GP AND COMMUNITY GUIDELINES FOR THE TREATMENT OF CHEMOTHERAPY COMPLICATIONS:

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<tr>
<th>Circulation</th>
<th>Version</th>
<th>Author</th>
<th>Date</th>
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<tbody>
<tr>
<td>CB, MT, CH, KW, JS, SD</td>
<td>draft</td>
<td>CDikken</td>
<td>18 October 2010</td>
</tr>
<tr>
<td>Chemo group</td>
<td>Final 10</td>
<td>CDikken</td>
<td>November 29 2010</td>
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Quality Measure: 3C- 130

Approved by the Network Chemotherapy Group

************
Chair Dr Joanna Simpson

Acknowledgements: Central South Coast Cancer Network; Kent Cancer Network; SWSH Cancer Network.

Written by Clare Dikken on behalf of the SCN
Ref: GP guidelines vs final10.0 November 2010
Review: November 2012
CONTENTS:
Introduction....................................................................................................................3
24-Hour Help-Lines for Chemotherapy Advice for Acute Hospitals with Sussex
Cancer Network ..............................................................................................................3
Intravenous Chemotherapy ............................................................................................4
Important Advice on Oral Chemotherapy .....................................................................4
Most Common Side Effects Following Chemotherapy..................................................5
Neutropenic Sepsis .........................................................................................................5
Nausea and Vomiting ......................................................................................................6
Diarrhoea/Constipation...................................................................................................6
Grading for Chemotherapy induced diarrhoea (NCI CTC toxicity rating scale): ....7
Constipation ..................................................................................................................7
Stomatitis ......................................................................................................................8
Other Less Common Side Effects ...................................................................................8
Urinary/bladder toxicity ...............................................................................................8
Palmar Plantar Erythrodysaesthesia (PPE) ..................................................................9
Extravasation ..................................................................................................................9
Joint pains ......................................................................................................................9
Thrombocytopenia and anaemia ..................................................................................9
Cardiac toxicity ............................................................................................................10
References .....................................................................................................................10
Appendix 1: List of emetogenicity of drugs; Antiemetic ladder ................................11
Appendix 2: Some of the More Common Chemotherapy Regimes and Drugs Used ....13
Appendix 3: HEAT raising awareness campaign for neutropenic sepsis ..................16
Introduction
Chemotherapy will result in adverse effects for the majority of patients. This document aims to provide some guidance on management of the most common toxicities. It has been compiled using information from other local networks. It will be revised on a bi-annual basis; any comments or suggestions for change will be gratefully received by clare.dikken@scn.nhs.uk or kingsley.wildman@scn.nhs.uk

All patients receiving chemotherapy from the 4 acute hospitals within the Sussex Cancer Network are encouraged to contact their hospital directly and immediately should they suffer any side effects. They are given 24 hour contact numbers and a rapid response card; which gives advice to non-specialist staff on neutropenic sepsis. The 24-hour contact telephone numbers for information and advice are listed below. The chemotherapy teams at each of the Trusts can be contacted for advice regarding your patient’s chemotherapy regime; please do not hesitate to contact them. There is always an oncologist on-call at the Royal Sussex County Hospital should advice be required contact switchboard and ask for the on-call oncologist.

24-Hour Help-Lines for Chemotherapy Advice for Acute Hospitals with Sussex Cancer Network:

Royal Sussex County Hospital, Brighton:
- Sussex Cancer Centre: (Mon-Fri 9.00am-5.00pm) 01273-696955 ext 4799. A Chemotherapy nurse will always be available to talk to.
- Howard 1 Ward (Out of Hours) 01273 696955 ext 4051, staffed by Oncology nurses - ask for the nurse in charge of the ward
- Haematology/ Oncology Ward: 01273-696955 ext 7413, direct line 01273-664771 –ask for nurse in charge of ward

