

Discover the benefits of timely IVOS, and creating the momentum for improvement

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IV antibiotics – the context



At any point in time, 22% of NHS hospital inpatients are being treated with intravenous antibiotics [ESPAUR report 2017].

18 million days of treatment with intravenous antibiotics are dispensed in English hospitals each year [Rx-info Define FY2021-22].

Up to 30% of these days may be unnecessary [*Dutey-Magni 2021; PMID: [34223095](#)*].



The benefits of timely IV to Oral Switch

Draft – final version coming soon...



Benefits for patient safety and experience

- 1 **Timely IVOS is associated with reduced probability of errors**
- 2 **Timely IVOS reduced adverse events by over 10%**
- 3 **Timely IVOS can reduce HCAI, including hospital-acquired bacteraemia, and antibiotic-associated diarrhoea**
- 4 **75% of patients preferred the oral route for antibiotics**

Error management
Where errors occur in the preparation and administration of intravenous medicines: a systematic review and Bayesian analysis
Sarah E McDowell¹, Shahrul Mt-Isa², Deborah Ashby², R E Ferner¹
Correspondence to Professor RE Ferner, West Midlands Centre for Adverse Drug Reactions, City Hospital, Birmingham B18 7QH, UK; r.ferner@bham.ac.uk

ORIGINAL INVESTIGATION
Effect of a 3-Step Critical Pathway to Reduce Duration of Intravenous Antibiotic Therapy and Length of Stay in Community-Acquired Pneumonia
A Randomized Controlled Trial
Jordi Carratalà, MD; Carolina García-Vidal, MD; Lucía Ortega, MD; Nuria Fernández-Sabé, MD; Mercedes Clemente, MD; Guisela Albero, MSc; María López, MD; Xavier Castellsagué, MD; Jordi Dorca, MD; Ricard Verduguer, MD; Joaquín Martínez-Montañá, MD; Frederic Manresa, MD; Francesc Gudiol, MD

J Hosp Infect. 1999 Jun;42(2):133-41. doi: 10.1053/jhin.1996.0543.
Analysis of risk factors associated with nosocomial bacteraemias
D Rojo¹, A Pinedo, E Clavijo, A García-Rodríguez, V García
Affiliations + expand
PMID: 10336623 DOI: 10.1053/jhin.1996.0543

Review | Mayo Clin Proc. 2006 Sep;81(9):1159-71. doi: 10.4065/81.9.1159.
The risk of bloodstream infection in adults with different intravascular devices: a systematic review of 200 published prospective studies
Dennis G Maki¹, Daniel M Kluger, Christopher J Crnich
Affiliations + expand
PMID: 16932000 DOI: 10.1093/cid/cir001

Injury. 2011 Dec;42 Suppl 3:324-7. doi: 10.1016/S0020-1383(11)0129-2.
Patients' views and experience of intravenous and oral antimicrobial therapy: room for change
K B Bamford¹, M Desai, M J Aruede, W Lawson, A Jacklin, B Dean Franklin
Affiliations + expand
PMID: 22196906 DOI: 10.1016/S0020-1383(11)0129-2

Benefits for the healthcare system

Randomized Controlled Trial > Arch Intern Med. 2012 Jun 25;172(12):922-8. doi: 10.1001/archinternmed.2012.1690.

Effect of a 3-step critical pathway to reduce duration of intravenous antibiotic therapy and length of stay in community-acquired pneumonia: a randomized controlled trial

Jordi Carratalá¹, Carolina García-Vidal, Lucía Ortega, Nària Fernández-Sabé, Mercedes Clemente, Ginesa Albero, Marta López, Xavier Castellsagué, Jordi Dorca, Ricard Verdagués, Joanau Martínez-Montauti, Frederic Manresa, Francesc Guífol

Critical Care December 2003 Vol 7 No 6 van Zanten et al.

Research **Importance of nondrug costs of intravenous antibiotic therapy** Arthur RH van Zanten¹, Peter M Engelriet², Karin van Dillen³, Miriam van Veen³, Mark JC Nuijten⁴ and Kees H Philderman⁵ **Open Access**

Journal of Antimicrobial Chemotherapy (2009) 64, 188–199 doi:10.1093/jac/dkp131 Advance Access publication 28 April 2009

Outcomes of early switching from intravenous to oral antibiotics on medical wards

Dominik Mertz¹, Michael Koller², Patricia Haller¹, Markus L. Lampert^{3,4}, Herbert Plagge⁵, Fabian Roth⁶, Christian K. Mann⁷, Michael Pöschel⁸, Frank P. Oeschle⁹ and Stefan Pöschel¹⁰

JAC

University Hospitals Birmingham

Jabs to Tabs: A Time and Motion Study Investigating Medicines Administration

Abi Jenkins, Djaverah Anshur, Emily Postins, Nushofarin Sadi, Nirley Agreval University Hospitals of Birmingham, Queen Elizabeth Hospital

Early switching of antibiotic therapy from intravenous to oral using a combination of education, pocket-sized cards and switch advice: A practical intervention resulting in reduced length of hospital stay

A M A Mouwen¹, J A Dijkstra¹, E Jong², P C A M Buijts³, P C M Pasker-de Jong⁴

Epub 2019 Jul 27.

