**Publications reference number:** **B1343**

**Patient Group Direction (PGD) for the supply of ciprofloxacin to children under 12** **for post-exposure to plague**

## For the supply of ciprofloxacin tablets or suspension to children aged under 12 years of age, exposed to a known or suspected deliberate release of plague (*Yersinia pestis*), by registered healthcare practitioners identified in [Section 3](#staffcharacteristics), subject to any [limitations to authorisation](#limitations) detailed in [Section 2](#section2).

Reference: Ciprofloxacin under 12 supply plague PGD

Version number: 04.00

Valid from: 31 January 2022

Review date: 31 January 2024

Expiry date: 30 January 2025

**The UK Health Security Agency (UKHSA) has developed this PGD for local authorisation**

Those using this PGD must ensure it is organisationally authorised and signed in Section 2 by an appropriate authorising person, relating to the class of person by whom the product is to be supplied, in accordance with the Human Medicines Regulations 2012 (HMR2012)[[1]](#footnote-1). **The PGD is not legal or valid without signed authorisation in accordance with** [**HMR2012 Schedule 16 Part 2**](http://www.legislation.gov.uk/uksi/2012/1916/schedule/16/part/2/made)**.**

Authorising organisations must not alter, amend or add to the clinical content of this document (sections 4, 5 and 6); such action will invalidate the clinical sign-off with which it is provided.

As operation of this PGD is the responsibility of commissioners and service providers, the authorising organisation can decide which staff groups, in keeping with relevant legislation, can work to the PGD. Sections 2, 3 and 7 must be completed and amended within the designated editable fields provided.

The final authorised copy of this PGD should be kept by the authorising organisation completing Section 2 for 25 years after the PGD expires. Provider organisations adopting authorised versions of this PGD should also retain copies for 25 years after the PGD expires.

**Individual practitioners must be authorised by name, under the current version of this PGD before working according to it.**

Practitioners and organisations must check they are using the current version of the PGD. Amendments may become necessary prior to the published expiry date. Current versions of UKHSA Chemical, Biological, Radiological and Nuclear (CBRN) PGDs for authorisation can be found from: <https://www.england.nhs.uk/ourwork/eprr/hm/>

Any queries regarding the content of this PGD should be addressed to: [NSAC@phe.gov.uk](mailto:NSAC@phe.gov.uk)

Enquiries relating to the availability of organisationally authorised PGDs and subsequent versions of this PGD should be directed to: insert local contact details

**Change history**

|  |  |  |
| --- | --- | --- |
| **Version number** | **Change details** | **Date** |
| PGD 2014/1 | Original template developed and ratified | 2 July 2014 |
| PGD 02.00 | 1. Put into the new PHE template format 2. For use in anthrax only, tularemia put in separate PGD 3. Clinical indications: “another biological agent” removed 4. Abbreviated lists of warnings and contra-indications included- these medicines must be offered in all cases where exposure to these biological agents may have occurred unless there are life-threatening contra-indications. 5. Interactions: advice simplified. 6. References updated. | 1 May 2016 |
| PGD 03.00 | 1. Put into the new PHE template format 2. References updated | 7 December 2018 |
| PGD 04.00 | 1. Addition of ‘following deliberate release’ to page 1, clinical indication and criteria for inclusion for clarity 2. Removal of concurrent administration of aminophylline and theophylline from exclusion criteria 3. Cautions: amended wording for additional advice / actions to be taken; initiate supply for renal impairment to avoid delay; other medications added 4. Addition of 100mg tablets 5. Amended dose and frequency of administration section 6. Additional information under drug interactions section and patient advice section 7. Minor rewording, layout and formatting changes for clarity and consistency with other UKHSA PGD templates | 31 January 2022 |

1. **PGD development**

This PGD has been developed by the following on behalf of the UKHSA:

|  |  |  |  |
| --- | --- | --- | --- |
| **Developed by:** | **Name** | **Signature** | **Date** |
| Pharmacist (Lead Author) | Jacqueline Lamberty  Lead Pharmacist Medicines Governance, UKHSA |  | 31 January 2022 |
| Doctor | Nick Gent  Consultant in Health Protection Emergency Response Department  Public Health England |  | 31 January 2022 |
| Registered Nurse | Kelly Stoker  Lead Immunisation Nurse Specialist, Immunisation and Vaccine Preventable Diseases Division, UKHSA |  | 31 January 2022 |

This PGD has been peer reviewed by the CBRN PGD Expert panel in accordance with the UKHSA PGD Policy. It has been agreed by the UKHSA Medicines Governance Group and ratified by the UKHSA Clinical Quality Oversight Board.

