

Evaluation of the effectiveness of carbapenem and piperacillin-tazobactam prescribing guidelines within NHS Scotland

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Agenda

- Background
- Survey – methodology, results
- NAS-PPS – methodology, key results
- Future developments

Requirement for the project

- Increasing use of carbapenems and piperacillin-tazobactam
- Increasing development of resistant infections
- 2013 SAPG Multi-Drug Resistant Gram Negative(MDRGNB) Guidelines
- Lack of intelligence on carbapenem/piperacillin-tazobactam best practice

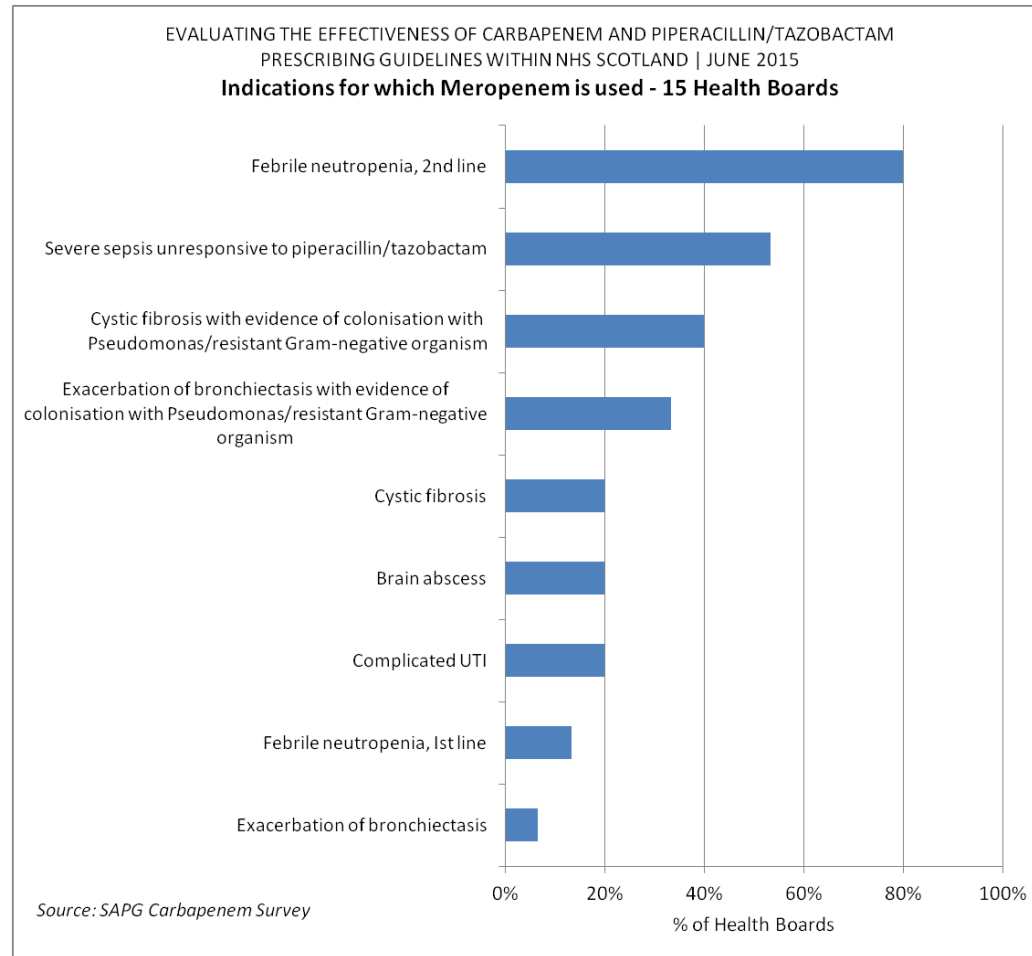
Quality Improvement Approach

- Survey of implementation of prescribing guidance in boards
- Point Prevalence Survey (PPS) of carbapenem and piperacillin-tazobactam use in Scottish acute hospitals
- Case studies to investigate best practise in use of these agents