Clinical Trial > Infect Control Hosp Epidemiol. 1992 Jan;13(1):21-32. doi: 10.1086/646419.

Intervention to discontinue parenteral antimicrobial therapy in patients hospitalized with pulmonary infections: effect on shortening patient stay

N J Ehrenkrantz¹, D E Nerenberg, J M Shultz, K C Slater

Contents lists available at ScienceDirect

American Journal of Infection Control

journal homepage: www.ajicjournal.org

Journal of Antimicrobial Chemotherapy

Effectiveness of antimicrobial stewardship interventions on early switch from intravenous-to-oral antimicrobials in hospitalized adults: systematic review

Garwan PharmD^{1,2*}, Muath A. Alsalloum PharmD³, Abrar K. Thabit PharmD, BCIDP³

5 Opportunity for up to 10% reduction in exposure to broad-spectrum intravenous antimicrobials

6 Timely IVOS can free up nursing time to care

7 Timely IVOS intervention can reduce hospital length-of-stay

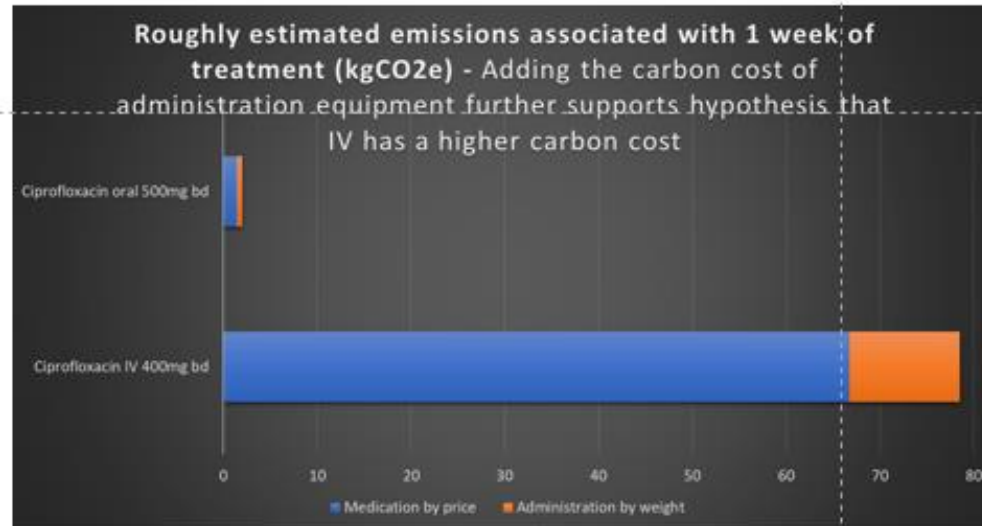
8 10% reduction in use of intravenous doses (replaced by oral doses) would save over £10 million for the NHS per year