**Expert panel**

|  |  |
| --- | --- |
| **Name** | **Post** |
| Ruth Milton (Chair) | Senior Medical Adviser, Consultant in Public Health, Emergency Response Department, UKHSA |
| Nicholas Aigbogun | Consultant in Communicable Disease Control, Yorkshire and Humber Health Protection Team, UKHSA |
| Diane Ashiru-Oredope | Lead Pharmacist, HCAI, Fungal, AMR, AMU & Sepsis Division, UKHSA |
| Tim Brooks | Consultant Medical Microbiologist / Virologist, UKHSA |
| Rosie Furner | Community Services Pharmacist, East Sussex Healthcare NHS Trust |
| Jo Jenkins | Specialist Pharmacist (Patient Group Directions), Medicines Use and Safety Division, NHSEI |
| Michelle Jones | Principal Medicines Optimisation Pharmacist, NHS Bristol North Somerset and South Gloucestershire CCG |
| Craig Prentice | Advanced Paramedic Practitioner, Surrey and Sussex Healthcare NHS Trust |
| Rohini Manuel | Consultant Medical Microbiologist, UKHSA |

1. **Organisational authorisations**

The PGD is not legally valid until it has had the relevant organisational authorisation.

It is the responsibility of the organisation that has legal authority to authorise the PGD, to ensure all legal and governance requirements are met. The authorising body accepts governance responsibility for the appropriate use of the PGD.

Insert authorising body name authorises this PGD for use by the services or providers listed below:

|  |
| --- |
| Authorised for use by the following organisations and/or services |
|  |
| Limitations to authorisation |
| For instance any local limitations the authorising organisation feels they need to apply in-line with the way services are commissioned locally. This organisation does not authorise the use of this PGD by …. |

|  |  |  |  |
| --- | --- | --- | --- |
| Organisational approval (legal requirement) | | | |
| Role | Name | Sign | Date |
| Complete eg NHSEI Governance Lead, Medical Director |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Additional signatories according to locally agreed policy | | | |
| Role | Name | Sign | Date |
|  |  |  |  |
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Section 7 provides a practitioner authorisation sheet. Individual practitioners must be authorised by name to work to this PGD. Alternative practitioner authorisation sheets may be used where appropriate in accordance with local policy, but this should be an individual agreement, or a multiple practitioner authorisation sheet as included at the end of this PGD.

#### Characteristics of staff

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| --- | --- |
| **Qualifications and professional registration** | To be completed by the organisation authorising the PGD. For instance:   * nurses currently registered with the Nursing and Midwifery Council (NMC). * pharmacists currently registered with the General Pharmaceutical Council (GPhC). * Additional registered healthcare professionals to be added by organisation authorising the PGD   The practitioners above must also fulfil the [Additional requirements](#additional) detailed below.  Check [Section 2 Limitations to authorisation](#limitations) to confirm whether all practitioners listed above have organisational authorisation to work under this PGD |
| **Additional requirements** | Additionally, practitioners:   * must be authorised by name as an approved practitioner under the current terms of this PGD before working to it * must have undertaken appropriate training for working under PGDs for supply/administration of medicines * must have undertaken training appropriate to this PGD * must be competent in the use of PGDs (see [NICE Competency framework](https://www.nice.org.uk/guidance/mpg2/resources) for health professionals using PGDs). * must be familiar with the product and alert to changes in the Summary of Product Characteristics (SPC) * must be competent to assess the individual and discuss treatment options * must have access to the PGD and associated online resources. * should fulfil any additional requirements defined by local policy * insert any additional requirements   **The individual practitioner must be authorised by name, under the current version of this PGD before working according to it** |
| **Continued training requirements** | Insert any continued training requirements |