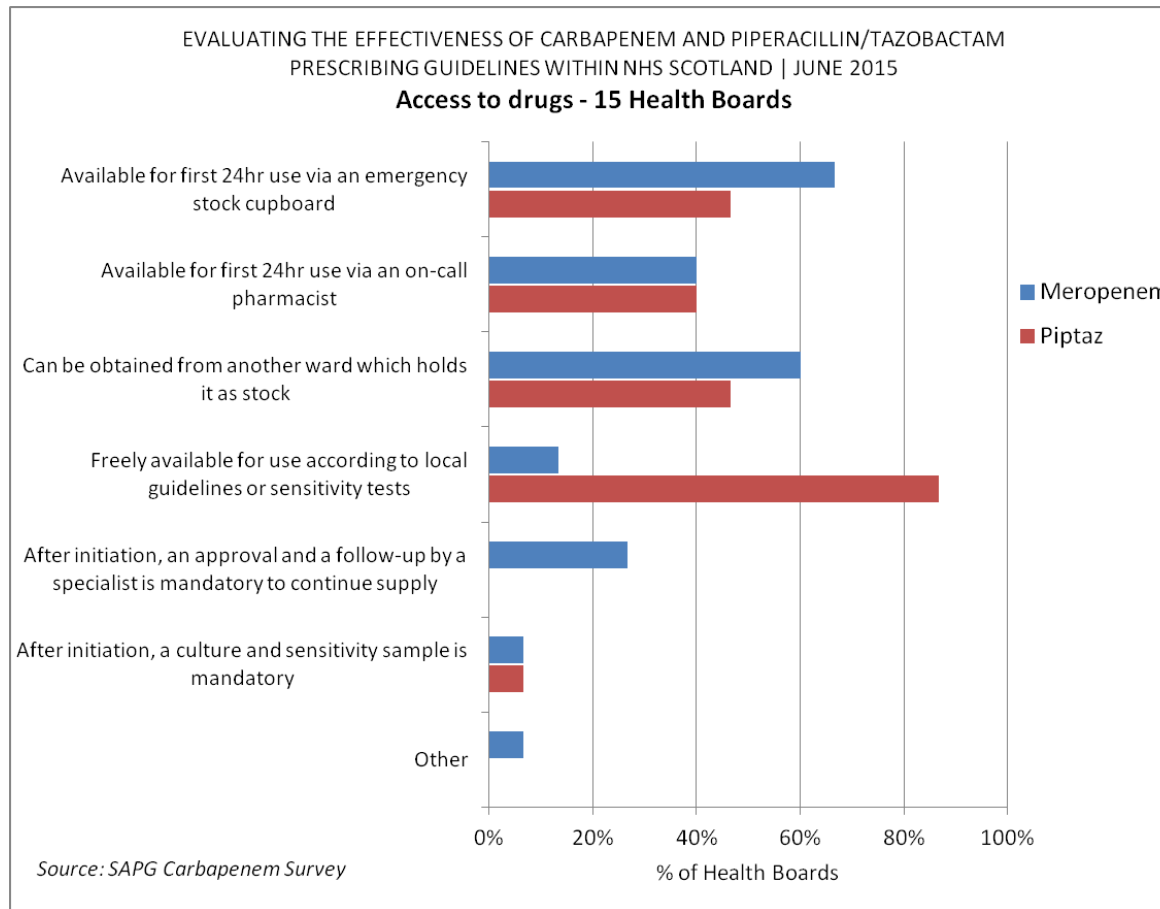
Survey of boards

- Survey monkey on-line tool developed
- Completed by up to 15 boards
- Key questions identified by SAPG Steering Group

