**Antimicrobial Stewardship**

**RightCare UTI Focus Pack**

**Version: 3.2, May 2023**

**Comparator Descriptions and Specifications**

# Contents

[Background 3](#_Toc134000701)

[Purpose 4](#_Toc134000702)

[Limitations 5](#_Toc134000703)

[Table 1: List of comparators 5](#_Toc134000704)

[Prescribing data used in these comparators 6](#_Toc134000705)

[How to use these comparators 7](#_Toc134000706)

[Data Source: 7](#_Toc134000707)

[Data owner & contact details: 7](#_Toc134000708)

[Time Frame: 7](#_Toc134000709)

[Data quality assurance 7](#_Toc134000710)

[Comparator Specifications 8](#_Toc134000711)

[Lower Urinary tract infections - Combined antibiotic items prescribed per 1,000 oral antibacterials (BNF 5.1 sub-set) items based STAR-PU (2013) 8](#_Toc134000712)

[Lower Urinary tract infections - Net Ingredient Cost (NIC) for combined antibiotic items prescribed per 1,000 oral antibacterials (BNF 5.1 sub-set) cost based STAR-PU (2013) 9](#_Toc134000713)

[Lower Urinary tract infections - Combined antibiotic items prescribed to patients aged 70 years plus, per 1,000 patient list size aged 70 years plus 10](#_Toc134000714)

[Number of Nitrofurantoin items prescribed to patients aged 70 years plus, per 1,000 patient list size aged 70 years plus 11](#_Toc134000715)

[Number of Trimethoprim items prescribed to patients aged 70 years plus, per 1,000 patient list size aged 70 years plus 12](#_Toc134000716)

[Number of Trimethoprim items prescribed to patients aged 70 years plus, as a proportion of all Trimethoprim items prescribed 13](#_Toc134000717)

[Number of Oral Cephalosporin items prescribed per 1,000 oral antibacterials (BNF 5.1 sub-set) items based STAR-PU (2013) 14](#_Toc134000718)

[Total Net Ingredient Cost (NIC) for Oral Cephalosporin items prescribed, per 1,000 oral antibacterials (BNF 5.1 sub-set) cost based STAR-PU (2013) 16](#_Toc134000719)

[Number of unique people of all ages prescribed trimethoprim more than once in any three consecutive months within the 12 month period 18](#_Toc134000720)

[References 19](#_Toc134000721)

[Appendix 1: RightCare UTI Focus Pack 20](#_Toc134000722)

[Working group: 20](#_Toc134000723)

# Background

Improving the management of urinary tract infection (UTI) aligns to the 2016 Government response to the Review on Antimicrobial Resistance that set two ambitions; to reduce healthcare associated gram-negative bloodstream infections in England by 50% and to reduce inappropriate antibiotic prescribing by 50% by 2020. These ambitions have been updated in the [UK 5-year action plan](https://www.gov.uk/government/publications/uk-5-year-action-plan-for-antimicrobial-resistance-2019-to-2024): Tackling antimicrobial resistance 2019 to 2024, including a new ambition to reduce antibiotic prescribing in humans by 15% by 2024. This includes a 25% reduction in antibiotic use in the community.

Urinary tract infection (UTI) is a non-specific term that refers to infection anywhere in the urinary tract, and the management of a UTI depends on the site and type of infection. Lower UTI (also known as cystitis) is an infection of the bladder, and almost half of all women will experience at least one episode of cystitis during their lifetime. Nearly one in three women will have had at least one episode of cystitis by the age of 24 years ([European Association of Urology (EAU) 2020](https://uroweb.org/guideline/urological-infections/)). UTIs are usually caused by bacteria from the gastrointestinal tract entering the urethra and ascending into the bladder. The most common causative pathogen in uncomplicated UTIs, in 70-95% of cases, is Escherichia coli (E. coli).

Urinary catheter use is frequently associated with catheter-associated UTIs (CAUTIs). The dominant risk for a catheter-associated infection is the duration of catheterisation, with nearly all people with a catheter developing bacteria in their urine (bacteriuria) within one month of catheterisation ([Loveday et al. 2014](https://www.sciencedirect.com/science/article/pii/S0195670113600122?via%3Dihub)).

Older people often have asymptomatic bacteriuria, which does not require antibiotic treatment, but will report positive nitrites with a dip stick urinalysis. Incorrect diagnosis of a UTI leads to unnecessary antibiotic use which can increase the risk of antibiotic resistant infections in the future. These are harder and more costly to treat, and can put patients at risk of harm. Incorrect diagnosis can also lead to a missed correct diagnosis resulting in inappropriate patient care. Use of urine dip sticks to diagnose UTIs in older people is not appropriate and should not be used.

Appropriate diagnosis of all UTIs is essential to ensure patients have appropriate treatment. Public Health England have published diagnostic guidance that aligns to NEWS2 and sepsis guidance that should be followed by clinicians.

Trimethoprim resistance is more likely to occur in older people, people who have repeated UTIs, and people who have taken trimethoprim in the preceding three-month period, who are therefore at greater risk of treatment failure. Nitrofurantoin is reported to have the lowest rate of resistance in all age groups and NICE recommend nitrofurantoin as a first choice antibiotic to treat lower UTIs in adults and children, with trimethoprim an alternative choice if the patient is known to have a low risk of resistance. Inappropriate management of a UTI can result in a treatment failure and increase the risk of E.coli bacteraemia.

31.4 million antibiotic items were prescribed in primary care in 2019/20, at a cost of £165 million. 22% (7.0 million) of these items were for antibiotics commonly prescribed in primary care to treat lower UTI at a cost of £47.6 million, and 41% (2.73 million) of these antibiotics were prescribed to people aged 70+ years.

NICE guidance advises trimethoprim is prescribed for people who are known to have a low risk of resistance, yet 43% of all trimethoprim items are prescribed for people aged 70+ years who are more likely to have a higher risk of trimethoprim resistant UTI.

Nitrofurantoin and trimethoprim account for 84% of the 7.0 million antibiotic items commonly prescribed to treat lower UTI in primary care, with 39% of items prescribed to people aged 70+ years.

