NHS Lincolnshire

Prescribing and Clinical Effectiveness Bulletin

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What's new this month:

- **Pending publication of the American Food and Drugs Administration (FDA) review, liraglutide (Victoza) has been designated RED-RED (see page 2).**
- **A recent meta-analysis has concluded that regular vitamin D supplementation helps to reduce the incidence of falls in people aged 65 and over (see page 4).**
- **NICE have issued a Clinical Guideline on low back pain (see page 6).**
- **New guidelines on the treatment of commonly occurring infections in primary care are now available (see page 8).**

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This bulletin has been created specifically to convey details of decisions taken at the Prescribing and Clinical Effectiveness Forum (PACEF) to all stakeholders across the Lincolnshire Healthcare Community in both primary and secondary care. Back issues of the *PACE Bulletin* and other PACEF publications are available through the NHS Lincolnshire website (www.lpct.nhs.uk).

SUMMARY OF PACEF DECISIONS: SEPTEMBER 2009 UPDATE

Drug	Indication(s)	Traffic Light Status
Liraglutide 6mg/ml injection (Victoza)	Licensed for the treatment of adults with type 2 diabetes mellitus in combination with either metformin or a sulphonylurea (in patients with insufficient glycaemic control despite maximal tolerated dose of monotherapy with metformin or a sulphonylurea) or in triple therapy with metformin and a sulphonylurea or metformin and a thiazolinedione (glitazone) in patients with insufficient glycaemic control despite dual therapy.	RED-RED (subject to early review)
Pemetrexed infusion (Alimta)	Licensed in combination with cisplatin for the first line treatment of locally advanced or metastatic non-small cell lung	RED

	cancer other than predominantly squamous cell histology.	
Sunitinib caps (Sutent)	Licensed for the treatment of unresectable and/or metastatic malignant gastrointestinal stromal tumour after failure of imatinib due to resistance or intolerance.	RED
Sunitinib caps (Sutent)	Licensed for the treatment of advanced and/or metastatic renal cell carcinoma	RED
Ustekinumab inj (Stelara)	Licensed for the treatment of moderate to severe plaque psoriasis where other therapies, including ciclosporin, methotrexate and PUVA, are ineffective, not tolerated or contraindicated.	RED

RED-RED: This signifies that a product is **not recommended** for prescribing in **either** primary or secondary care. All new products are classified as RED-RED pending assessment by PACEF.
RED: This signifies that a product has been approved for use within secondary care, tertiary care or a primary care hosted specialist service only and **should not be routinely prescribed in primary care**. RED drugs may be used within ULHT or LPFT subject to approval for use within each Trust. ULHT and LPFT reserve the right to determine whether or not RED drugs will be used within their Trusts. RED classification does not automatically signify that a drug will be available within secondary/tertiary care.
AMBER: This signifies that a drug has been approved for use in primary care **subject to specialist initiation; a shared care guideline (SCG) may also be required**. The main purpose of the SCG will be to clearly define both specialist and GP responsibilities. Not all AMBER drugs that require SCGs are currently covered by formal documents; PACEF are working to rectify this.
GREEN: This signifies a product that is **approved for initiation in either primary or secondary care**. Specialist initiation and shared care guidelines are not considered necessary.

REPORTING INCIDENTS TO THE NATIONAL PATIENT SAFETY AGENCY (NPSA)
The NPSA are keen to encourage the anonymous reporting of patient safety errors and systems failures both from healthcare professionals and patients. The National Reporting and Learning System (NRLS) has been set up to facilitate this process. Healthcare professionals can either report patient safety incidents through their local risk management scheme or directly into the NRLS using the eForm on the NPSA website. Please access www.npsa.nhs.uk for more information. **All healthcare professionals are encouraged to report incidents, errors and systems failures; the aim is to help the NHS to learn from things that go wrong.**

NEW DRUG ASSESSMENT: LIRAGLUTIDE INJECTION 6MG/ML (VICTOZA)

Liraglutide (Victoza) is the second glucagon like peptide 1 (GLP-1) analogue to receive a UK product license; the first licensed product in this class was exenatide (Byetta) which was approved for use by PACEF within strict initiation criteria last year (see *PACE Bulletin*, Vol 3, No 9 (August 2009) for most recent guidance). Liraglutide is **licensed for the treatment of adults with type 2 diabetes mellitus in combination with either metformin or a sulphonylurea** (in patients with insufficient glycaemic control despite maximal tolerated dose of monotherapy with metformin or a sulphonylurea) or in **triple therapy with metformin and a sulphonylurea or metformin and a thiazolinedione (glitazone)** in patients with insufficient glycaemic control despite dual therapy. It is available as a pre-filled pen and is administered as a once daily subcutaneous injection, into the abdomen, thigh or upper arm.