Indications for meropenem use

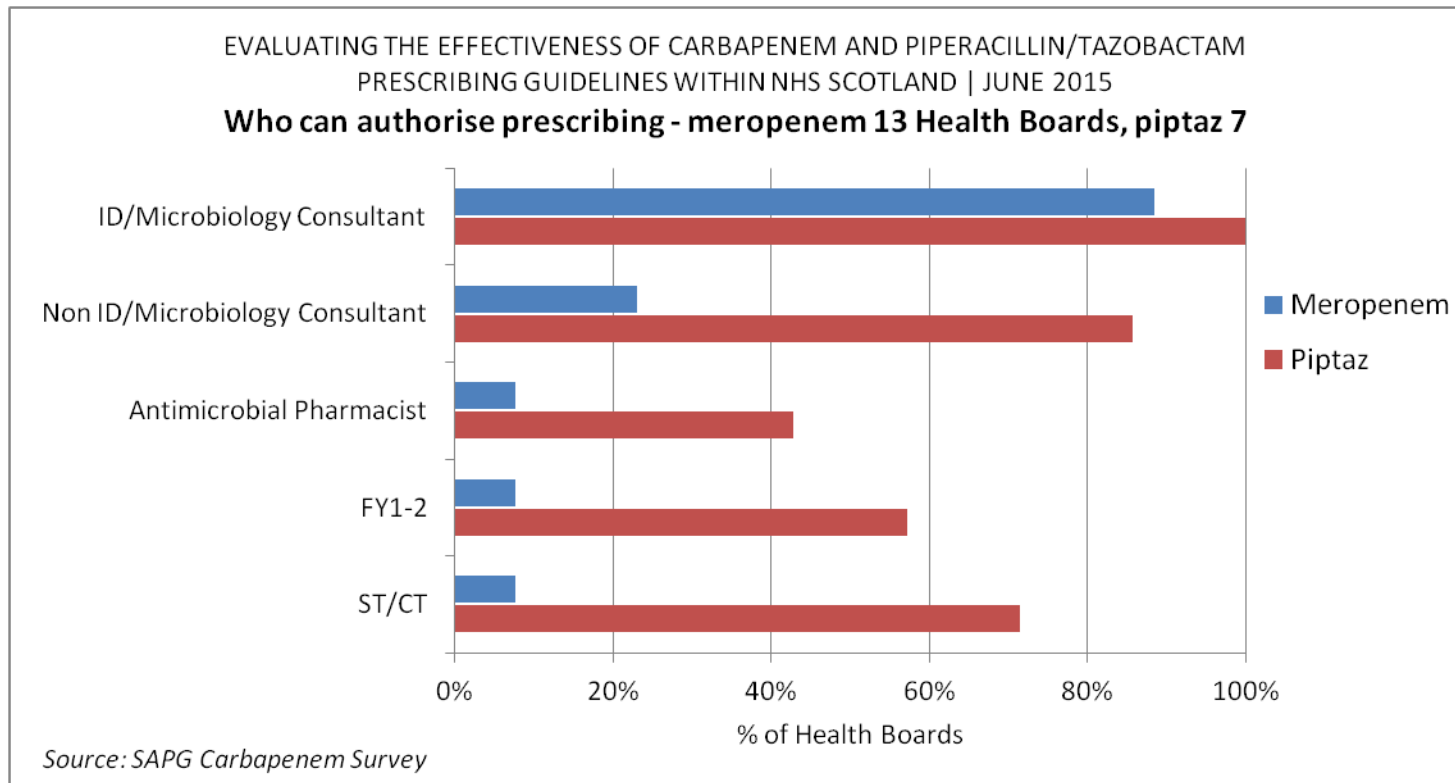


Access to meropenem and piptaz

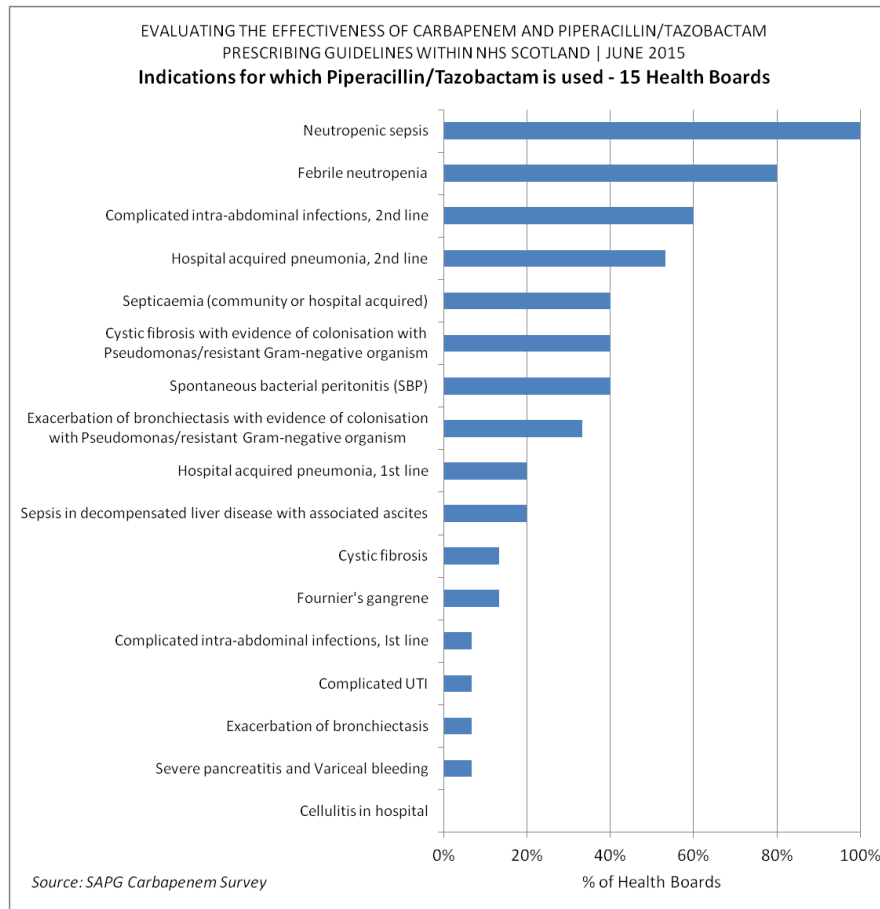


Survey key results

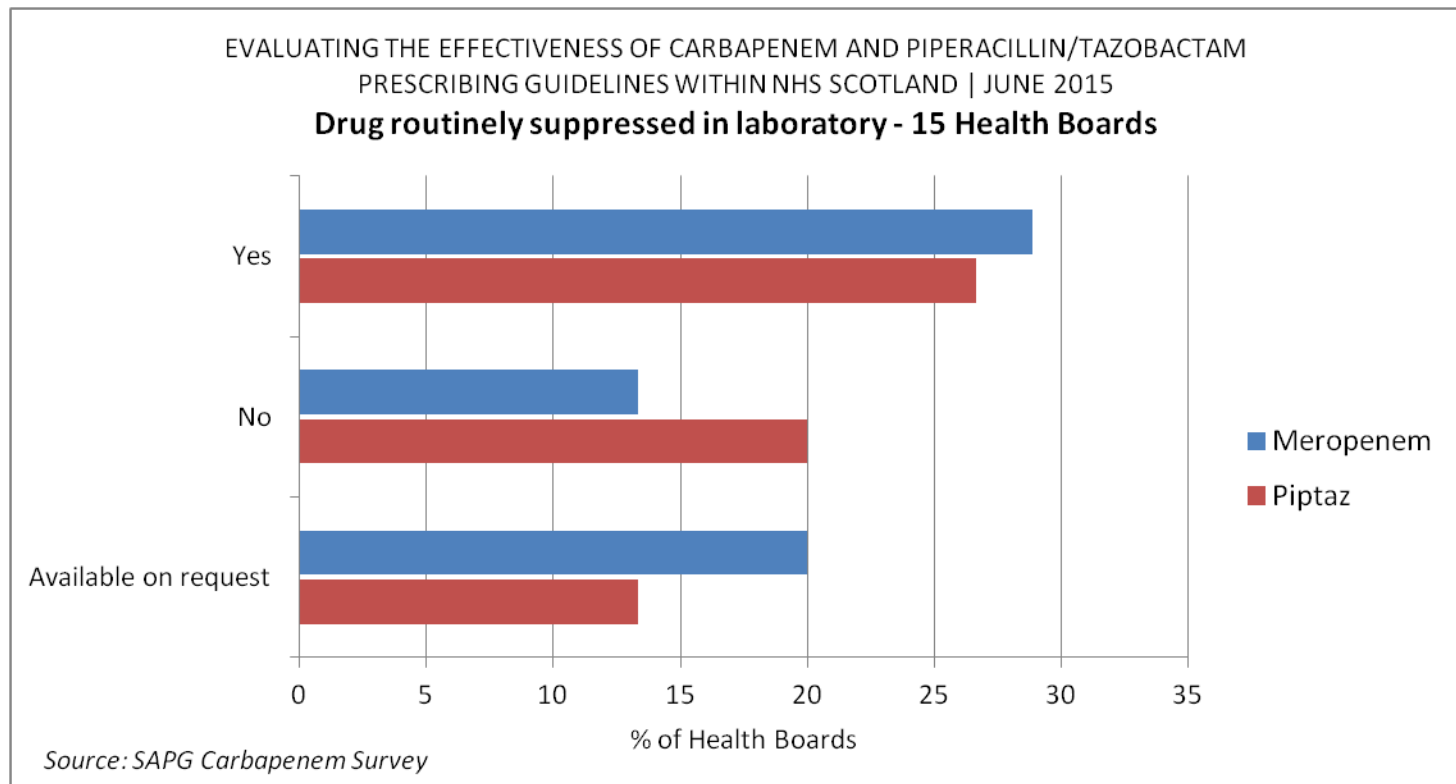
Authorisation of prescribing of meropenem and piptaz



