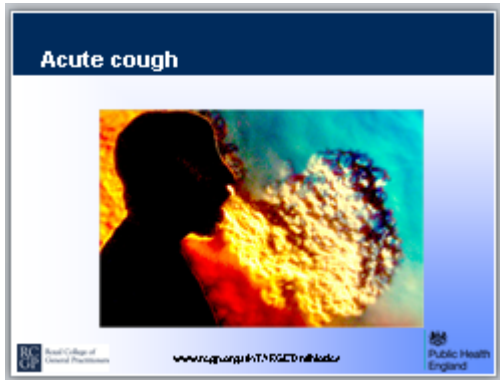












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Aims and objectives

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- To evaluate the TARGET workshop using an RCT design

- Does the addition of a face to face one hour TARGET workshop given by local providers result in more appropriate antibiotic prescriptions compared to controls with usual local AMS support?

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Methods

- Modified McNulty-Zelen design:
  - Practices did not know they were in a trial
  - Consent given by CCG AMS lead
  - Practices stratified by antibiotic use and randomised
  - Practices able to refuse any part of the intervention
  - Practices in the same building randomised together

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Methods

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152 practices from 4 CCGs in England	
77 intervention practices	**75 control practices**
40 accepted TARGET workshops	Received usual CCG support
37 declined	

TOTAL attending workshops = 318 GP staff
(166 GPs, 51 Nurses, 101 Other)

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Methods

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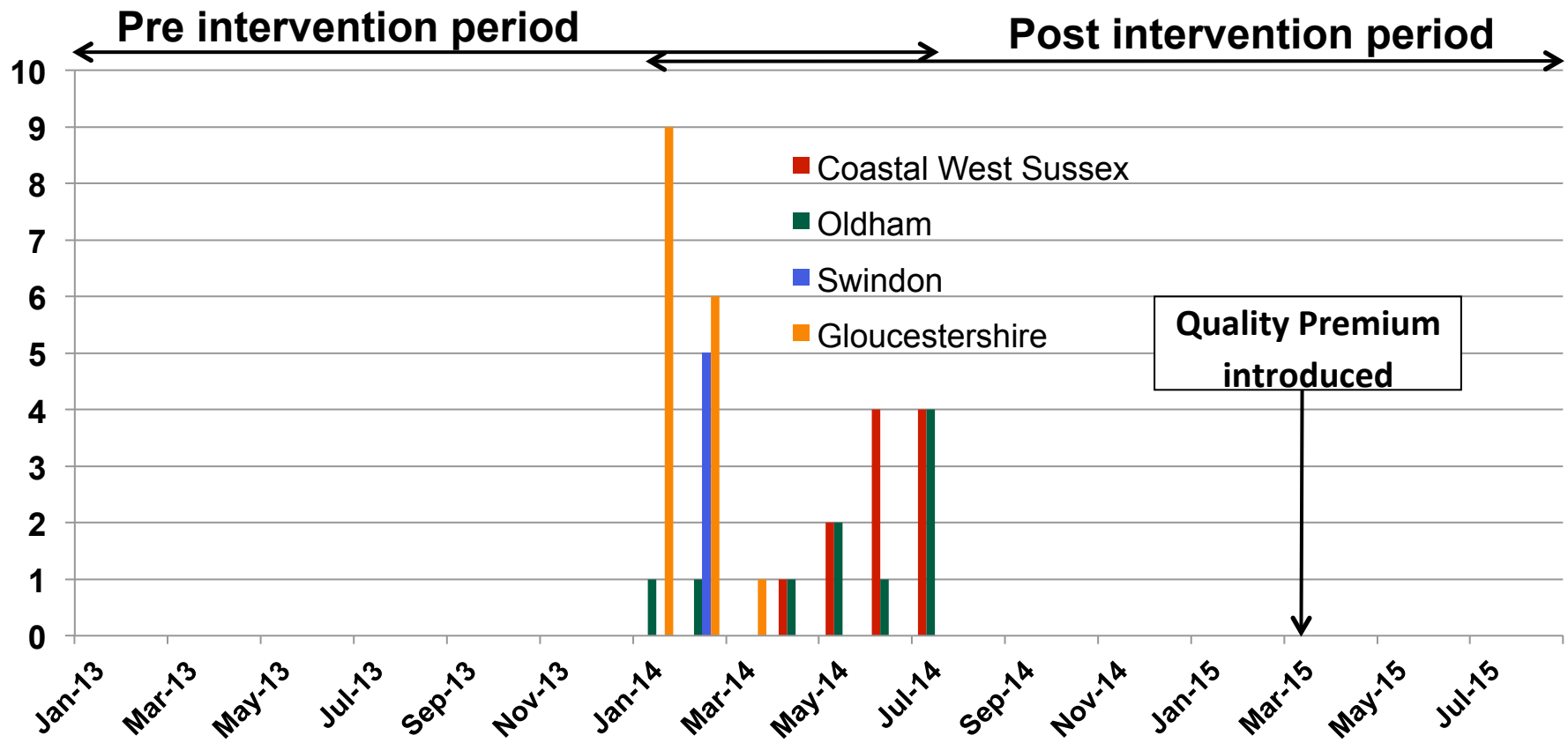
40 Workshop dates and data time frames