# Purpose

The purpose of the RightCare UTI prescribing measures is to allow local health systems to:

* see the variation in antibiotic prescribing for lower UTI
* compare antibiotic prescribing for lower UTI in people aged 70+ years who are at greater risk of both inappropriate antibiotic prescribing and antibiotic resistance
* understand how many patients are prescribed trimethoprim more than once within a three month time period, which is known to increase the risk of a treatment failure in older people
* identify areas which may warrant further investigation and improvement
* track progress against any associated improvement activities

The dashboard is expected to be used alongside the associated RightCare UTI Focus Pack, which presents yearly data and/or clinical narrative covering the following topics:

* Risk factors
* Primary care prescribing (same data as this dashboard)
* Inpatient admissions
* E.coli bloodstream infections
* Sepsis
* Admissions from care homes
* Catheters and catheter-associated UTIs

The RightCare UTI pack can be used to identify potential areas for improvement within primary care prescribing of lower UTI antibiotics, and this dashboard can then assist local systems to track progress with up-to-date 12-months-rolling figures.

The packs are available on [NHS Futures](https://future.nhs.uk/ECDC/grouphome), (go to 'Specialities', then 'Urology'); please note that you will need to register as an NHS Futures member to access the packs.

# Limitations

Historically, primary care prescribing information was derived from the reimbursement processes for dispensed medicines. However, the NHSBSA is now able to capture extra information that undoubtedly adds value to prescribing measures. The NHS number of the recipient of a medicine prescribed in primary care can now be linked to items prescribed. This development enables the data to show how many patients are prescribed a medicine or group of medicines (rather than presentation of drugs prescribed by each GP practice). In this way, we are able to demonstrate much better the quality of prescribing in key areas.

Information governance is very important and in the preparation of these comparators, all data protection legislation and patient confidentiality has been carefully considered and adhered to. While comparators may be derived from patient level records, personal identifiable data will not be included within the reports.

Each comparator has a full specification outlining the evidence base behind the comparator; the rationale for inclusion and the data source (see Table 1 for list of comparators).

**This comparator specification document is NOT a prescribing guideline. It simply shows how the comparators were developed and the rationale behind each comparator.**

# Table 1: List of comparators

|  |
| --- |
| **Comparator Title** |
| Lower Urinary tract infections - Combined antibiotic items prescribed per 1,000 oral antibacterials (BNF 5.1 sub-set) items based STAR-PU (2013) |
| Lower Urinary tract infections - Net Ingredient Cost (NIC) for combined antibiotic items prescribed per 1,000 oral antibacterials (BNF 5.1 sub-set) cost based STAR-PU (2013) |
| Lower Urinary tract infections - Combined antibiotic items prescribed to patients aged 70 years plus, per 1,000 patient list size aged 70 years plus |
| Number of Nitrofurantoin items prescribed to patients aged 70 years plus, per 1,000 patient list size aged 70 years plus |
| Number of Trimethoprim items prescribed to patients aged 70 years plus, per 1,000 patient list size aged 70 years plus |
| Number of Trimethoprim items prescribed to patients aged 70 years plus, as a proportion of all Trimethoprim items prescribed |
| Number of Oral Cephalosporin items prescribed per 1,000 oral antibacterials (BNF 5.1 sub-set) items based STAR-PU (2013) |
| Total Net Ingredient Cost (NIC) for Oral Cephalosporin items prescribed, per 1,000 oral antibacterials (BNF 5.1 sub-set) cost based STAR-PU (2013) |
| Number of unique people of all ages prescribed trimethoprim more than once in any three consecutive months within the 12 month period |

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# Prescribing data used in these comparators

Users of these prescribing comparators must be aware of the following parameters:

The data for these comparators

* Covers all items prescribed in primary care by practices and cost centres linked to CCGs.
* Is only displayed for current CCGs, and not closed CCGs
* Does not include hospital prescribing. Therefore, medicines supplied via Home Care or HIV medicines or medicines supplied by the hospital pharmacy are not included.
* Does not include medicines supplied over the counter.
* Does not include medicines supplied by NHS community services.

Each comparator is derived using prescribing data for a 12 month period, rolled into a single month. Therefore each data point represents a year’s worth of prescribing. Historic data is available to allow organisations such as practices, PCNs or CCGs to chart their progress in addressing a particular comparator area.

All of the comparators show 12-month-rolling data at GP Practice/Cost Centre level (aggregated to PCN, CCG, Similar 10, STP, Regional and England level).

For patient list sizes and STAR-PU populations used in these comparators, the 12-month-rolling figure is calculated as the mean average of the monthly figures within the 12 months. For example the list size for the 12-month period January 2020 to December 2020 is the sum of the list size for each month January 2020 to December 2020, divided by 12. Note that list sizes by age band were not available before November 2018, so the list size for the 12-months-rolling to November 2018 will be just the list size for November 2018. The list size for the 12-months-rolling to December 2018 will be the mean average of the list sizes from November and December 2018, and the list size for the 12-months-rolling to January 2019 will be the mean average of the list sizes from November 2018, December 2018 and January 2019, and so on.

**Unique patient:** This has been determined from prescriptions where the NHSBSA has been able to obtain details regarding patient NHS number. Where the same patient appears in the data for more than one practice location they will be counted as one patient for each of the practice locations they appear in.

NB: While NHS numbers are used to formulate these comparators, no personal identifiable data will be released through these comparators.

A patient’s age is determined as the age that is captured whilst processing the prescription for processing e.g. where a patient has been flagged as both 69 and 70 in a month, only those prescriptions where the age has been captured as 70 will have been used.

# How to use these comparators

The measures will enable local health systems to identify opportunities for further improvement in the safe and effective management of UTI, and report associated improvement

We envisage that the comparators will be used by NHS Regional teams, integrated care systems, and CCGs in collaboration with local Primary Care Networks and GP practices and with the relevant and appropriate education and training support in place.

The comparators have been designed to be the stimulus for debate and improvement. This facilitates an approach of taking a population perspective to trigger the search for unwarranted variation in care.