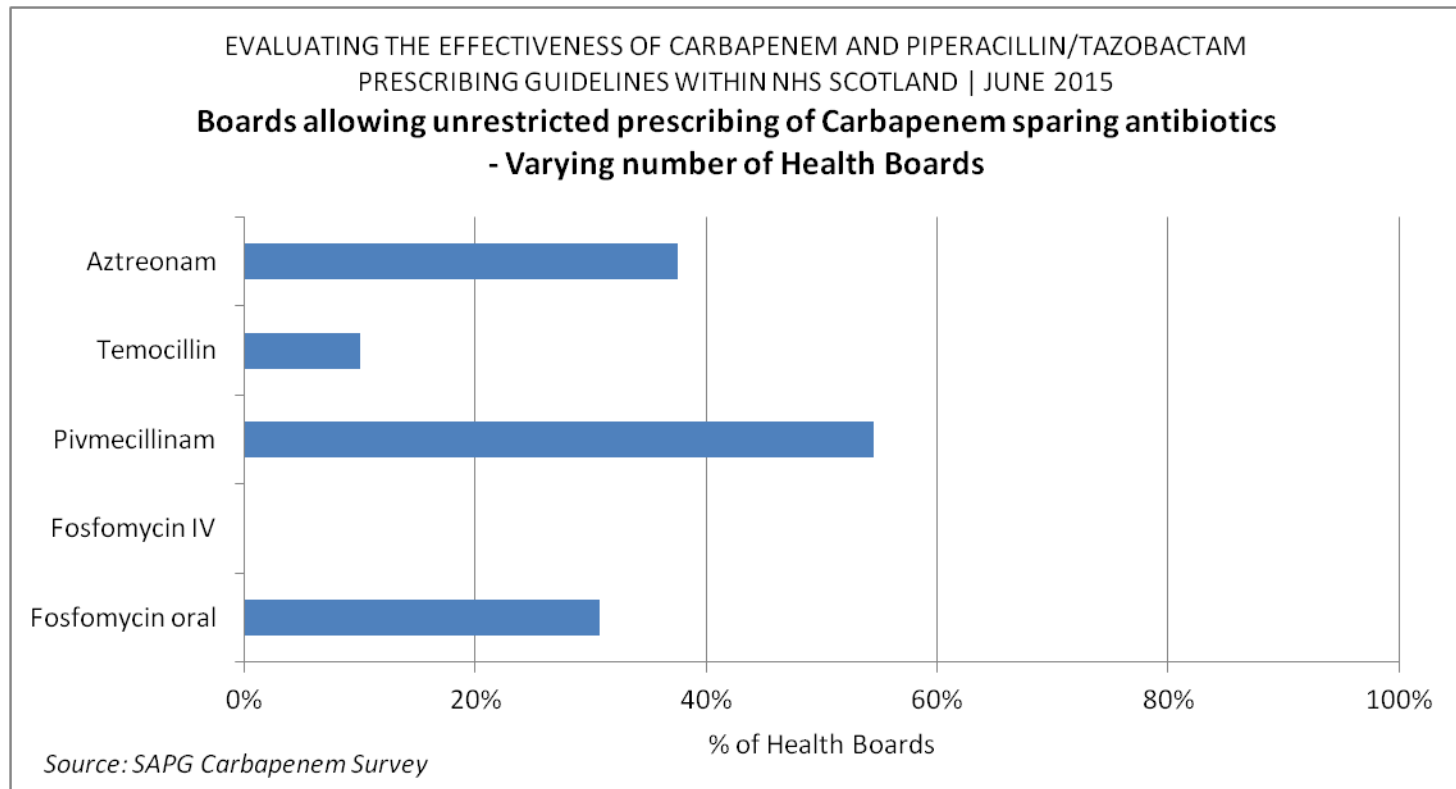
Indications for piptaz use



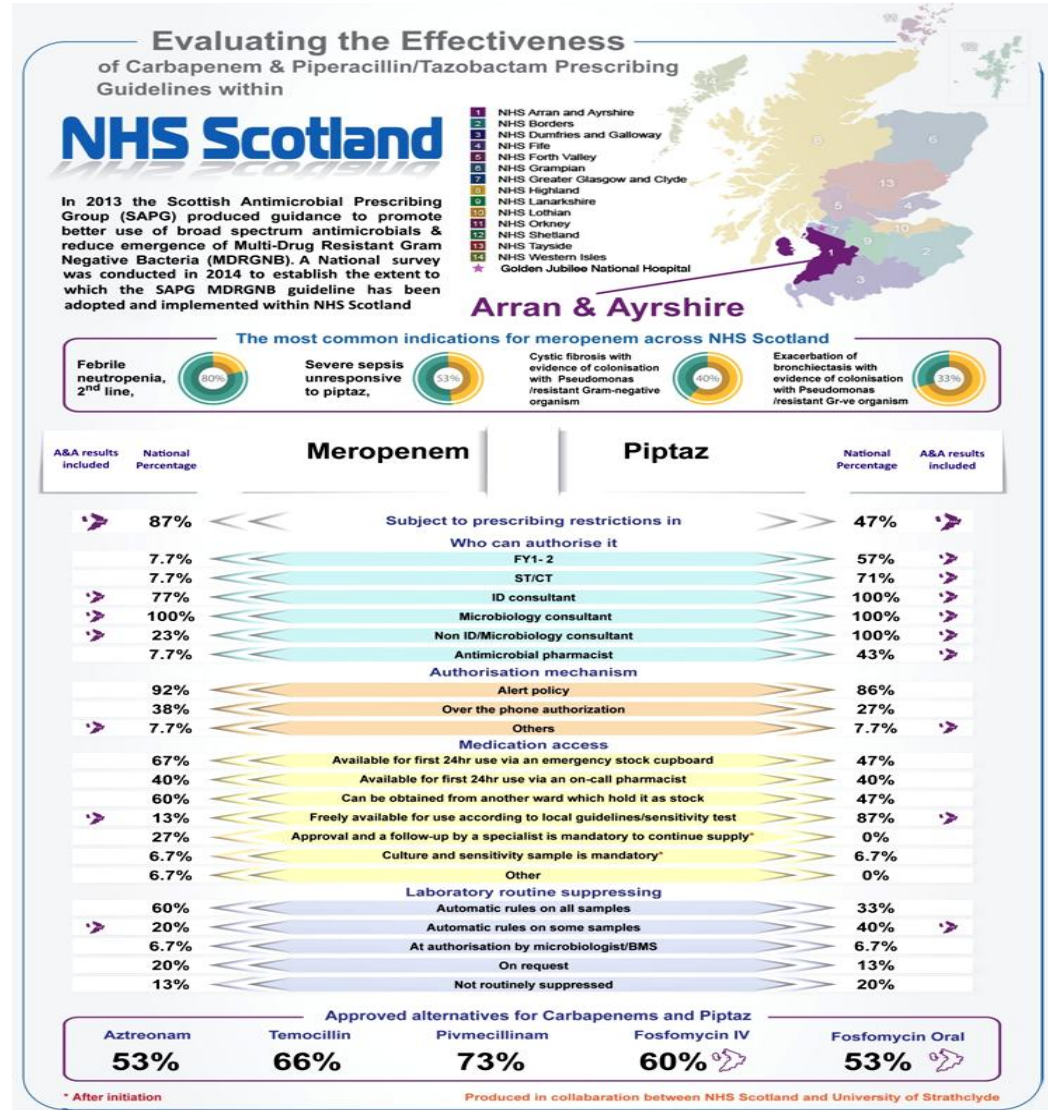
Routine suppression of meropenem and piptaz in the laboratory