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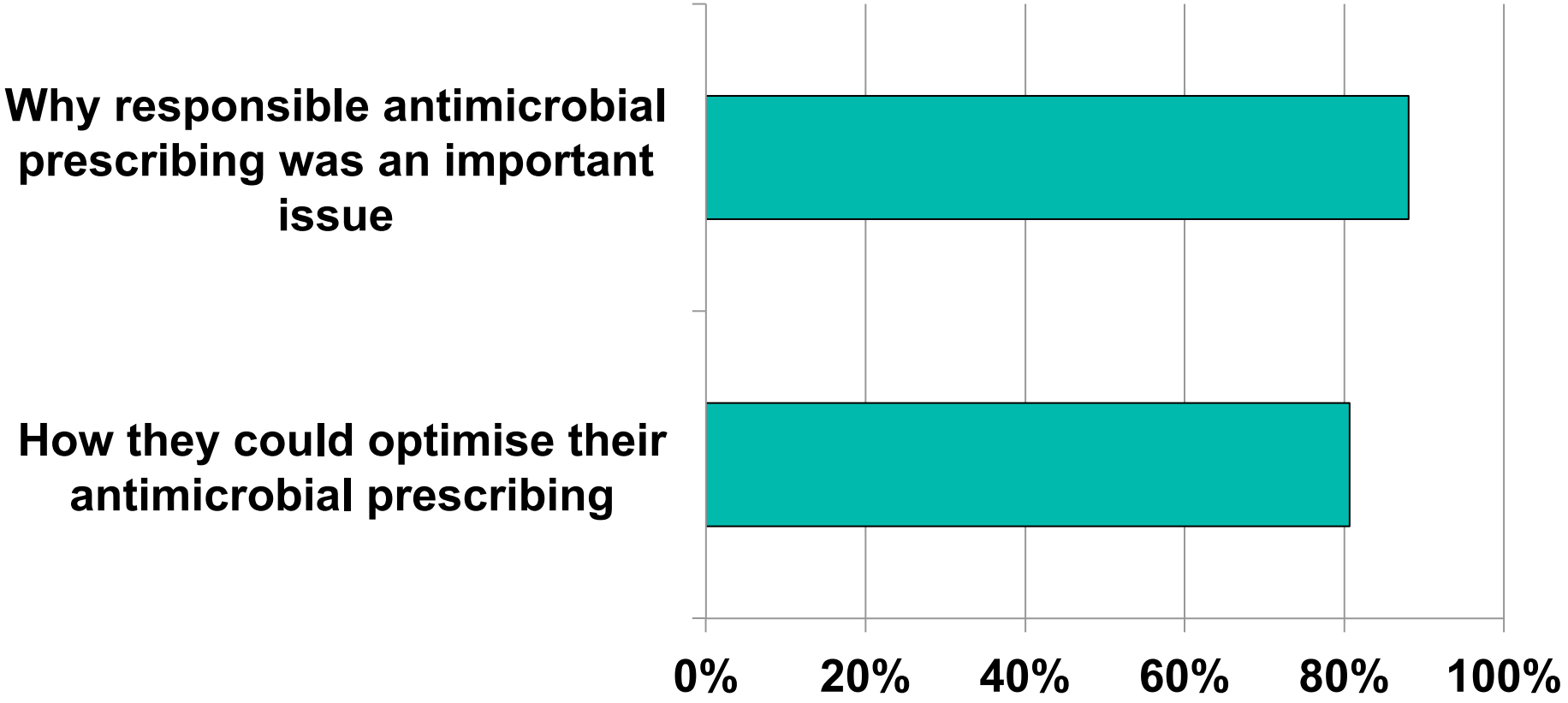
Workshop immediate feedback (N = 269)