PACEF reviewed a series of randomised clinical trials and open label studies, known as the Liraglutide Effect and Action in Diabetes (LEAD) studies, which compare the glycaemic control of liraglutide as monotherapy or as part of combination therapy against other oral anti-diabetic drugs, insulin glargine or exenatide. The primary

outcome from all of these trials was the change in HbA1c levels from baseline; the percentage of patients achieving the American Diabetic Association target of an HbA1c of <7.0% was also recorded. Only disease orientated outcomes were considered. At present, there are no studies that evaluate the effect of liraglutide on patient orientated outcomes such as incidence of cardiovascular events and effect on quality of life or mortality. As discussed in a previous issue of the *PACE Bulletin*, there is a similar lack of outcome data related to the effects of exenatide. An overall review of the trial results shows that, on average, 35-58% of patients achieved HbA1c levels of <7% with average reductions of HbA1c levels of between 1 and 1.5. On this basis, PACEF were satisfied as to the effectiveness of liraglutide.

LEAD 6 is a short-term (26 weeks), open label study that provides a direct head-to-head comparison between once daily liraglutide and twice daily exenatide. In this study, liraglutide emerges as more effective than exenatide in terms of HbA1c lowering and better tolerated; weight loss was similar in both groups. However, patient numbers were small, duration was short and the study was not powered to assess rare adverse events. Further long term data is required to assess the long term benefits and safety of liraglutide.

The most frequently reported adverse effects with liraglutide are nausea and diarrhoea, although vomiting; constipation, abdominal pain and dyspepsia are also common. These gastrointestinal adverse effects are more frequent at the start of therapy and usually diminish within a few days or weeks; they mirror similar effects that occur with exenatide. Other commonly reported adverse effects include headache, nasopharyngitis and hypoglycaemia (particularly frequent if liraglutide is used in combination with a sulphonylurea). An increased incidence in thyroid adverse events was reported in the trials in comparison to patients treated with either placebo or an active comparator. The incidence rates were: thyroid neoplasms 0.5%, increased serum calcitonin 1% and goitres 0.8% in patients treated with liraglutide. The Summary of Product Characteristics (SPC) for the product includes a precautionary warning on use in people with pre-existing thyroid disease. In addition, safety studies conducted in rodents have shown increased levels of thyroid C-cell tumours. This data had caused sufficient concern for the American Food and Drug Administration (FDA) to delay their decision on liraglutide until the 4th quarter of 2009. Recent clinical data reported at the European Association for the Study of Diabetes in September 2009 showed that, from studies involving 4,600 people treated with liraglutide, there was no significant evidence of any link with thyroid cancer. An ongoing post marketing trial which is gathering information on the effect of liraglutide on cardiovascular outcomes will also collect reports on the incident of malignancies including thyroid neoplasms.

A cost comparison between liraglutide and exenatide reveals that liraglutide is more expensive:

Drug	Daily dose range	Cost per pack	Daily cost	Annual cost
Liraglutide 6mg/ml	1.2mg – 1.8mg daily	2x3ml £78.48 3x3ml £117.72	1.2mg - £2.61 £1.8mg - £3.92	1.2mg £950 1.8mg £1,427
Exenatide 5mcg	5mcg twice daily	60 dose pen £68.24	5mcg - £2.27	£826
Exenatide 10mcg	10mcg twice daily	60 dose pen £68.24	10mcg £2.27	£826

PACEF Recommendation:
PACEF recognize the potential for once daily liraglutide as an alternative to exenatide, but remain concerned over unresolved safety issues. As a result of this, a final decision on liraglutide has been deferred until the results of the American FDA review are published. In the meantime, liraglutide (Victoz) is designated RED-RED. Exenatide (Byetta) remains GREEN subject to NICE initiation criteria.