Use of carbapenem-sparing antibiotics



Survey Key Results



Survey Key Results Summary

- Prescribing restrictions – for Meropenem, less for Piptaz
- Authorisation restricted to micro/ID for Meropenem but junior clinicians also authorise Piptaz
- Supplies freely available for Piptaz, not for Meropenem
- Low level of laboratory result suppression
- Small range of Carbapenem-sparing antibiotics available

BSAC National Antimicrobial Stewardship Point Prevalence System (NAS-PPS)

Process: Sept-Oct 2015

1. Set up

National
Trust / Health Board
Hospital
Wards

2. Data Entry

Ward
Hospital

3. Submit

Trust / Health Board

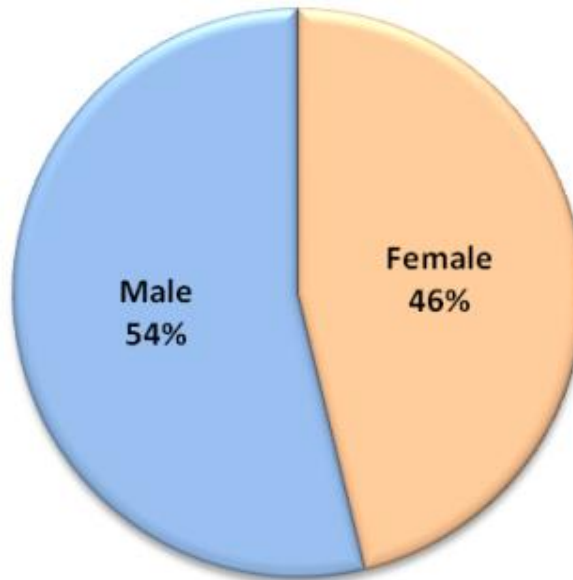
4. Review

Locally/Regionally
/Nationally

National results for all boards: Patients' gender and age

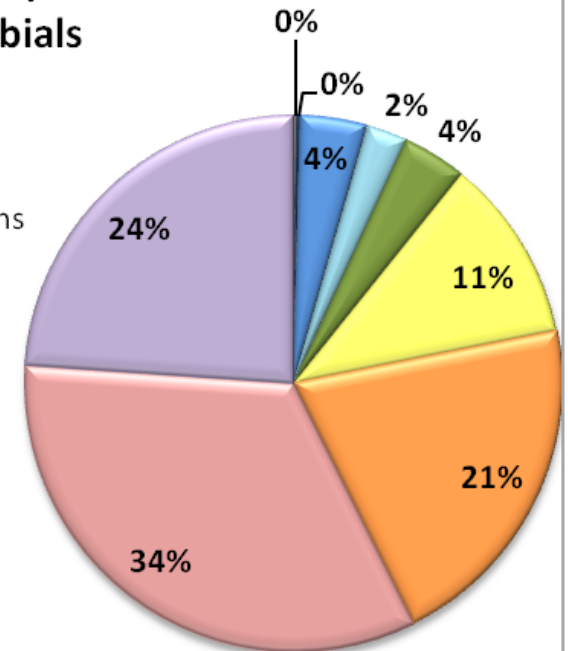
Slightly more men on antimicrobials majority of patients were 65-79 years old.