Benefits for the planet

9

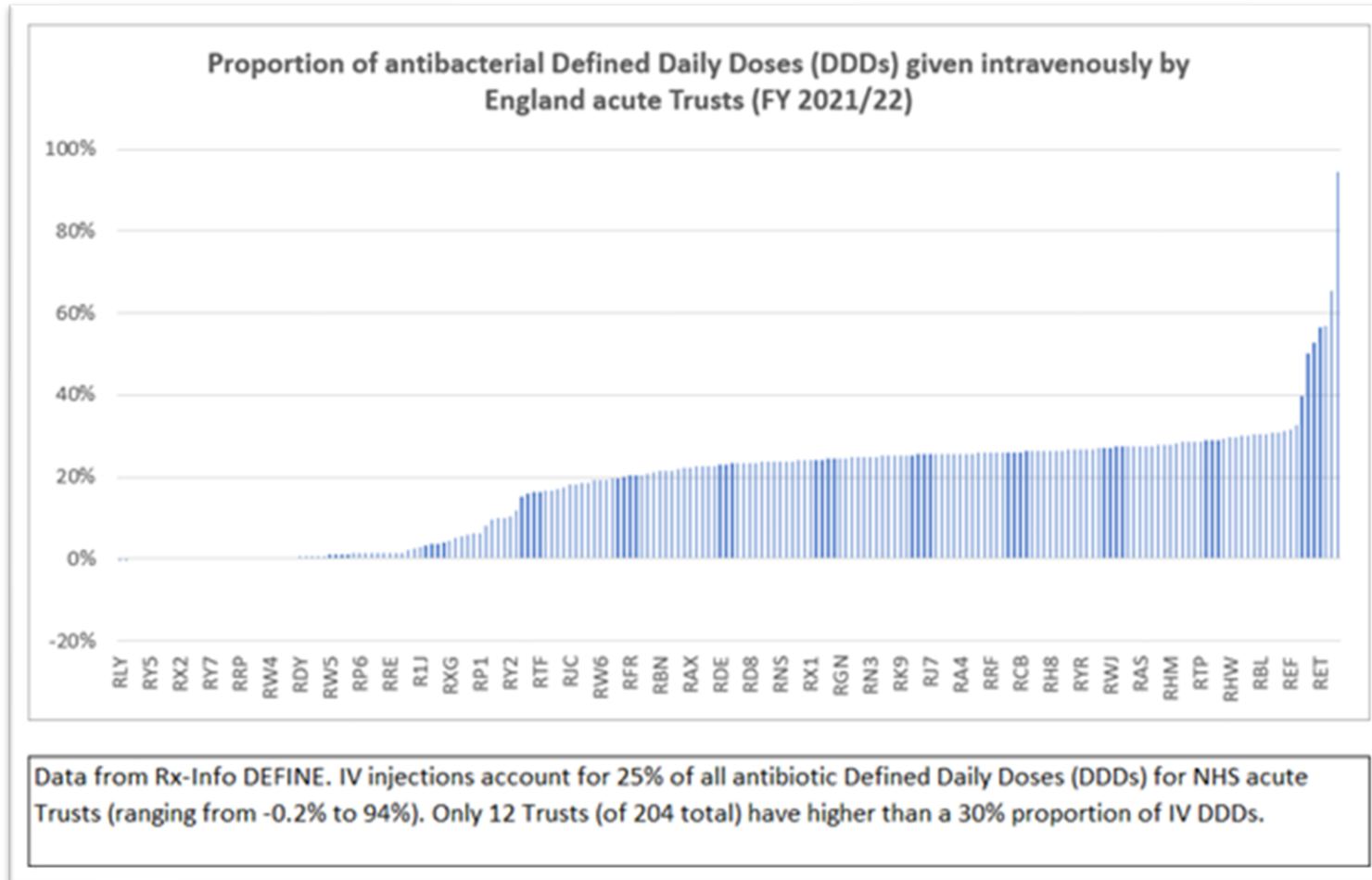
Oral antibiotics have a lower carbon footprint

- Ciprofloxacin 500mg oral 12-hourly for 7 days \approx 1kg CO₂
- Ciprofloxacin 400mg IV 12-hourly for 7 days \approx **67kg** CO₂