NEW TRIALS IN BRIEF

VITAMIN D AND FALLS

This is a meta-analysis of 8 studies that found that vitamin D at doses of 700 to 1000i.u. per day reduced falls by 19% within 2 to 5 months of initiation in people aged 65 years or greater. No association with improved outcome was found for lower doses of vitamin D. Prescribers are reminded of existing PACEF guidance on the use of calcium and vitamin D:

PACEF Recommendations:
Prescribers should consider the use of calcium and vitamin D supplementation in all women receiving osteoporosis treatment where calcium intake and vitamin D stores are inadequate. Calcium and vitamin D supplementation should also be considered for the elderly in care homes at risk of fracture and in patients on long-term oral steroids with poor dietary intake. The role of vitamin D supplementation in the prevention of falls has been supported by a recent meta-analysis (see above) that has reported a 19% reduction in falls in the over 65s taking vitamin D in doses between 700 and 1000i.u. per day. Only calcium and vitamin D formulations containing an evidence based dose of each component should be prescribed (i.e. at least 1000mg of calcium and 800i.u. of vitamin D daily; see cost comparison below).

Product	Licensed Indication	Price (28 days)
Adcal –D3 (calcium 600mg/ vit D 400IU) Chewable tablets	**Adjunct in osteoporosis. 1 tablet twice daily**	**£3.89**
Adcal-D3 Dissolve (calcium 600mg/Vit D 400iu) Effervescent tablets	Adjunct in osteoporosis. 1 tablet twice daily	£4.99
Cacit D3 Effervescent granules (calcium 500mg/ Vit D 440IU)	Adjunct in osteoporosis. 2 sachets daily	£7.73
Calceos Chewable tabs (Calcium 500mg/ Vit D 400IU	**Adjunct in osteoporosis. 1 tablet twice daily**	**£3.44**
Calcichew D3 Forte Chewable tablets (calcium 500mg, Vit D 400IU)	Adjunct in osteoporosis. 1 tablet twice daily	£4.20
Calfovit D3 Sachets (calcium 1200mg/Vit D3 800IU)	Adjunct in osteoporosis. 1 sachet daily	£4.04

(Appropriate first line options are highlighted in bold)

Reference: Bischoff-Ferrari HA et al. Fall prevention with supplemental and active forms of vitamin D: a meta-analysis of randomised controlled trials. *BMJ* 2009;339:b3692 doi:10.1136/bmj.b3692

NICE TECHNOLOGY APPRAISAL 179: *SUNITINIB FOR THE TREATMENT OF GASTROINTESTINAL STROMAL TUMOURS* (SEPTEMBER 2009)

The key recommendations are as follows:

Sunitinib is recommended, within its licensed indication, as a treatment option for people with unresectable and/or metastatic malignant gastrointestinal stromal tumours (GIST) if:

- imatinib treatment has failed because of resistance or intolerance, and
- the drug cost of sunitinib (excluding any related costs) for the first treatment cycle will be met by the manufacturer

The use of sunitinib should be supervised by cancer specialists with experience in treating people with unresectable and/or metastatic malignant gastrointestinal stromal tumours after failure of imatinib treatment because of resistance or intolerance.

PACEF Recommendation:
Sunitinib (Sutent) is designated RED for the treatment of unresectable and/or metastatic malignant gastrointestinal stromal tumour after failure of imatinib due to resistance or intolerance. It is already designated RED for the treatment of advanced and/or metastatic renal cell carcinoma.

NICE TECHNOLOGY APPRAISAL 180: USTEKINUMAB FOR THE TREATMENT OF ADULTS WITH MODERATE TO SEVERE PSORIASIS (SEPTEMBER 2009)

The key recommendations are as follows:

Ustekinumab is recommended as a treatment option for adults with plaque psoriasis when the following criteria are met.

- The disease is severe, as defined by a total Psoriasis Area Severity Index (PASI) score of 10 or more **and** a Dermatology Life Quality Index (DLQI) score of more than 10.
- The psoriasis has not responded to standard systemic therapies, including ciclosporin, methotrexate and PUVA (psoralen and long-wave ultraviolet radiation), or the person is intolerant of or has a contraindication to these treatments.
- The manufacturer provides the 90mg dose (two 45mg vials) for people who weigh more than 100 kg at the same total cost as for a single 45 mg vial.

Ustekinumab treatment should be stopped in people whose psoriasis has not responded adequately by 16 weeks after starting treatment. An adequate response is defined as either:

- A 75% reduction in the PASI score (PASI 75) from when treatment started **or**
- A 50% reduction in the PASI score (PASI 50) and a 5-point reduction in the DLQI score from when treatment started.

PACEF Recommendation:
Ustekinumab injection (Stelara) is designated RED for the treatment of moderate to severe plaque psoriasis where other therapies, including ciclosporin, methotrexate and PUVA, are ineffective, not tolerated or contraindicated.