Worthing Hospital:
- Medical Day Case Unit: (Mon-Fri 8.00-6.00) 01903-205111 ext 5450. A Chemotherapy nurse will always be available to talk to.
- Erringham Ward (out of hours) 01903 205111 ext 5510, staffed by medical and haematology nurses, who have had training in caring for oncology patients - ask for the nurse in charge of the unit

Eastbourne District General Hospital:
- Pevensey Day Unit: (Mon-Fri 8.00-6.00) 01323-435867. A Chemotherapy nurse will always be available to talk to.
- Pevensey Ward (out of hours) 01323-435866, staffed by haematology nurses who have experience in chemotherapy - ask for the nurse in charge of the unit

Conquest Hospital:
- McCartney Day Unit (Mon-Fri 9.00-5.00) direct line 01424-757030 A Chemotherapy nurse will always be available to talk to.
- Pevensey Ward (out of hours) 01323-435866, staffed by haematology nurses who have experience in chemotherapy - ask for the nurse in charge of the unit.

Written by Clare Dikken on behalf of the SCN
Ref: GP guidelines vs final10.0 November 2010
Review: November 2012
Intravenous Chemotherapy
Over the last decade intravenous chemotherapy has increased rapidly in use. The number of regimes available for individual tumour sites has increased and many more tumour sites are now suitable for chemotherapy due to new agents that have been developed. Systemic anti-cancer treatment has changed in nature over the last decade due to a better understanding of molecular biology. Besides traditional cytotoxic therapy there are targeted therapies such as monoclonal antibodies (e.g. Herceptin) and small molecules (e.g. Glivec). In addition, randomised controlled trials are increasing and the regimes are changing more frequently. This makes giving specific information for specific regimes challenging. Appendix 2 contains a list of the some of the most common regimes and drugs used and some of their common side effects. Should you wish for further specific information this can be obtained through the Sussex Cancer Network by contacting either Clare Dikken, Macmillan Senior Chemotherapy Nurse on 07876 745014 or clare.dikken@scn.nhs.uk or, Kingsley Wildman, Macmillan Network Pharmacist on 07500 097866 or kingsley.wildman@scn.nhs.uk.

Important Advice on Oral Chemotherapy
There are a number of oral anti-cancer agents now being used in treatment or cancer. Anticancer oral therapies fall into three different groups:

- Traditional cytotoxic drugs: these get into the cell and damage DNA to prevent cellular division.
- Hormonal therapies: these interfere with the release of hormones
- Small molecules: these block cell signalling processes and therefore interfere with growth

It is important to note that oral cytotoxic therapy carries the same risk as intravenous cytotoxic therapy. Oral chemotherapy can cause life threatening side effects such as neutropenic sepsis and diarrhoea. The National Patient Safety Agency released an alert on oral chemotherapy in 2008 warning of potential fatalities if incorrect doses of oral chemotherapy are prescribed. The same safe guards should be applied for oral chemotherapy as for intravenous chemotherapy. Within the Sussex Cancer Network GPs are advised against prescribing oral cytotoxic chemotherapy, the Acute Trusts are gradually bringing back ‘in-house’ the prescribing of oral chemotherapy. This has been challenging for haematology patients, in particular, as there are many on long term oral cytotoxic therapy. Should there be an exceptional case where prescribing oral cytotoxic therapy is required the GP should ensure that there is clarity on the drug, dose, frequency of dose and schedule. Written information on this should be received by the GP from the specialist before any prescribing occurs. The GP must check with the patient that no previous supplies are held by the patient to avoid double dosing.
Most Common Side Effects Following Chemotherapy

- Neutropenic sepsis
- Nausea and vomiting
- Diarrhoea and constipation
- Stomatitis
- Fatigue

Neutropenic Sepsis

Neutropenic sepsis is a life-threatening toxicity and should be treated as a MEDICAL EMERGENCY. Patients can deteriorate rapidly and die within hours.