Identifying outlying practice and variation enables NHS systems to focus improvement activity.

Data Source:

NHS Business Services Authority -based on data from the NHSBSA’s prescription processing system which contains all NHS prescription data, with the exception of prescriptions which are dispensed in prisons, hospitals and private prescriptions.

Analysis is based on drugs that were reimbursed by the NHSBSA. It excludes items not dispensed and disallowed. If a prescription was issued, but not presented for dispensing or was not submitted to NHS Prescription Services by the dispenser, then it is not included in the data provided.

Data owner & contact details: [nhsbsa@nhs.net](mailto:nhsbsa@nhs.net)

Time Frame: Refreshed monthly

# Data quality assurance

NHS Prescription Services have their own internal quality process to assure the data they provide matches what was originally submitted as part of the prescription processing activity. Some processes are complex and manual therefore there may be random inaccuracies in capturing prescription information which are then reflected in the data but checks are in place to reduce the chance of issues occurring. The processes operate to a number of key performance indicators, one of which is the percentage Prescription Information Accuracy, the target being 99.6% and as at July 2017 the accuracy level achieved over the latest 12-months-rolling period was 99.81%.

Currently (three months to October 2020), 95.55% of all prescription items prescribed in England can be linked to an NHS number. Age can be linked to 95.52% of prescription items. For EPS, the accuracy is 100%. In the three months to October 2020, EPS items accounted for 85.42% of all English prescribed items.

# Comparator Specifications

## Lower Urinary tract infections - Combined antibiotic items prescribed per 1,000 oral antibacterials (BNF 5.1 sub-set) items based STAR-PU (2013)

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| **Section 1: Introduction / Overview** | | |
| 1.1 | **Title** | Lower Urinary tract infections - Combined antibiotic items prescribed per 1,000 oral antibacterials (BNF 5.1 sub-set) items based STAR-PU (2013) |
| 1.2 | **Definition** | Combined antibiotics includes those commonly prescribed in primary care to treat or prevent lower UTIs and include: Cefaclor, Cefadroxil, Cefalexin, Cefixime, Cefradine, Cefuroxime Axetil, Fosfomycin Calcium, Fosfomycin Trometamol, Nitrofurantoin, Pivmecillinam hydrochloride and Trimethoprim |
| 1.3 | **Reporting Level** | GP Practice/Cost Centre level (aggregated to PCN, CCG, Similar 10, STP, Regional and England level). |
| 1.4 | **Numerator** | Number of items prescribed to all patients for the following drugs:   |  |  | | --- | --- | | **BNF Chemical Substance / Presentation** | **BNF Code** | | Pivmecillinam Hydrochloride | 0501015P0 | | Cefaclor | 0501021A0 | | Cefadroxil | 0501021B0 | | Cefixime | 0501021C0 | | Cefuroxime Axetil | 0501021K0 | | Cefalexin | 0501021L0 | | Cefradine | 0501021M0 | | Fosfomycin Trometamol | 0501070AE | | Trimethoprim | 0501080W0 | | Nitrofurantoin | 0501130R0 | | Fosfomycin Calcium | 0501130S0 | |
| 1.5 | **Denominator** | Oral antibacterials (BNF 5.1 sub-set) items based STAR PU (2013) |
| 1.6 | **Methodology** | Numerator divided by denominator, multiplied by 1,000 |
| **Section 2: Rationale** | | |
| 2.1 | **Purpose** | This reports volume of antibiotic prescribing for suspected lower UTI |
| 2.2 | **Evidence and Policy Base** | Improving the management of UTI aligns to the [2016 Government response to the Review on Antimicrobial Resistance](https://www.gov.uk/government/publications/government-response-the-review-on-antimicrobial-resistance) that set two ambitions; to reduce healthcare associated gram-negative bloodstream infections in England by 50% and to reduce inappropriate antibiotic prescribing by 50% by 2020. These ambitions have been updated in the [UK 5-year action plan: Tackling antimicrobial resistance 2019 to 2024](https://www.gov.uk/government/collections/antimicrobial-resistance-amr-information-and-resources).  Public Health England have published [diagnostic guidance](https://www.gov.uk/government/publications/urinary-tract-infection-diagnosis) for UTI in older people  NICE have published [guidance for antimicrobial prescribing](https://www.nice.org.uk/about/what-we-do/our-programmes/nice-guidance/antimicrobial-prescribing-guidelines) of UTI |

## Lower Urinary tract infections - Net Ingredient Cost (NIC) for combined antibiotic items prescribed per 1,000 oral antibacterials (BNF 5.1 sub-set) cost based STAR-PU (2013)

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| --- | --- | --- |
| **Section 1: Introduction / Overview** | | |
| 1.1 | **Title** | Lower Urinary tract infections - Net Ingredient Cost (NIC) for combined antibiotic items prescribed per 1,000 oral antibacterials (BNF 5.1 sub-set) cost based STAR-PU (2013) |
| 1.2 | **Definition** | Combined antibiotics includes those commonly prescribed in primary care to treat or prevent lower UTIs and include: Cefaclor, Cefadroxil, Cefalexin, Cefixime, Cefradine, Cefuroxime Axetil, Fosfomycin Calcium, Fosfomycin Trometamol, Nitrofurantoin, Pivmecillinam hydrochloride and Trimethoprim |
| 1.3 | **Reporting Level** | GP Practice/Cost Centre level (aggregated to PCN, CCG, Similar 10, STP, Regional and England level) |
| 1.4 | **Numerator** | Net ingredient cost of items prescribed to all patients for the following drugs   |  |  | | --- | --- | | **BNF Chemical Substance / Presentation** | **BNF Code** | | Pivmecillinam Hydrochloride | 0501015P0 | | Cefaclor | 0501021A0 | | Cefadroxil | 0501021B0 | | Cefixime | 0501021C0 | | Cefuroxime Axetil | 0501021K0 | | Cefalexin | 0501021L0 | | Cefradine | 0501021M0 | | Fosfomycin Trometamol | 0501070AE | | Trimethoprim | 0501080W0 | | Nitrofurantoin | 0501130R0 | | Fosfomycin Calcium | 0501130S0 | |
| 1.5 | **Denominator** | Oral antibacterials (BNF 5.1 sub-set) cost based STAR PU (2013) |
| 1.6 | **Methodology** | Numerator divided by denominator, multiplied by 1,000 |
| **Section 2: Rationale** | | |
| 2.1 | **Purpose** | This reports cost of antibiotic prescribing for suspected lower UTI |
| 2.2 | **Evidence and Policy Base** | Improving the management of UTI aligns to the [2016 Government response to the Review on Antimicrobial Resistance](https://www.gov.uk/government/publications/government-response-the-review-on-antimicrobial-resistance) that set two ambitions; to reduce healthcare associated gram-negative bloodstream infections in England by 50% and to reduce inappropriate antibiotic prescribing by 50% by 2020. These ambitions have been updated in the [UK 5-year action plan: Tackling antimicrobial resistance 2019 to 2024](https://www.gov.uk/government/collections/antimicrobial-resistance-amr-information-and-resources).  Public Health England have published [diagnostic guidance](https://www.gov.uk/government/publications/urinary-tract-infection-diagnosis) for UTI in older people  NICE have published [guidance for antimicrobial prescribing](https://www.nice.org.uk/about/what-we-do/our-programmes/nice-guidance/antimicrobial-prescribing-guidelines) of UTI. |