NICE TECHNOLOGY APPRAISAL 181: *PEMETREXED FOR THE FIRST-LINE TREATMENT OF NON-SMALL-CELL LUNG CANCER* (SEPTEMBER 2009)

The key recommendations are as follows:

- **Pemetrexed in combination with cisplatin is recommended as an option for the first-line treatment of patients with locally advanced or metastatic non-small-cell lung cancer (NSCLC) only if the histology of the tumour has been confirmed as adenocarcinoma or large-cell carcinoma.**

PACEF Recommendation:
Pemetrexed infusion (Alimta) is designated RED for the first-line treatment of patients with locally advanced or metastatic NSCLC.

NICE CLINICAL GUIDELINE 88: *LOW BACK PAIN* (MAY 2009)

This Clinical Guideline covers the early treatment and management of persistent or recurrent low back pain that has lasted for more than 6 weeks, but for less than 12 months. Non-specific low back pain is defined as tension, soreness and/or stiffness in the lower back region for which it is not possible to identify a specific cause. Joints, discs and connective tissue may contribute to symptoms. Low back pain is common, affecting one-third of the UK adult population each year; around 20% of those will consult their GP.

The key recommendations are as follows:

Information, education and patients' preferences

- Provide people with **advice and information to promote self-management.**
- Offer one of the following treatment options, taking into account patient preference: an **exercise programme**, a course of **manual therapy**, or a course of **acupuncture**. Consider offering another of these options if the chosen treatment does not result in satisfactory improvement.

Physical activity and exercise

- **Advise people with low back pain to exercise; staying physically active is likely to be beneficial.**
- Consider offering a **structured exercise programme** tailored to the person comprising up to a maximum of eight sessions over a period of up to 12 weeks. A group supervised exercise programme is preferred, but one-to-one may be offered if a group programme is not suitable for the individual.
- Exercise programmes may include: aerobic activity, movement instruction, muscle strengthening, postural control and stretching.

Manual therapy

- Consider offering a course of **manual therapy**, including **spinal manipulation**, comprising up to a maximum of 9 sessions over a period of up to 12 weeks.
- Manual therapies include: spinal manipulation, spinal mobilisation and massage.

Other non-pharmacological therapies

- Do not offer laser therapy, interferential therapy, therapeutic ultrasound, lumbar supports, traction, transcutaneous electrical nerve stimulation (TENS)

Invasive procedures

- Consider offering a course of **acupuncture** comprising up to a maximum of 10 sessions over a period of up to 12 weeks.

- Do not offer injections of therapeutic substances into the back for non-specific low back pain.

Combined physical and psychological treatment programme

- Consider referral for a **combined physical and psychological treatment programme**, comprising around 100 hours over a maximum of 8 weeks for people who: (1) have received at least one less intensive treatment and (2) have high disability and/or significant psychological distress.
- Combined physical and psychological treatment programmes should include cognitive behavioural therapy and exercise.

Assessment and imaging

- Do not offer X-Ray of the lumber spine for the management of non-specific low back pain.
- Only offer an MRI scan for non-specific low back pain within the context of a referral for an opinion on spinal fusion.

Referral for surgery

- Consider referral for an opinion on spinal fusion for people who: (1) have completed an optimal package of care (including combined physical and psychological treatment) and (2) still have severe non-specific low back pain for which surgery may be considered.

Pharmacological therapies

- First line therapy is **regular paracetamol**.

PACEF Recommendation:
Regular paracetamol is endorsed as a first line treatment option in regular doses if necessary (i.e. 2 tablets every 4 to 6 hours up to a maximum of 8 tablets in 24 hours). Soluble paracetamol should be reserved for those patients with genuine swallowing difficulties.

- When paracetamol alone provides insufficient pain relief offer: **NSAIDs and/or weak opioids** (e.g.codeine, dihydrocodeine, co-codamol, co-dydramol).
- Consider the risk of side effects from NSAIDs especially in the elderly and those at increased risk.
- When offering treatment with an oral NSAID/COX-2 inhibitor, the first choice should be either a standard NSAID or a COX-2 inhibitor. In either case, **people over 45 should be co-prescribed a PPI** (of the lowest acquisition cost).