1. **Clinical condition or situation to which this PGD applies.**

|  |  |
| --- | --- |
| **Clinical condition or situation to which this PGD applies** | Chemoprophylaxis following a known or suspected deliberate release of plague (*Yersinia pestis*).  **Notes:** no follow on course for plague is required |
| **Criteria for inclusion** | Children aged from 4 weeks to less than 12 years of age following a known or suspected deliberate release of plague (*Yersinia pestis*)  The benefits of using ciprofloxacin to prevent the onset of disease outweigh the potential risks of using this medicine in children who should be given ciprofloxacin in the situation criteria set out above  Individuals with the following conditions are included because the benefits of taking the medicine outweigh any risks, but provide the recommended advice given under the [Cautions](#Cautions) section:   1. History of tendon disorder related to quinolone use 2. Conditions with risk factor for QT interval prolongation: 3. History of epilepsy 4. Myasthenia gravis 5. Vitamin K antagonist concomitant treatment (warfarin, phenindione and acenocoumarol) 6. Renal impairment – CKD stages 1-5 7. Other medications |
| **Criteria for exclusion[[2]](#footnote-2)** | Individuals are excluded from this PGD if:   1. They are aged 12 years or over 2. They are less than 4 weeks of age 3. They are known to be outside of weight range for age[[3]](#footnote-3) 4. They have a known history of severe allergic reaction to ciprofloxacin, other quinolones or to any of the listed excipients 5. They are taking tizanidine |
| **Ca****utions including any relevant action to be taken**  Continued overleaf  **Cautions including any relevant action to be taken**  (continued) | Ciprofloxacin must be offered in all cases where a known or suspected deliberate release of plague may have occurred, unless there are life-threatening contra-indications not to do so  Supply the chemoprophylaxis to individuals with the conditions listed below, because the benefits of taking the medicine outweigh any risks, but provide affected individuals the recommended advice  History of tendon disorder related to quinolone use:  *Advise to self-monitor for tendinitis. If tendinitis occurs, switch to doxycycline (see* [*Doxycycline*](https://www.england.nhs.uk/ourwork/eprr/hm/) *PGD) or, if contraindicated, refer to supervising doctor for consideration of amoxicillin or co-amoxiclav, as soon as reasonably possible.*  Conditions with risk factor for QT interval prolongation:   * acute myocardial infarction * bradycardia * congenital long QT syndrome * heart failure with reduced left ventricular ejection * history of symptomatic arrhythmias   *Warn to self-monitor for any exacerbation of symptoms If there is an exacerbation of symptoms, switch to doxycycline (see* [*Doxycycline*](https://www.england.nhs.uk/ourwork/eprr/hm/) *PGD) or, if contraindicated, refer to supervising doctor for consideration of amoxicillin or co-amoxiclav immediately.*   1. History of epilepsy:   *Warn to self-monitor for any increase in frequency or severity of seizures. If an increase in frequency or severity of seizures occurs, switch to doxycycline (see* [*Doxycycline*](https://www.england.nhs.uk/ourwork/eprr/hm/) *PGD) or, if contraindicated, refer to supervising doctor for consideration of amoxicillin or co-amoxiclav, as soon as reasonably possible.*   1. Myasthenia gravis:   *Warn to self-monitor for any increase severity of disease. If an increase in severity of disease occurs, switch to* *doxycycline (see* [*Doxycycline*](https://www.england.nhs.uk/ourwork/eprr/hm/) *PGD) or, if contraindicated, refer to supervising doctor for consideration of amoxicillin or co-amoxiclav, as soon as reasonably possible.*   1. Vitamin K antagonist concomitant treatment (warfarin, phenindione and acenocoumarol):   *Warn individual of increased risk of bleeding. Check INR and adjust dose of anticoagulant treatment weekly if necessary, as advised by an anticoagulant clinic or prescriber during long term ciprofloxacin use*.   1. Renal impairment: *Given the risk to benefit, initiate treatment at the doses specified under* [*Dose and frequency of administration*](#dose) *to all individuals with any severity of renal impairment to avoid delay* 2. Other medications:   *On the balance of risk to benefit, individuals taking medications which might interact with ciprofloxacin should normally receive chemoprophylaxis with ciprofloxacin if exposed to a biological agent. This includes methotrexate, theophylline, phenytoin, ciclosporin, clozapine and zolpidem. If a clinically significant interaction occurs or is reported, consider doxycycline (see* [*Doxycycline PGD*](https://www.england.nhs.uk/ourwork/eprr/hm/)*)* |
| **Action to be taken if the patient or carer declines prophylaxis** | Refer the individual to the supervising doctor  Advise the individual or their parent / carer of the possible consequences of declining prophylaxis and of alternative options  Advise about the protective effects of the prophylaxis, risks of infection, and disease complications  Advise on the need for vigilance for symptoms of the potential disease, recognising symptoms and the need to seek urgent medical attention should symptoms occur  Document the advice given and the decision reached |
| **Action to be taken if the patient is excluded**  **Action to be taken if the patient is excluded**  (continued) | Explain why they have been excluded  If they are aged 12 years or over, refer to the [Ciprofloxacin 500mg tablet PGD](https://www.england.nhs.uk/ourwork/eprr/hm/)  If they are aged less than 4 weeks of age, refer to the supervising doctor  If the child is under weight for their age range, refer to the supervising doctor. If a different dose of ciprofloxacin for their age range is required, a Patient Specific Direction (PSD) will be needed.  If they have a known history of severe allergic reaction to ciprofloxacin, other quinolones or to any of the listed excipients or they are taking tizanidine, consider doxycycline (see [Doxycycline PGD](https://www.england.nhs.uk/ourwork/eprr/hm/)).If doxycycline is excluded, refer the individual to the supervising doctor for consideration of amoxicillin or co-amoxiclav, which will need to be supplied under PSD. |