Gender of 974 patients on antimicrobials



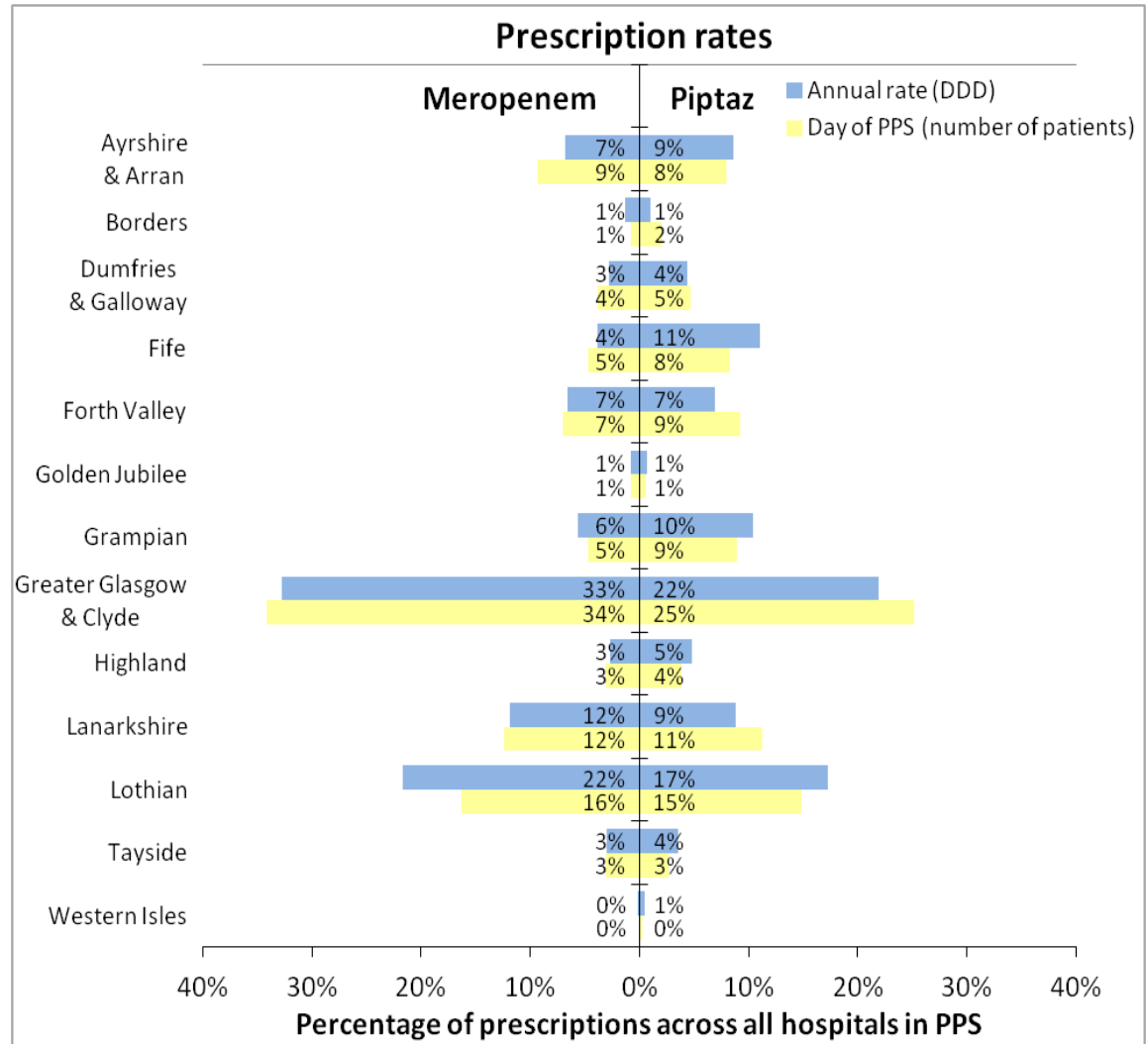
Age of 974 patients on antimicrobials

- Invalid
- < 1 month
- 1-23 months
- 2-15
- 16-29
- 30-49
- 50-64
- 65-79
- > 80



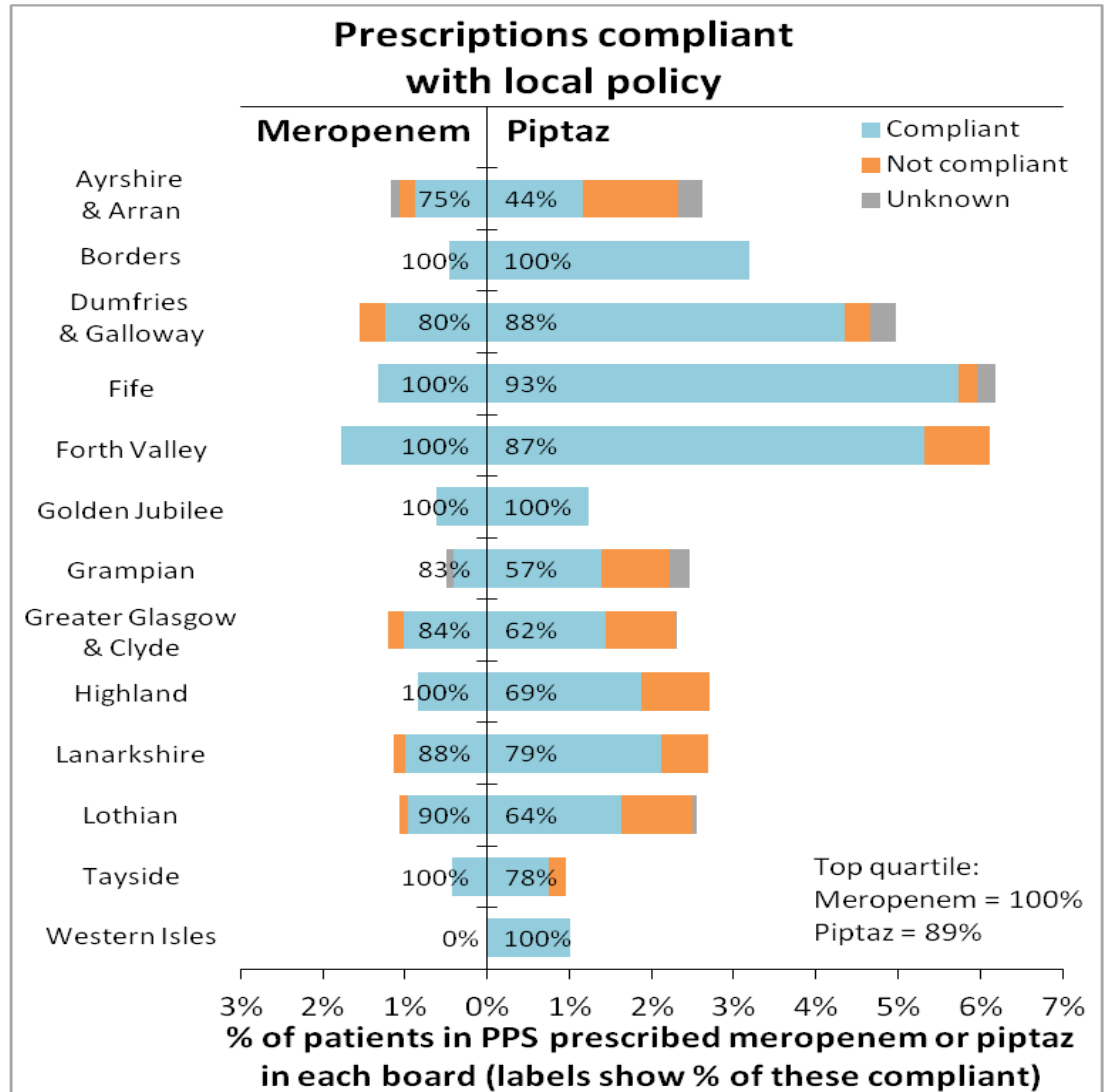
Prescription Rates

Prescription rates on the day of the PPS were similar to annual rates, therefore the PPS was a typical day