PACEF Recommendations:
Oral NSAIDs and Cox-2 inhibitors are second line options that should only be used when absolutely necessary; the lowest effective dose for the shortest duration should be used. In terms of product selection, low dose ibuprofen (e.g. 1200mg per day) has the lowest GI risk of standard NSAIDs. Low dose ibuprofen and naproxen (1000mg per day) have a lower thrombotic risk than other NSAIDs and coxibs; epidemiological data does not suggest an increased risk of myocardial infarction (MI) with either agent.

PACEF recommend that all repeat and ongoing oral NSAID and Cox-2 inhibitor prescribing in people aged 55 and over should be supported with a concurrent PPI. Either generic lansoprazole capsules (recommended dose 15mg to 30mg daily) or generic omeprazole capsules (recommended dose 20mg daily) should be prescribed. These recommendations do not extend to acute or infrequent scripts.

- Consider offering **tricyclic antidepressants** (e.g. amitriptyline, nortriptyline) if other medications provide insufficient pain relief. Start at a low dose and increase up to the maximum antidepressant dosage until therapeutic effect is achieved or unacceptable side effects prevent further increase.
- Consider **strong opioids** (e.g. buprenorphine, diamorphine, fentanyl and oxycodone) for short-term use for people in severe pain.
- Consider referral for specialist assessment for people who may require prolonged use of strong opioids.
- Give due consideration to the risk of opioid dependence and side effects for both strong and weak opioids.
- Do not offer selective serotonin reuptake inhibitors (SSRIs) for treating pain.

***GUIDELINES FOR THE TREATMENT OF COMMONLY OCCURRING INFECTIONS IN PRIMARY CARE* (WINTER 2009/10)**

Updated local guidance for primary care prescribers on the treatment of commonly occurring infections in primary care will be circulated this month. A brief summary of key recommendations is included as part of this *Bulletin*.

Most recently the European Centre of Disease Prevention and Control (ECDC) have warned of the dangers of increasing antibiotic resistance compromising the viability of many common operations. For example, rates of *E.coli* infections showing signs of resistance have trebled since the turn of the century. In Lincolnshire, recent monthly figures for Extended Spectrum Beta Lactamase (ESBL) producing *E.coli* have exceeded 20 and even 30 cases a month.

Primary care prescribers are urged to help to combat this increasing problem by ensuring that antibiotic prescribing is reserved only for those cases where an antibiotic is clearly indicated. Last winter, antibiotic prescribing volume in most practices was lower than the previous winter; prescribers are urged to ensure that this trend continues. The appended summary table gives key point advice on alternative approaches to antibiotic prescribing. The full text Guideline provides further detail and will be circulated separately.

Acknowlegements

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GUIDELINES FOR THE TREATMENT OF COMMONLY OCCURRING INFECTIONS IN LINCOLNSHIRE PRIMARY CARE: WINTER 2009/10

This is an abbreviated version of a much more comprehensive and detailed guideline. Further guidance should be sought in the full text.

Infection	Recommended Agents	Notes
Pharyngitis / sore throat / tonsillitis Average length of illness is 1 week	Most sore throats are viral **Antibiotics unnecessary in many cases** Phenoxymethylpenicillin **500mg four times a day or 1g twice daily for 7-10 days depending on the severity of the infection** If allergic to penicillin: **Clarithromycin** 250 – 500mg twice daily for 10 days	**Consider a** 'no antibiotic' **or** 'delayed antibiotic strategy' **and ensure that patients know that the average length of the illness is 1 week.** **Patients with 3 of 4 Centor criteria (presence of tonsillar exudate, tender anterior cervical lympadenopathy or lymphadenitis, presence of fever and an absence of cough) may benefit from antibiotics.**
Acute Otitis Media (AOM) Antibiotics should not be routinely prescribed for AOM Average length of illness 4 days	**Antibiotics unnecessary in many cases** First Line Amoxicillin **40mg/kg/day in 3 divided doses for 5 days** **Maximum 1g three times a day** **If allergic to penicillin:** Erythromycin (5 days) **Up to 2 years: 125mg four times a day; 2-8 years: 250mg four times a day; Other: 250-500mg four times a day** Second Line **Co-amoxiclav** (5 days) or if allergic to penicillins **azithromycin** (3 days)	**Depending on severity, consider prescribing antibiotics for children < 2 years with bilateral AOM and for children with otorrhoea.** **Children who do not meet these criteria should not be given antibiotics. Use a** 'no antibiotic' **or** 'delayed antibiotic' **strategy.** **Reassure patients/carers that antibiotics are not needed immediately because they will make little difference to symptoms and may have side effects (e.g. diarrhoea, vomiting and rash).** **Use analgesia for symptom relief**
Acute Rhinosinusitis Antibiotics should not be routinely prescribed for sinusitis The average duration of symptoms is 2½ weeks	**Antibiotics unnecessary in many cases** First Line (7 days) **Amoxicillin** 500mg three times daily or **doxycycline** 200mg stat followed by 100mg daily or **clarithromycin** 250mg to 500mg twice daily **or** phenoxymethylpenicillin **250mg four times daily or 500mg twice daily** Third Line Options **If there is no improvement following treatment with a first line antibiotic, an alternative first line agent should be tried before commencing with either of the third line options.** **Co-amoxiclav** 625mg three times a day for 7 days or **Ciprofloxacin** 250mg to 500mg twice daily for 7 days plus **metronidazole** 400mg three times a day for 7 days.	**Many cases of sinusitis are of viral origin.** NICE CG 69 Respiratory Tract Infections recommends using a '**no antibiotic prescribing strategy'** or '**delayed antibiotic prescribing strategy'.** Patients with acute sinusitis who are likely to be at risk of developing complications should be offered an immediate antibiotic prescription in the following situations: (1) if the patient is systemically very unwell; (2) if the patient has symptoms and signs suggestive of serious illness and/or complications (3) if the patient is at high-risk of serious complications due to pre-existing co-morbidity (e.g. significant heart, lung, renal, liver or neuromuscular disease, immunosuppression, cystic fibrosis and young children born prematurely).