## Lower Urinary tract infections - Combined antibiotic items prescribed to patients aged 70 years plus, per 1,000 patient list size aged 70 years plus

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| **Section 1: Introduction / Overview** | | |
| 1.1 | **Title** | Lower Urinary tract infections - Combined antibiotic items prescribed to patients aged 70 years plus, per 1,000 patient list size aged 70 years plus |
| 1.2 | **Definition** | Combined antibiotics includes those commonly prescribed in primary care to treat or prevent lower UTIs and include: Cefaclor, Cefadroxil, Cefalexin, Cefixime, Cefradine, Cefuroxime Axetil, Fosfomycin Calcium, Fosfomycin Trometamol, Nitrofurantoin, Pivmecillinam hydrochloride and Trimethoprim |
| 1.3 | **Reporting Level** | GP Practice/Cost Centre level (aggregated to PCN, CCG, Similar 10, STP, Regional and England level) |
| 1.4 | **Numerator** | Number of items prescribed to all patients aged 70 years plus for the following drugs:   |  |  | | --- | --- | | **BNF Chemical Substance / Presentation** | **BNF Code** | | Pivmecillinam Hydrochloride | 0501015P0 | | Cefaclor | 0501021A0 | | Cefadroxil | 0501021B0 | | Cefixime | 0501021C0 | | Cefuroxime Axetil | 0501021K0 | | Cefalexin | 0501021L0 | | Cefradine | 0501021M0 | | Fosfomycin Trometamol | 0501070AE | | Trimethoprim | 0501080W0 | | Nitrofurantoin | 0501130R0 | | Fosfomycin Calcium | 0501130S0 | |
| 1.5 | **Denominator** | Number of patients on practice list size aged 70 years plus |
| 1.6 | **Methodology** | Numerator divided by denominator, multiplied by 1,000 |
| **Section 2: Rationale** | | |
| 2.1 | **Purpose** | People aged 70+ years should not have UTI diagnosed by urine dip sticks as this may lead to inappropriate antibiotic treatment of asymptomatic bacteriuria. Inappropriate antibiotic use can lead to the development of antibiotic resistant infections that are harder to treat |
| 2.2 | **Evidence and Policy Base** | Improving the management of UTI aligns to the [2016 Government response to the Review on Antimicrobial Resistance](https://www.gov.uk/government/publications/government-response-the-review-on-antimicrobial-resistance) that set two ambitions; to reduce healthcare associated gram-negative bloodstream infections in England by 50% and to reduce inappropriate antibiotic prescribing by 50% by 2020. These ambitions have been updated in the [UK 5-year action plan: Tackling antimicrobial resistance 2019 to 2024](https://www.gov.uk/government/collections/antimicrobial-resistance-amr-information-and-resources).  Public Health England have published [diagnostic guidance](https://www.gov.uk/government/publications/urinary-tract-infection-diagnosis) for UTI in older people  NICE have published [guidance for antimicrobial prescribing](https://www.nice.org.uk/about/what-we-do/our-programmes/nice-guidance/antimicrobial-prescribing-guidelines) of UTI. |

## Number of Nitrofurantoin items prescribed to patients aged 70 years plus, per 1,000 patient list size aged 70 years plus

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| --- | --- | --- |
| **Section 1: Introduction / Overview** | | |
| 1.1 | **Title** | Number of Nitrofurantoin items prescribed to patients aged 70 years plus, per 1,000 patient list size aged 70 years plus |
| 1.2 | **Definition** | Number of Nitrofurantoin items prescribed to patients aged 70 years plus, per 1,000 patient list size aged 70 years plus |
| 1.3 | **Reporting Level** | GP Practice/Cost Centre level (aggregated to PCN, CCG, Similar 10, STP, Regional and England level) |
| 1.4 | **Numerator** | Number of Nitrofurantoin items prescribed to patients aged 70 years plus   |  |  | | --- | --- | | **BNF Chemical Substance / Presentation** | **BNF Code** | | Nitrofurantoin | 0501130R0 | |
| 1.5 | **Denominator** | Number of patients on practice list size aged 70 years plus |
| 1.6 | **Methodology** | Numerator divided by denominator, multiplied by 1,000 |
| **Section 2: Rationale** | | |
| 2.1 | **Purpose** | Older people are more likely to have a lower UTI that is resistant to trimethoprim but sensitive to nitrofurantoin.  This measure should be viewed in conjunction with the total lower UTI prescribing rates in those aged 70+, and the rate of Trimethoprim prescribing in those aged 70+. |
| 2.2 | **Evidence and Policy Base** | Improving the management of UTI aligns to the [2016 Government response to the Review on Antimicrobial Resistance](https://www.gov.uk/government/publications/government-response-the-review-on-antimicrobial-resistance) that set two ambitions; to reduce healthcare associated gram-negative bloodstream infections in England by 50% and to reduce inappropriate antibiotic prescribing by 50% by 2020. These ambitions have been updated in the [UK 5-year action plan: Tackling antimicrobial resistance 2019 to 2024](https://www.gov.uk/government/collections/antimicrobial-resistance-amr-information-and-resources).  Public Health England have published [diagnostic guidance](https://www.gov.uk/government/publications/urinary-tract-infection-diagnosis) for UTI in older people  NICE have published [guidance for antimicrobial prescribing](https://www.nice.org.uk/about/what-we-do/our-programmes/nice-guidance/antimicrobial-prescribing-guidelines) of UTI.  [AMR local indicators](https://fingertips.phe.org.uk/profile/amr-local-indicators) - produced by the UKHSA include Antimicrobial Resistance. |