1. **Description of Treatment**

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| **Name, strength & formulation of drug** | Ciprofloxacin 100mg tablets, 250mg tablets, 500mg tablets, 250mg in 5ml suspension |
| **Legal category** | Prescription Only Medicine (POM) |
| **Black Triangle▼** | No |
| **Off-label use** | Yes: Ciprofloxacin tablets are not licensed for use in plague. [UK national guidance](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/712888/Chemical_biological_radiological_and_nuclear_incidents_clinical_management_and_health_protection.pdf) recommends its use  Where a product is recommended off-label consider, as part of the consent process, informing the individual/carer that the product is being offered in accordance with national guidance but that this is outside the product licence |
| **Route/method of administration** | Oral  Tablets should be swallowed whole with water, as this will help to prevent the formation of tiny crystals in the urine (crystalluria), and preferably on an empty stomach |
| **Dose and frequency of administration** | Doses to be taken twice a day - see dosage table below.   |  |  |  | | --- | --- | --- | | **Age** | **Milligrams (mg)** |  | | Less than 4 weeks of age | Excluded | | | 4 weeks to less than 10 weeks of age | 50mg twice a day | 1ml of 250mg in 5ml suspension twice a day | | 10 weeks to less than 9 months of age | 100mg twice a day | 2ml of 250mg in 5ml suspension twice a day | | 9 months to less than 2 years of age | 150mg twice a day | 3ml of 250mg in 5ml suspension twice a day | | 2 years to less than 4 years of age | 200mg twice a day | 4ml of 250mg in 5ml suspension twice a day or  **TWO** 100mg tablets twice a day | | 4 years to less than 8 years of age | 250mg twice a day | 5ml of 250mg in 5ml suspension twice a day or  **ONE** 250mg tablet twice a day | | 8 years to less than 12 years of age | 500mg twice a day | **TWO** 250mg tablets twice a day or  **ONE** 500mg twice a day tablet | |
| **Duration of treatment** | Seven (7) days |
| **Quantity to be supplied/ administered**  **Quantity to be supplied/ administered**  (continued) | **Suspension**: 1 x 100ml suspension should be supplied per child irrespective of dose.  A bottle of suspension must be discarded 14 days after reconstitution.  **100mg:** Children aged 2 years to less than 4 years of age: 28 tablets  **250mg tablets**: Children aged 4 years to less than 8 years: 14 tablets.  Children aged 8 years to less than 12 years: 28 tablets  **500mg tablets:** Children aged 8 years to less than 12 years: 14 tablets  **Note:** No follow on course is required  When supplying under a PGD, this must be a complete manufacturer’s original pack or over-labelled pre-packs. The individual’s name, the date and additional instructions must be written on the label at the time of supply. As split packs cannot be supplied, if an over-supply is required, individuals must be advised to take any remaining medicine to a community pharmacy for destruction. |
| **Additional information** | Ciprofloxacin suspension is the preferred formulation for young children because the tablets have a bitter taste  The suspension must be reconstituted according to the manufacturer’s instructions before handing to parent/carer or other responsible person  Supply an oral syringe with the suspension and instructions for using the syringe  Tablets (not suspension) should be issued to children aged 4 years and older unless they have medically confirmed swallowing difficulties  The suspension should not be administered through a naso-gastric tube because of the risk of blocking the tube. Refer to the supervising doctor  As the reconstituted suspension only lasts 14 days, any remaining solution to be taken to a community pharmacy for destruction |
| **Storage** | Store in original container below 25 oC  Reconstituted suspension may be stored in a refrigerator |
| **Disposal** | Any unused product or waste material should be disposed of in accordance with local arrangements |
| **Drug interactions** | Individuals taking tizanidine are excluded from this PGD  On the balance of risk to benefit, individuals taking other medications which might interact with ciprofloxacin should normally receive chemoprophylaxis with ciprofloxacin if exposed to a biological agent. This includes methotrexate, theophylline, phenytoin, ciclosporin, clozapine and zolpidem. If a clinically significant interaction occurs or is reported, consider doxycycline (see [Doxycycline PGD](https://www.england.nhs.uk/ourwork/eprr/hm/))  See [Cautions](#Cautions) for advice for individuals taking vitamin K analogues  A detailed list of drug interactions is available in the [SPC](http://www.medicines.org.uk/emc/) |