Infection	Recommended Agents	Notes
Acute cough / bronchitis Average duration of cough is 3 weeks	**In primary care antibiotics have marginal benefits in otherwise healthy adults.** First Line **Amoxicillin** 500mg three times a day for 5 days **or** doxycycline **200mg stat followed by 100mg daily for 5 days.**	**Routine antibiotic treatment of uncomplicated acute bronchitis is not recommended regardless of duration of cough.** Antibiotics should be prescribed for patients > 65 years with acute cough and 2 or more of the following, or older than 80 years with one or more of the following: - hospitalisation in previous year - type 1 or type 2 diabetes mellitus - history of congestive heart failure - current use of oral steroids Antibiotics should be prescribed for patients who are - systemically very unwell, - have symptoms or signs suggestive of serious illness and/or complications (particularly pneumonia), - are at high risk of serious complications because of pre-existing co-morbidity. This includes patients with significant heart, lung, renal, liver or neuromuscular disease, immunosuppression, cystic fibrosis and young children born prematurely.
Community acquired pneumonia	First line **Amoxicillin** 500mg – 1g three times daily for up to 10 days or **clarithromycin** 500mg twice daily for up to 10 days Second line (up to 10 days) **Oxytetracycline** 250 – 500mg four times a day or **doxycycline** 200mg stat/100mg daily	**Start antibiotics immediately** Use CRB-65 to assess risk. If no response in 48 hrs add clarithromycin first line, or tetracycline to cover Mycoplasma infection (rare in >65y)
Acute exacerbation of COPD	Prescribe antibiotics if increased dyspnoea and sputum is more purulent than usual. First Line **Amoxicillin** 500mg three times a day for 5 days **or** doxycycline **200mg stat followed by 100mg daily for 5 days** **If the patient is allergic to penicillin and a tetracycline is contraindicated, use** clarithromycin **500mg twice daily for 5 days** **Second Line** **If there is a clinical failure to first line antibiotics use:** co-amoxiclav **625mg three times daily for 5 days**	
Uncomplicated UTI in men or women (i.e. no fever or flank pain)	**If ≤ 2 symptoms of UTI (dysuria, urgency,frequency, polyuria, suprapubic tenderness, haematuria) or symptoms mild dipstick test urine to exclude UTI (-ve nitrite & leucocyte has 95% negative predictive value)** **First Line** **Trimethoprim** 200mg twice daily or **nitrofurantoin** 50mg tabs/caps every 6 hours with food or MR capsules 100mg twice daily. Treatment length **3 days in women** and **7 days in men**. Second Line Dependent upon sensitivities.	
UTI in pregnancy	Send MSU for culture. First Line **Nitrofurantoin** 50mg tabs/caps every 6 hours with food or MR capsules 100mg twice daily for 7 days or **trimethoprim** 200mg twice daily for 7 days Second Line **Cefalexin** 500mg twice daily for 7 days or **amoxicillin** 250mg three times a day for 7 days	