## Number of Trimethoprim items prescribed to patients aged 70 years plus, per 1,000 patient list size aged 70 years plus

|  |  |  |
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| **Section 1: Introduction / Overview** | | |
| 1.1 | **Title** | Number of Trimethoprim items prescribed to patients aged 70 years plus, per 1,000 patient list size aged 70 years plus |
| 1.2 | **Definition** | Number of Trimethoprim items prescribed to patients aged 70 years plus, per 1,000 patient list size aged 70 years plus |
| 1.3 | **Reporting Level** | GP Practice/Cost Centre level (aggregated to PCN, CCG, Similar 10, STP, Regional and England level) |
| 1.4 | **Numerator** | Number of Trimethoprim items prescribed to patients aged 70 years plus   |  |  | | --- | --- | | **BNF Chemical Substance / Presentation** | **BNF Code** | | Trimethoprim | 0501080W0 | |
| 1.5 | **Denominator** | Number of patients on practice list size aged 70 years plus |
| 1.6 | **Methodology** | Numerator divided by denominator, multiplied by 1,000 |
| **Section 2: Rationale** | | |
| 2.1 | **Purpose** | Older people are more likely to have a lower UTI that is resistant to trimethoprim but sensitive to nitrofurantoin.  This measure should be viewed in conjunction with the total lower UTI prescribing rates in those aged 70+, and the rate of Nitrofurantoin prescribing in those aged 70+. |
| 2.2 | **Evidence and Policy Base** | Improving the management of UTI aligns to the [2016 Government response to the Review on Antimicrobial Resistance](https://www.gov.uk/government/publications/government-response-the-review-on-antimicrobial-resistance) that set two ambitions; to reduce healthcare associated gram-negative bloodstream infections in England by 50% and to reduce inappropriate antibiotic prescribing by 50% by 2020. These ambitions have been updated in the [UK 5-year action plan: Tackling antimicrobial resistance 2019 to 2024](https://www.gov.uk/government/collections/antimicrobial-resistance-amr-information-and-resources).  Public Health England have published [diagnostic guidance](https://www.gov.uk/government/publications/urinary-tract-infection-diagnosis) for UTI in older people  NICE have published [guidance for antimicrobial prescribing](https://www.nice.org.uk/about/what-we-do/our-programmes/nice-guidance/antimicrobial-prescribing-guidelines) of UTI.  [AMR local indicators](https://fingertips.phe.org.uk/profile/amr-local-indicators) - produced by the UKHSA include Antimicrobial Resistance. |

## Number of Trimethoprim items prescribed to patients aged 70 years plus, as a proportion of all Trimethoprim items prescribed

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| --- | --- | --- |
| **Section 1: Introduction / Overview** | | |
| 1.1 | **Title** | Number of Trimethoprim items prescribed to patients aged 70 years plus, as a proportion of all Trimethoprim items prescribed |
| 1.2 | **Definition** | Number of Trimethoprim items prescribed to patients aged 70 years plus, as a proportion of all Trimethoprim items prescribed |
| 1.3 | **Reporting Level** | GP Practice/Cost Centre level (aggregated to PCN, CCG, Similar 10, STP, Regional and England level) |
| 1.4 | **Numerator** | Number of Trimethoprim items prescribed to patients aged 70 years plus   |  |  | | --- | --- | | **BNF Chemical Substance / Presentation** | **BNF Code** | | Trimethoprim | 0501080W0 | |
| 1.5 | **Denominator** | Number of Trimethoprim items prescribed to all patients   |  |  | | --- | --- | | **BNF Chemical Substance / Presentation** | **BNF Code** | | Trimethoprim | 0501080W0 | |
| 1.6 | **Methodology** | Numerator divided by denominator, (displayed as a percentage) |
| **Section 2: Rationale** | | |
| 2.1 | **Purpose** | Older people are more likely to have a lower UTI that is resistant to trimethoprim. |
| 2.2 | **Evidence and Policy Base** | Improving the management of UTI aligns to the [2016 Government response to the Review on Antimicrobial Resistance](https://www.gov.uk/government/publications/government-response-the-review-on-antimicrobial-resistance) that set two ambitions; to reduce healthcare associated gram-negative bloodstream infections in England by 50% and to reduce inappropriate antibiotic prescribing by 50% by 2020. These ambitions have been updated in the [UK 5-year action plan: Tackling antimicrobial resistance 2019 to 2024](https://www.gov.uk/government/collections/antimicrobial-resistance-amr-information-and-resources).  Public Health England have published [diagnostic guidance](https://www.gov.uk/government/publications/urinary-tract-infection-diagnosis) for UTI in older people  NICE have published [guidance for antimicrobial prescribing](https://www.nice.org.uk/about/what-we-do/our-programmes/nice-guidance/antimicrobial-prescribing-guidelines) of UTI.  [AMR local indicators](https://fingertips.phe.org.uk/profile/amr-local-indicators) - produced by the UKHSA include Antimicrobial Resistance. |