The workshop helped them to understand:



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Antibiotic data analysis

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- Data from CIDSC IM&T department for 32 months January 2013 – July 2015
- **Outcome variable:** number of antibiotic or antibiotic group items prescribed each month in each GP practice
- **Factors included in model:** calendar month, GP prescribing rate pre 2013, GP list size, unplanned workshop, other interventions (QP/CMO letter post 04/15)

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Results

Estimated prescribing rate ratio (PRR) comparing all intervention practices compared to controls from Intention To Treat and CACE analyses.

	Analysis			
	Intention to treat		CACE (Complier-Average Causal Effect)	
	PRR (95% CI)	P	PRR (CI)	P
All antibacterials	0.973 (0.945 to 1.001)	0.06	0.939 (0.883 to 0.998)	0.04
Amoxicillin	0.956 (0.920 to 0.994)	0.02	0.924 (0.839 to 1.017)	0.11
Co-Amoxiclav	0.969 (0.891 to 1.054)	0.46	0.945 (0.778 to 1.148)	0.57
Trimethoprim	0.944 (0.898 to 0.993)	0.03	0.890 (0.805 to 0.984)	0.02
Nitrofurantoin	1.071 (0.997 to 1.150)	0.06	1.116 (0.964 to 1.293)	0.14
Pivmecillinam	1.611 (0.852 to 3.046)	0.14	model not converging	

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Results

Total antibacterial prescribing

CACE analysis indicated total antibacterials significantly decreased in intervention

	Analysis			
	Intention to treat		CACE (Complier-Average Causal Effect)	
	PRR (95% CI)	P	PRR (CI)	P
All antibacterials	0.973 (0.945 to 1.001) **2.7%**	**0.06**	0.939 (0.883 to 0.998) **6.1%**	**0.04**

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Results
Amoxicillin and Ampicillin

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Significant reduction in Amoxicillin/ampicillin in workshop group

	Analysis			
	Intention to treat		CACE (Complier-Average Causal Effect)	
	PRR (95% CI)	P	PRR (CI)	P
Amoxicillin	0.956 (0.920 to 0.994) **4.4%**	**0.02**	0.924 (0.839 to 1.017) **7.6%**	**0.11**

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Results Nitrofurantoin, Trimethoprim and Pivmecillinam

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Significant reduction in Trimethoprim for the workshop group

Non-significant increase in mecillinam and Nitrofurantoin in workshop group

	Analysis			
	Intention to treat		CACE (Complier-Average Causal Effect)	
	PRR (95% CI)	P	PRR (CI)	P
Trimethoprim	0.944 (0.898 to 0.993) **5.6%**	**0.03**	0.890 (0.805 to 0.984) **11%**	**0.02**
Nitrofurantoin	1.071 (0.997 to 1.150) **7.1%**	**0.06**	1.116 (0.964 to 1.293) **11.6%**	**0.14**
Pivmecillinam	1.611 (0.852 to 3.046) **61%**	**0.14**	model not converging	

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Results
Co-amoxiclav

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Non-significant decrease in Co-amoxiclav in workshop group

	Analysis			
	Intention to treat		CACE (Complier-Average Causal Effect)	
	PRR (95% CI)	P	PRR (CI)	P
Co-Amoxiclav	0.969 (0.891 to 1.054) **3.1%**	**0.46**	0.945 (0.778 to 1.148) **5.5%**	**0.57**

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Conclusions

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Workshops led to a significant:

- Decrease in amoxicillin and ampicillin
- Decrease in overall prescribing in the CACE analysis
- Decrease in trimethoprim

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Acknowledgements

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