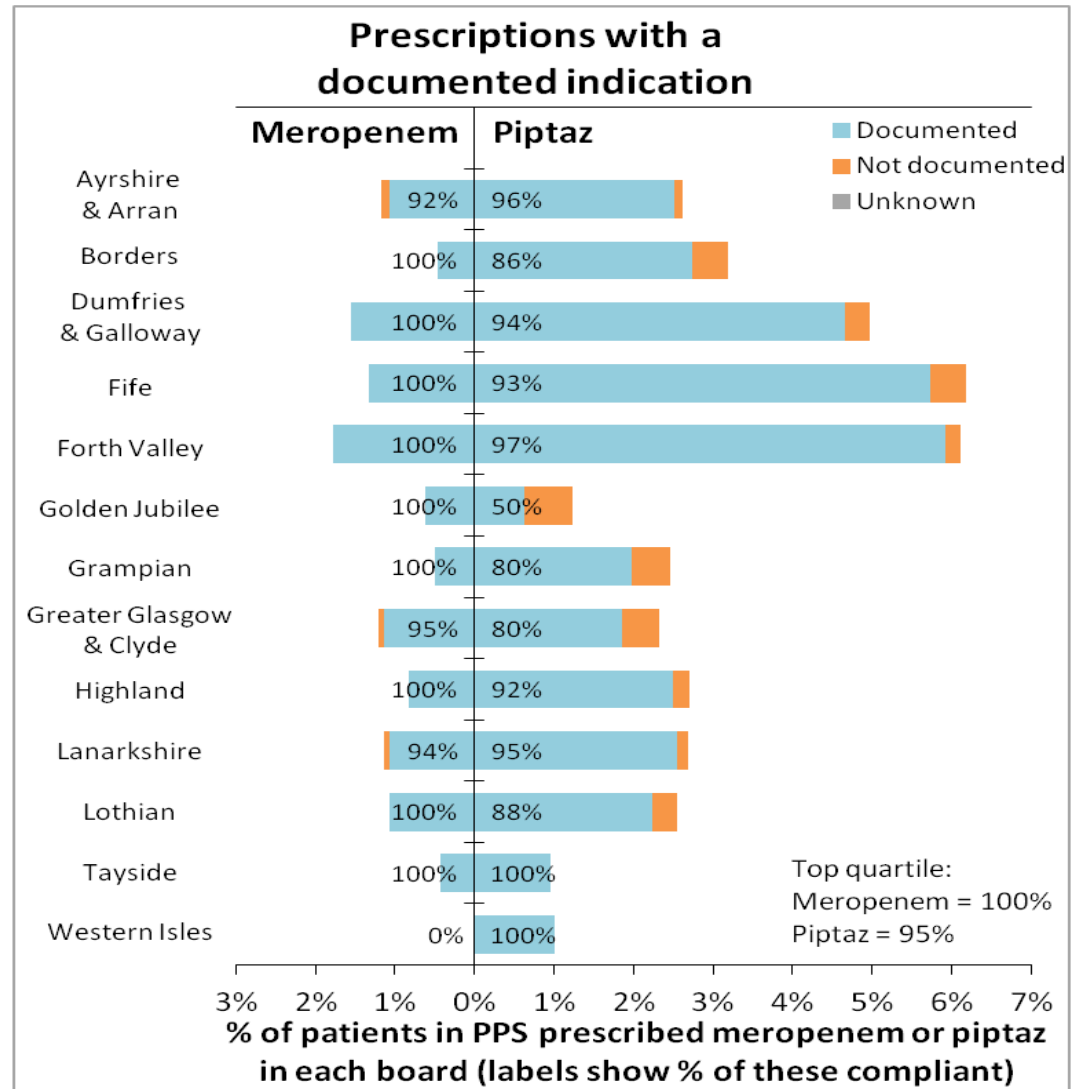
Compliance With Antibiotic Policy

Compliance high for meropenem,
lower for piperacillin-tazobactam



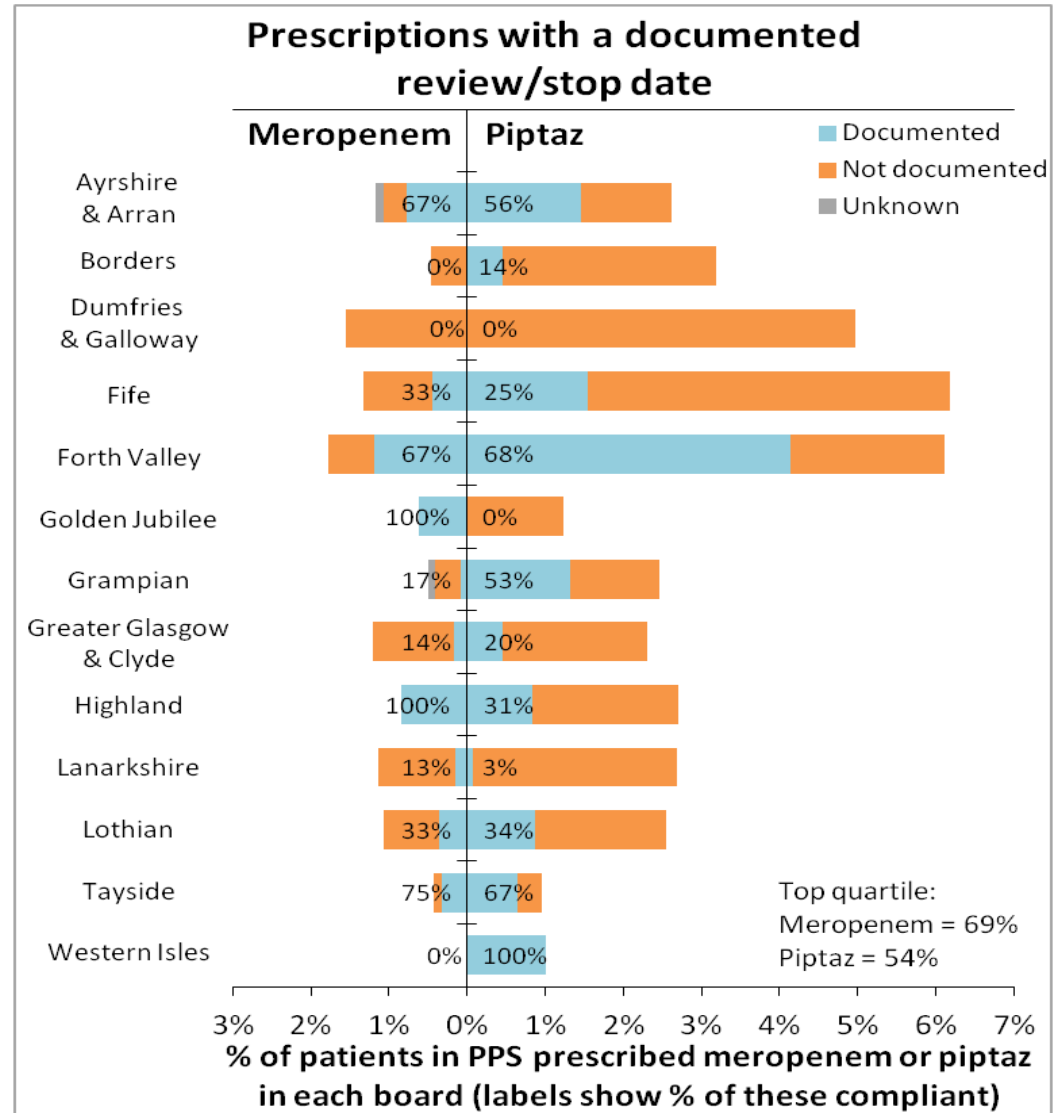
Documentation Of Indication

High level of documentation of Indication for meropenem, slightly lower level for piperacillin-tazobactam



Documentation Of Review/Stop Date

Review/stop dates poorly documented in most boards for both meropenem and piperacillin-tazobactam



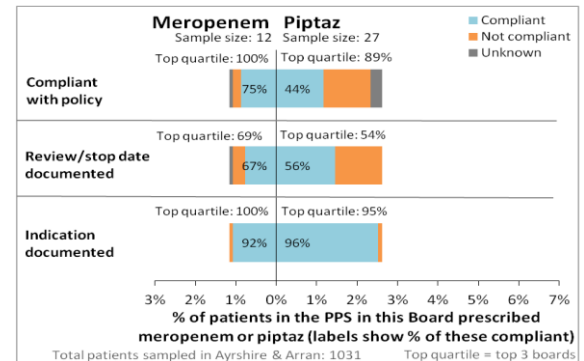
Individual Board Results

Point Prevalence Survey Results: Ayrshire and Arran

Performance

This graph shows the Board's performance in relation to the top quartile of Boards (the 3 Boards with the highest percentage).

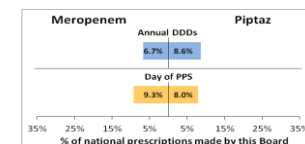
- **Compliance with policy** in this Board was low for meropenem and even lower for piptaz. Both were well below the top quartile of Boards.
- **Review/stop dates** were poorly documented for both meropenem and piptaz. This was the case in most Boards so this Board's performance was around the top quartile for both.
- **Indication** was well documented in this Board, with meropenem just below the top quartile (100% achieved in 9 boards), and slightly above the top quartile for piptaz.



- **General:** a good number of patients were sampled in this Board and the percentage prescribed meropenem and piptaz is around the middle of the range across Boards. There is room for improvement in most measures.

Prescription rates

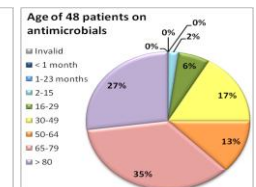
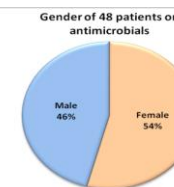
		Meropenem	Piptaz
Annual prescription rate (DDDs)	National	84,053	138,064
	This board	5,671	11,912
Patients in PPS on meropenem/piptaz	National	129	337