| **Identification & management of adverse reactions**  Continued overleaf  **Identification & management of adverse reactions**  (continued) | Most commonly nausea and diarrhoea  Ciprofloxacin may affect reaction times and may make the child less alert  Other side effects are classified as uncommon to very rare  If any side effects become serious severe or prolonged, or if the parent / carer notices any side effects not listed in the Patient Information leaflet, children should not stop antibiotic treatment, but the parent / carer should contact their local GP or pharmacist  Tendon inflammation and rupture may occur with ciprofloxacin. Such reactions have been observed particularly in those treated concurrently with corticosteroids. If there is pain or inflammation, **individuals should not stop antibiotic treatment**, but must see their GP at the earliest opportunity to change to doxycycline, amoxicillin or co-amoxiclav.  A detailed list of adverse reactions is available in the [SPC](http://www.medicines.org.uk/emc/) |
| **Reporting procedure of adverse reactions** | All suspected adverse reactions in children should be reported using the [Yellow Card](http://yellowcard.mhra.gov.uk/) system or search for MHRA Yellow Card in the Google Play or Apple App Store  Any serious adverse reaction to the drug should be documented in the individual’s record  Alert the supervising doctor in the event of a serious adverse reaction, document in the individual’s record and inform the individual’s GP |
| **Written information to be given to patient or carer** | Supply marketing authorisation holder's Patient Information Leaflet (PIL)  The additional information leaflet covering the use of ciprofloxacin in response to known or suspected exposure to a biological agent should also be provide  An information leaflet explaining how to use and clean the oral syringe |
| **Patient advice /follow up treatment**  Continued overleaf  **Patient advice /follow up treatment**  (continued) | Explain the treatment  Ensure the parent / carer is aware of the need for the child to maintain adequate fluid intake  Advise the parent / carer the child should:   * not take indigestion remedies or medicines containing calcium, magnesium, aluminium, iron or zinc, 1-2 hours before or 4 hours after taking the medicine * not take with dairy products (for instance milk, yoghurt) or mineral-fortified fruit-juice (for instance calcium-fortified orange juice) * space the doses evenly throughout the day * keep taking this medicine until the course is finished, unless they are told to stop   **For suspension**: Inform the parent / carer there may be suspension remaining after the seven day course and to take any remaining unused suspension to a community pharmacy for disposal  **For the tablets**: Inform the parent / carer:   * these should be swallowed whole with water, as this will help to prevent the formation of tiny crystals in the urine (crystalluria), and preferably on an empty stomach * any unused tablets should be taken to a community pharmacy for disposal   Inform parent / carer:   * for babies receiving milk feeds, to space the doses in the mid period between expected feed times * of possible side effects and their management * to read the PIL leaflet before giving the antibiotic and to seek medical advice if side effects, including painful or inflamed joints, or any other unexplained side effects on health are experienced * the medicine can make the skin more sensitive to direct sunlight. Children should avoid exposure to excessive sunlight or use high SPF sunblock if prolonged exposure to the sun is unavoidable   For individuals with conditions listed in the [Cautions](#Cautions) section, provide the additional recommended advice. |
| **Records** | Record:   * whether valid informed consent was given * name of individual, address, date of birth, weight if known and GP with whom the individual is registered (or record where an individual is not registered with a GP) * name of member of staff who supplied the product * name and brand of product * date of supply * dose, form and route of administration of product * quantity supplied * batch number and expiry date * advice given including advice given if excluded or declines treatment * record supplied via PGD * records should be signed and dated   All records should be clear, legible and contemporaneous  Contact details for the individual must be recorded. Local arrangements must ensure that contact is made between the designated centre and all individuals to discuss an alternative antibiotic, in case this is needed.  A computerised or manual record of all individuals receiving treatment under this PGD should also be kept for audit purposes in accordance with local policy. All records should be clear, legible and contemporaneous. |