## Number of Oral Cephalosporin items prescribed per 1,000 oral antibacterials (BNF 5.1 sub-set) items based STAR-PU (2013)

|  |  |  |
| --- | --- | --- |
| **Section 1: Introduction / Overview** | | |
| 1.1 | **Title** | Number of Oral Cephalosporin items prescribed per 1,000 oral antibacterials (BNF 5.1 sub-set) items based STAR-PU (2013) |
| 1.2 | **Definition** | Cephalosporin prescribing to treat lower UTIs is limited to second line choice in pregnant women and children; however, it is placed as a NICE guidance first choice to treat pyelonephritis (acute) |
| 1.3 | **Reporting Level** | GP Practice/Cost Centre level (aggregated to PCN, CCG, Similar 10, STP, Regional and England level) |
| 1.4 | **Numerator** | Total number of items prescribed to all patients for the following drugs:   |  |  | | --- | --- | | **BNF Chemical Substance / Presentation** | **BNF Code** | | Cefaclor 250mg capsules | 0501021A0AAAAAA | | Cefaclor 125mg/5ml oral suspension | 0501021A0AAABAB | | Cefaclor 250mg/5ml oral suspension | 0501021A0AAACAC | | Cefaclor 500mg capsules | 0501021A0AAAEAE | | Cefaclor 375mg modified-release tablets | 0501021A0AAAGAG | | Cefaclor 125mg/5ml oral suspension sugar free | 0501021A0AAAJAJ | | Cefaclor 250mg/5ml oral suspension sugar free | 0501021A0AAAKAK | | Distaclor 125mg/5ml oral suspension | 0501021A0BBABAB | | Distaclor 250mg/5ml oral suspension | 0501021A0BBACAC | | Distaclor 500mg capsules | 0501021A0BBADAE | | Distaclor MR 375mg tablets | 0501021A0BBAEAG | | Keftid 250mg capsules | 0501021A0BDAAAA | | Keftid 500mg capsules | 0501021A0BDABAE | | Keftid 125mg/5ml oral suspension | 0501021A0BDACAJ | | Keftid 250mg/5ml oral suspension | 0501021A0BDADAK | | Bacticlor MR 375mg tablets | 0501021A0BEAAAG | | Cefadroxil 500mg capsules | 0501021B0AAAAAA | | Cefadroxil 125mg/5ml oral suspension | 0501021B0AAABAB | | Cefadroxil 250mg/5ml oral suspension | 0501021B0AAACAC | | Cefadroxil 500mg/5ml oral suspension | 0501021B0AAADAD | | Baxan 500mg capsules | 0501021B0BBAAAA | | Baxan 125mg/5ml oral suspension | 0501021B0BBABAB | | Baxan 250mg/5ml oral suspension | 0501021B0BBACAC | | Baxan 500mg/5ml oral suspension | 0501021B0BBADAD | | Cefixime 200mg tablets | 0501021C0AAAAAA | | Cefixime 100mg/5ml oral suspension | 0501021C0AAABAB | | Cefixime 400mg tablets | 0501021C0AAACAC | | Suprax 200mg tablets | 0501021C0BBAAAA | | Suprax Paediatric 100mg/5ml oral suspension | 0501021C0BBABAB | | Cefuroxime 125mg tablets | 0501021K0AAAAAA | | Cefuroxime 250mg tablets | 0501021K0AAABAB | | Cefuroxime 125mg/5ml oral suspension | 0501021K0AAACAC | | Cefuroxime 125mg granules sachets | 0501021K0AAADAD | | Zinnat 125mg tablets | 0501021K0BBAAAA | | Zinnat 250mg tablets | 0501021K0BBABAB | | Zinnat 125mg/5ml oral suspension | 0501021K0BBACAC | | Zinnat Suspension 125mg granules sachets | 0501021K0BBADAD | | Cefalexin 250mg capsules | 0501021L0AAAAAA | | Cefalexin 500mg capsules | 0501021L0AAABAB | | Cefalexin 125mg/5ml oral suspension | 0501021L0AAACAC | | Cefalexin 250mg/5ml oral suspension | 0501021L0AAADAD | | Cefalexin 500mg/5ml oral suspension | 0501021L0AAAEAE | | Cefalexin 250mg tablets | 0501021L0AAAGAG | | Cefalexin 500mg tablets | 0501021L0AAAHAH | | Cefalexin 125mg/5ml oral suspension sugar free | 0501021L0AAANAN | | Cefalexin 250mg/5ml oral suspension sugar free | 0501021L0AAAPAP | | Ceporex 250mg capsules | 0501021L0BBAAAA | | Ceporex 500mg capsules | 0501021L0BBABAB | | Ceporex 250mg tablets | 0501021L0BBACAG | | Ceporex 500mg tablets | 0501021L0BBADAH | | Ceporex 125mg/5ml syrup | 0501021L0BBAHAC | | Ceporex 250mg/5ml syrup | 0501021L0BBAIAD | | Ceporex 500mg/5ml syrup | 0501021L0BBAJAE | | Keflex 250mg capsules | 0501021L0BCAAAA | | Keflex 500mg capsules | 0501021L0BCABAB | | Keflex 250mg tablets | 0501021L0BCACAG | | Keflex 500mg tablets | 0501021L0BCADAH | | Keflex 125mg/5ml oral suspension | 0501021L0BCAEAC | | Keflex 250mg/5ml oral suspension | 0501021L0BCAFAD | | Cefradine 250mg capsules | 0501021M0AAAAAA | | Cefradine 500mg capsules | 0501021M0AAABAB | | Cefradine 250mg/5ml oral solution | 0501021M0AAAFAF | | Velosef 250mg capsules | 0501021M0BBAAAA | | Velosef 500mg capsules | 0501021M0BBABAB | | Velosef 250mg/5ml syrup | 0501021M0BBACAF | | Nicef 250mg capsules | 0501021M0BCAAAA | | Nicef 500mg capsules | 0501021M0BCABAB | |
| 1.5 | **Denominator** | Oral antibacterials (BNF 5.1 sub-set) items based STAR PU (2013) |
| 1.6 | **Methodology** | Numerator divided by denominator, multiplied by 1,000 |
| **Section 2: Rationale** | | |
| 2.1 | **Purpose** | Cephalosporin prescribing to treat lower UTIs is limited to second line choice in pregnant women and children; however, it is placed as a NICE guidance first choice to treat pyelonephritis (acute). Appropriate use will help to minimise the development of antimicrobial resistance to cefalexin. |
| 2.2 | **Evidence and Policy Base** | Improving the management of UTI aligns to the [2016 Government response to the Review on Antimicrobial Resistance](https://www.gov.uk/government/publications/government-response-the-review-on-antimicrobial-resistance) that set two ambitions; to reduce healthcare associated gram-negative bloodstream infections in England by 50% and to reduce inappropriate antibiotic prescribing by 50% by 2020. These ambitions have been updated in the [UK 5-year action plan: Tackling antimicrobial resistance 2019 to 2024](https://www.gov.uk/government/collections/antimicrobial-resistance-amr-information-and-resources).  Public Health England have published [diagnostic guidance](https://www.gov.uk/government/publications/urinary-tract-infection-diagnosis) for UTI in older people  NICE have published [guidance for antimicrobial prescribing](https://www.nice.org.uk/about/what-we-do/our-programmes/nice-guidance/antimicrobial-prescribing-guidelines) of UTI. |