	This board	12	27



- Prescription rates in this Board as a percentage of the national total are shown in the graph above.
- In most Boards, prescription rates on the day of the PPS (measured in numbers of patients) were similar to annual rates (measured in defined daily doses (DDD)), indicating that the PPS was a typical day.
- In this Board, there was slightly more prescribing of meropenem on the day of the PPS than usual.

Demographics

Hospitals included	Patients sampled	Patients on antimicrobials
Ayrshire Central Hospital	68	1
Biggart Hospital	131	2
Crosshouse District General Hospital	514	32
University Hospital Ayr	318	13
Total numbers	1031	48



Conclusions – Meropenem:

- Meropenem is subject to prescribing restrictions in most boards and compliance with antibiotic policies is high – Alert Antibiotic Policies
- Indication for use is well documented but review/stop dates were poorly documented
- Access mechanisms are in place in most boards and 60% boards use automatic suppression of lab reporting
- Low use of carbapenem sparing agents in boards

Conclusions: Piperacillin-tazobactam

- Piperacillin-tazobactam is not subject to prescribing restrictions in most boards and compliance with antibiotic policies is much lower (only 4 boards in top quartile)
- Indication for use was well documented in most boards but review/stop dates poorly documented in the majority
- Freely available for use using a variety of mechanisms, only a minority of boards routinely suppress reporting by the laboratory

Next Steps

- In depth review of prescribing processes for these agents to examine best practise
- Interviews with clinicians
- Update of SAPG MDRGNB guidelines