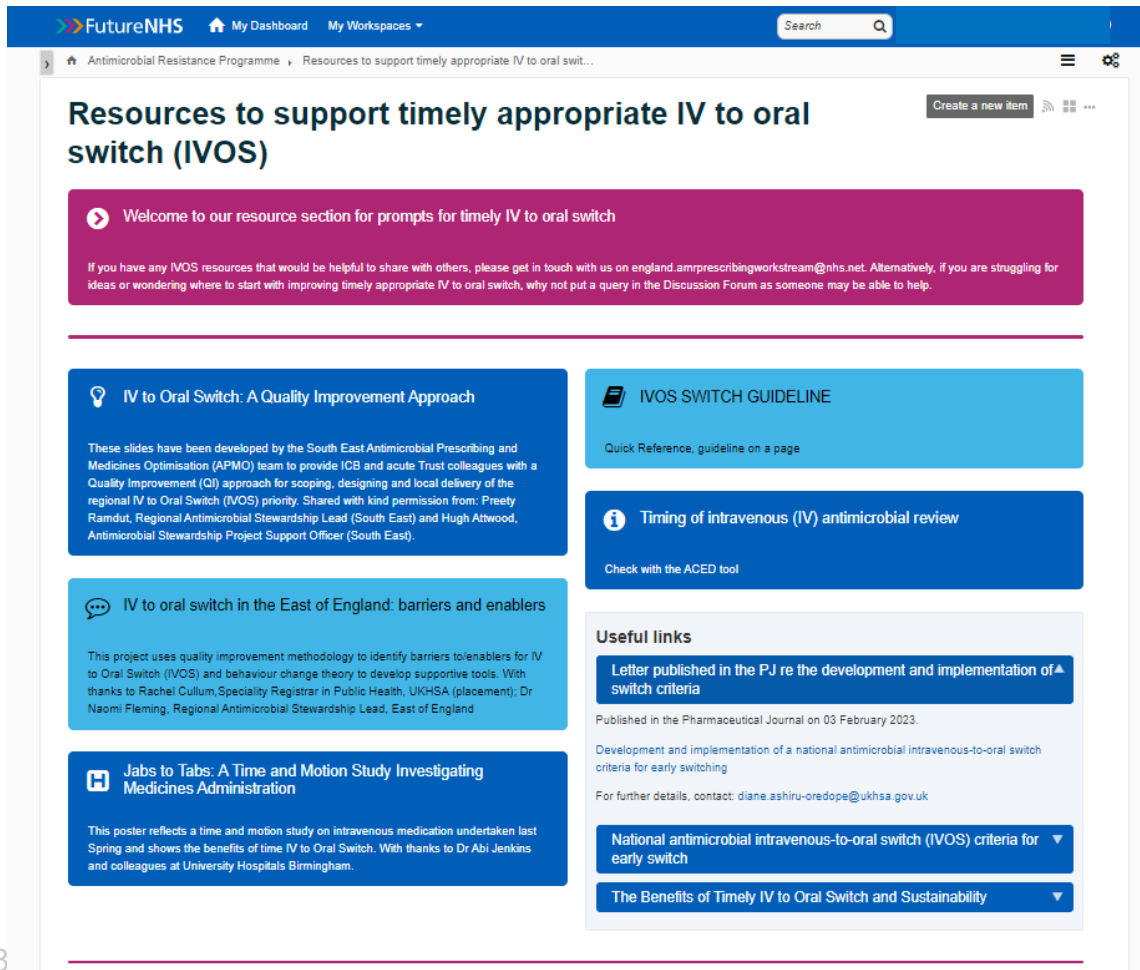


Walpole S, FIS conference 2021 Abstract 186

Scope for improvement



Creating timely IVOS improvement together



FutureNHS My Dashboard My Workspaces Search

Antimicrobial Resistance Programme Resources to support timely appropriate IV to oral switch...

Resources to support timely appropriate IV to oral switch (IVOS)

Create a new item

Welcome to our resource section for prompts for timely IV to oral switch

If you have any IVOS resources that would be helpful to share with others, please get in touch with us on england.amrprescribingworkstream@nhs.net. Alternatively, if you are struggling for ideas or wondering where to start with improving timely appropriate IV to oral switch, why not put a query in the Discussion Forum as someone may be able to help.

IV to Oral Switch: A Quality Improvement Approach

These slides have been developed by the South East Antimicrobial Prescribing and Medicines Optimisation (APMO) team to provide ICB and acute Trust colleagues with a Quality Improvement (QI) approach for scoping, designing and local delivery of the regional IV to Oral Switch (IVOS) priority. Shared with kind permission from: Preety Ramdutt, Regional Antimicrobial Stewardship Lead (South East) and Hugh Attwood, Antimicrobial Stewardship Project Support Officer (South East).

IV to oral switch in the East of England: barriers and enablers

This project uses quality improvement methodology to identify barriers to/enablers for IV to Oral Switch (IVOS) and behaviour change theory to develop supportive tools. With thanks to Rachel Cullum, Speciality Registrar in Public Health, UKHSA (placement); Dr Naomi Fleming, Regional Antimicrobial Stewardship Lead, East of England

Jabs to Tabs: A Time and Motion Study Investigating Medicines Administration

This poster reflects a time and motion study on intravenous medication undertaken last Spring and shows the benefits of time IV to Oral Switch. With thanks to Dr Abi Jenkins and colleagues at University Hospitals Birmingham.

IVOS SWITCH GUIDELINE

Quick Reference, guideline on a page

Timing of intravenous (IV) antimicrobial review

Check with the ACED tool

Useful links

Letter published in the PJ re the development and implementation of switch criteria

Published in the Pharmaceutical Journal on 03 February 2023.

Development and implementation of a national antimicrobial intravenous-to-oral switch criteria for early switching

For further details, contact: diane.ashiru-oredope@ukhsa.gov.uk

National antimicrobial intravenous-to-oral switch (IVOS) criteria for early switch

The Benefits of Timely IV to Oral Switch and Sustainability

Access resources

Sign up to the AMR Programme [FutureNHS workspace](#)

Share good practice and resources

Email
england.amrprescribingworkstream@nhs.net