## Total Net Ingredient Cost (NIC) for Oral Cephalosporin items prescribed, per 1,000 oral antibacterials (BNF 5.1 sub-set) cost based STAR-PU (2013)

|  |  |  |
| --- | --- | --- |
| **Section 1: Introduction / Overview** | | |
| 1.1 | **Title** | Total Net Ingredient Cost (NIC) for Oral Cephalosporin items prescribed, per 1,000 oral antibacterials (BNF 5.1 sub-set) cost based STAR-PU (2013) |
| 1.2 | **Definition** | Cephalosporin prescribing to treat lower UTIs is limited to second line choice in pregnant women and children; however, it is placed as a NICE guidance first choice to treat pyelonephritis (acute) |
| 1.3 | **Reporting Level** | GP Practice/Cost Centre level (aggregated to PCN, CCG, Similar 10, STP, Regional and England level) |
| 1.4 | **Numerator** | Total net ingredient cost for items prescribed to all patients for the following drugs:   |  |  | | --- | --- | | **BNF Chemical Substance / Presentation** | **BNF Code** | | Cefaclor 250mg capsules | 0501021A0AAAAAA | | Cefaclor 125mg/5ml oral suspension | 0501021A0AAABAB | | Cefaclor 250mg/5ml oral suspension | 0501021A0AAACAC | | Cefaclor 500mg capsules | 0501021A0AAAEAE | | Cefaclor 375mg modified-release tablets | 0501021A0AAAGAG | | Cefaclor 125mg/5ml oral suspension sugar free | 0501021A0AAAJAJ | | Cefaclor 250mg/5ml oral suspension sugar free | 0501021A0AAAKAK | | Distaclor 125mg/5ml oral suspension | 0501021A0BBABAB | | Distaclor 250mg/5ml oral suspension | 0501021A0BBACAC | | Distaclor 500mg capsules | 0501021A0BBADAE | | Distaclor MR 375mg tablets | 0501021A0BBAEAG | | Keftid 250mg capsules | 0501021A0BDAAAA | | Keftid 500mg capsules | 0501021A0BDABAE | | Keftid 125mg/5ml oral suspension | 0501021A0BDACAJ | | Keftid 250mg/5ml oral suspension | 0501021A0BDADAK | | Bacticlor MR 375mg tablets | 0501021A0BEAAAG | | Cefadroxil 500mg capsules | 0501021B0AAAAAA | | Cefadroxil 125mg/5ml oral suspension | 0501021B0AAABAB | | Cefadroxil 250mg/5ml oral suspension | 0501021B0AAACAC | | Cefadroxil 500mg/5ml oral suspension | 0501021B0AAADAD | | Baxan 500mg capsules | 0501021B0BBAAAA | | Baxan 125mg/5ml oral suspension | 0501021B0BBABAB | | Baxan 250mg/5ml oral suspension | 0501021B0BBACAC | | Baxan 500mg/5ml oral suspension | 0501021B0BBADAD | | Cefixime 200mg tablets | 0501021C0AAAAAA | | Cefixime 100mg/5ml oral suspension | 0501021C0AAABAB | | Cefixime 400mg tablets | 0501021C0AAACAC | | Suprax 200mg tablets | 0501021C0BBAAAA | | Suprax Paediatric 100mg/5ml oral suspension | 0501021C0BBABAB | | Cefuroxime 125mg tablets | 0501021K0AAAAAA | | Cefuroxime 250mg tablets | 0501021K0AAABAB | | Cefuroxime 125mg/5ml oral suspension | 0501021K0AAACAC | | Cefuroxime 125mg granules sachets | 0501021K0AAADAD | | Zinnat 125mg tablets | 0501021K0BBAAAA | | Zinnat 250mg tablets | 0501021K0BBABAB | | Zinnat 125mg/5ml oral suspension | 0501021K0BBACAC | | Zinnat Suspension 125mg granules sachets | 0501021K0BBADAD | | Cefalexin 250mg capsules | 0501021L0AAAAAA | | Cefalexin 500mg capsules | 0501021L0AAABAB | | Cefalexin 125mg/5ml oral suspension | 0501021L0AAACAC | | Cefalexin 250mg/5ml oral suspension | 0501021L0AAADAD | | Cefalexin 500mg/5ml oral suspension | 0501021L0AAAEAE | | Cefalexin 250mg tablets | 0501021L0AAAGAG | | Cefalexin 500mg tablets | 0501021L0AAAHAH | | Cefalexin 125mg/5ml oral suspension sugar free | 0501021L0AAANAN | | Cefalexin 250mg/5ml oral suspension sugar free | 0501021L0AAAPAP | | Ceporex 250mg capsules | 0501021L0BBAAAA | | Ceporex 500mg capsules | 0501021L0BBABAB | | Ceporex 250mg tablets | 0501021L0BBACAG | | Ceporex 500mg tablets | 0501021L0BBADAH | | Ceporex 125mg/5ml syrup | 0501021L0BBAHAC | | Ceporex 250mg/5ml syrup | 0501021L0BBAIAD | | Ceporex 500mg/5ml syrup | 0501021L0BBAJAE | | Keflex 250mg capsules | 0501021L0BCAAAA | | Keflex 500mg capsules | 0501021L0BCABAB | | Keflex 250mg tablets | 0501021L0BCACAG | | Keflex 500mg tablets | 0501021L0BCADAH | | Keflex 125mg/5ml oral suspension | 0501021L0BCAEAC | | Keflex 250mg/5ml oral suspension | 0501021L0BCAFAD | | Cefradine 250mg capsules | 0501021M0AAAAAA | | Cefradine 500mg capsules | 0501021M0AAABAB | | Cefradine 250mg/5ml oral solution | 0501021M0AAAFAF | | Velosef 250mg capsules | 0501021M0BBAAAA | | Velosef 500mg capsules | 0501021M0BBABAB | | Velosef 250mg/5ml syrup | 0501021M0BBACAF | | Nicef 250mg capsules | 0501021M0BCAAAA | | Nicef 500mg capsules | 0501021M0BCABAB | |
| 1.5 | **Denominator** | Oral antibacterials (BNF 5.1 sub-set) cost based STAR PU (2013) |
| 1.6 | **Methodology** | Numerator divided by denominator, multiplied by 1,000 |
| **Section 2: Rationale** | | |
| 2.1 | **Purpose** | Cephalosporin prescribing to treat lower UTIs is limited to second line choice in pregnant women and children; however, it is placed as a NICE guidance first choice to treat pyelonephritis (acute). Appropriate use will help to minimise the development of antimicrobial resistance to cefalexin. |
| 2.2 | **Evidence and Policy Base** | Improving the management of UTI aligns to the [2016 Government response to the Review on Antimicrobial Resistance](https://www.gov.uk/government/publications/government-response-the-review-on-antimicrobial-resistance) that set two ambitions; to reduce healthcare associated gram-negative bloodstream infections in England by 50% and to reduce inappropriate antibiotic prescribing by 50% by 2020. These ambitions have been updated in the [UK 5-year action plan: Tackling antimicrobial resistance 2019 to 2024](https://www.gov.uk/government/collections/antimicrobial-resistance-amr-information-and-resources).  Public Health England have published [diagnostic guidance](https://www.gov.uk/government/publications/urinary-tract-infection-diagnosis) for UTI in older people  NICE have published [guidance for antimicrobial prescribing](https://www.nice.org.uk/about/what-we-do/our-programmes/nice-guidance/antimicrobial-prescribing-guidelines) of UTI |