#### Key references

|  |  |
| --- | --- |
| **Key references** | * [Ciprofloxacin Summary of Product Characteristics](http://www.medicines.org.uk/emc/) accessed December 2021 * [Chemical, biological, radiological and nuclear incidents: clinical management and health protection 2018](https://www.gov.uk/government/publications/chemical-biological-radiological-and-nuclear-incidents-recognise-and-respond) * [British National Formulary for Children](https://bnfc.nice.org.uk/about/approximate-conversions-and-units.html) (BNFc) accessed December 2021 * [NICE Medicines Practice Guideline 2 (MPG2): Patient Group Directions](https://www.nice.org.uk/guidance/mpg2) updated 27 March 2017 * [NICE MPG2 Patient group directions: competency framework for health professionals using patient group directions](https://www.nice.org.uk/guidance/mpg2/resources) updated 27 March 2017 * [Health Technical Memorandum 07-01: Safe Management of Healthcare Waste.](https://www.england.nhs.uk/estates/health-technical-memoranda/) Department of Health 20 March 2013 |

1. **Individual practitioner authorisation sheet**

By signing this PGD you are indicating you agree to the contents and you will work within it

PGDs do not remove inherent professional obligations or accountability

It is the responsibility of each professional to practice only within the bounds of their own competence

**Practitioner**

**I confirm that I have read and understood the content of this Patient Group Direction and that I am willing and competent to work to it within my professional code of conduct**

Signed……………………………….………………………….…..Date……….….…………..............

Name (Print)…………….…………..………….………………………………………….…….............

Designation……………………………………………………………….…..………………................

**Authorising manager**

Manager to give authorisation on behalf of **insert name of organisation** for the named healthcare professional who has signed the PGD

Signed…………………………………….………………………. Date………………………..........

Name (Print)………………………..…………………………………….……………..………..........

Designation………………………………………………………………..…………….…….............

**Note to authorising manager**

By signing above you are confirming that you have assessed the staff member as competent to work under this PGD and that they have the organisational approval to do so

You must give this signed PGD to each authorised practitioner as it shows their authorisation to use the PGD

1. This includes any relevant amendments to legislation (such as [2013 No.235](http://www.legislation.gov.uk/uksi/2013/235/contents/made), [2015 No.178](http://www.legislation.gov.uk/nisr/2015/178/contents/made), [2015 No.323](http://www.legislation.gov.uk/uksi/2015/323/contents/made) and [2020 No.1125](https://www.legislation.gov.uk/uksi/2020/1125/contents/made) [↑](#footnote-ref-1)
2. Exclusion under this Patient Group Direction does not necessarily mean the antibiotic is contraindicated, but it would be outside its remit and another form of authorisation will be required [↑](#footnote-ref-2)
3. See [British National Formulary for Children](https://bnfc.nice.org.uk/about/approximate-conversions-and-units.html) (BNFc) [↑](#footnote-ref-3)