## Number of unique people of all ages prescribed trimethoprim more than once in any three consecutive months within the 12 month period

|  |  |  |
| --- | --- | --- |
| **Section 1: Introduction / Overview** | | |
| 1.1 | **Title** | Number of unique people of all ages prescribed trimethoprim more than once in any three consecutive months within the 12 month period |
| 1.2 | **Definition** | This metric reports the number of people in whom the event (trimethoprim prescribed more than once in any three consecutive months) occurs at least once in the 12-month period. People in whom the event occurs more than once during the whole 12-month period count once only. Therefore, the number of events is likely to be greater than the number of people reported. |
| 1.3 | **Reporting Level** | GP Practice/Cost Centre level (aggregated to PCN, CCG, Similar 10, STP, Regional and England level) |
| 1.4 | **Numerator** | The number of people in whom the event (trimethoprim prescribed more than once in any three consecutive months) occurs at least once in the 12-month period.   |  |  | | --- | --- | | **BNF Chemical Substance / Presentation** | **BNF Code** | | Trimethoprim | 0501080W0 | |
| 1.5 | **Denominator** | None  Using a patient list size as a denominator was discounted for this comparator as the focus here is on those patients in whom the event occurs more than once during the whole 12-month period. |
| 1.6 | **Methodology** | Numerator. |
| **Section 2: Rationale** | | |
| 2.1 | **Purpose** | Trimethoprim should usually not be prescribed empirically to treat lower UTIs in people who have already been prescribed trimethoprim in the preceding three months due the possibility of empirical treatment failure. |
| 2.2 | **Evidence and Policy Base** | Improving the management of UTI aligns to the [2016 Government response to the Review on Antimicrobial Resistance](https://www.gov.uk/government/publications/government-response-the-review-on-antimicrobial-resistance) that set two ambitions; to reduce healthcare associated gram-negative bloodstream infections in England by 50% and to reduce inappropriate antibiotic prescribing by 50% by 2020. These ambitions have been updated in the [UK 5-year action plan: Tackling antimicrobial resistance 2019 to 2024](https://www.gov.uk/government/collections/antimicrobial-resistance-amr-information-and-resources).  Public Health England have published [diagnostic guidance](https://www.gov.uk/government/publications/urinary-tract-infection-diagnosis) for UTI in older people  NICE have published [guidance for antimicrobial prescribing](https://www.nice.org.uk/about/what-we-do/our-programmes/nice-guidance/antimicrobial-prescribing-guidelines) of UTI.  [AMR local indicators](https://fingertips.phe.org.uk/profile/amr-local-indicators) - produced by the UKHSA include Antimicrobial Resistance. |

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1. NICE (National Institute for Health and Care Excellence)

Antimicrobial prescribing guidelines

<https://www.nice.org.uk/about/what-we-do/our-programmes/nice-guidance/antimicrobial-prescribing-guidelines>

1. RightCare UTI Focus Pack

<https://future.nhs.uk/ECDC/grouphome>

Go to 'Specialities', then 'Urology'; please note that you will need to register as an NHS Futures member to access the packs

# Appendix 1: RightCare UTI Focus Pack

## **Working group**:

|  |  |
| --- | --- |
| **Name** | **Role/Organisation** |
| Elizabeth Beech MBE | Regional Antimicrobial Stewardship Lead South West Region, NHS England and NHS Improvement |
| Lydia Harman | Senior Analytical Manager, RightCare & Population Health |
| Margaret Dockey | Prescription Information Services Manager, NHS Business Service Authority |
| Simon Hartnett-Welch | Senior Information Analyst, NHS Business Service Authority |