Many cytotoxic regimes cause myelosuppression. The most common timeframe for this to occur is 7-14 days post chemotherapy. Neutropenic patients do not mount a normal immunological response to infection. It is therefore important to treat any symptoms with suspicion and refer to hospital urgently. A ‘999’ ambulance may be required.

Patients at greater risk:

- Patients with haematological malignancy (due to the disease impairing their immune system please have a lower threshold for referring to hospital or seeking haematological advice)
- Elderly or frail
- Patients who have had previous lines of chemotherapy
- Patients with a previous history of neutropenic sepsis

If any one of the following are observed the patient should be referred urgently to the local hospital for assessment and urgent full blood count

- Feeling generally unwell; flu like symptoms
- A single temperature reading of 38\(^0\) C (in the early stages of sepsis hypothermia can occur)
- Rigors
- Hypotension or tachycardia
- Severe diarrhoea, greater than grade 2 (see page 5)
- Unusual bruising or bleeding

The HEAT trigger can be used in assessing chemotherapy patients who present with feeling unwell:

HISTORY: when did they last have chemotherapy (within last 3 weeks, at risk)

EXAMINE: Any signs of infection, tachycardia, hypotension, feeling generally unwell

ACTION: Send to acute hospital for urgent bloods and IV antibiotics

TREATMENT: IV antibiotics should be delivered within 1 hour of admission
If patient has a central line (e.g. Hickman line, Groshong or PICC) and feels generally unwell, line infection should be suspected. This will need treatment with intravenous antibiotics. Localised infection around exit site can be treated with oral antibiotics only if the patient is apyrexial and feels well.

CONTACT 24 HOUR HELP LINE OR ONCOLOGIST/HAEMATOLOGIST ON CALL FOR ADVICE IF IN DOUBT

<table>
<thead>
<tr>
<th>Nausea and Vomiting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Some cytotoxic drugs cause nausea and vomiting. Patients on emetogenic chemotherapy regimes are given intravenous antiemetics with their chemotherapy and have a supply of antiemetic drugs to take for 3 days post treatment. The Sussex Cancer Network anti-emetic ladder is in appendix 1. Chemotherapy induced nausea and vomiting can be immediate (within 24 hours of drug administration), delayed (after 24 hrs of drug administration, sometimes as late a 1 week later) and anticipatory (symptoms prior to drug administration. Delayed symptoms are best controlled with either aprepitant or dexamethasone. Anticipatory nausea or vomiting is very difficult to manage but lorazepam can be tried 0.5-1mg before chemotherapy.</td>
</tr>
<tr>
<td>• Not all cytotoxic drugs are emetogenic. It is therefore necessary to consider other causes</td>
</tr>
<tr>
<td>• If a patient presents with severe vomiting an injection of antiemetic may be required. Assessment for signs of dehydration will need to be made. Admission to hospital for further control of vomiting or rehydration may be necessary.</td>
</tr>
<tr>
<td>• If the patient is 7-14 days post chemotherapy nausea can be a presenting sign for sepsis particularly if they have a Hickman line, a groshong line or a PICC line</td>
</tr>
<tr>
<td>• Patients who have received nephrotoxic drugs (e.g. cisplatin) will have been advised to drink 2-3 litres of fluid/day. If unable to achieve this due to nausea and vomiting they may require admission for IV fluids</td>
</tr>
</tbody>
</table>

CONTACT 24 HOUR HELP LINE OR ONCOLOGIST/HAEMATOLOGIST ON CALL FOR ADVICE IF IN DOUBT

<table>
<thead>
<tr>
<th>Diarrhoea/Constipation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diarrhoea: Hypovolaemic shock and subsequent death has been known to occur following chemotherapy-induced diarrhoea.</td>
</tr>
<tr>
<td>Some cytotoxic drugs cause diarrhoea particularly: capecitabine (an oral form of chemotherapy); 5FU (which is sometimes given via continuous infusion); Irinotecan and Oxaliplatin. If a patient on chemotherapy is suffering from diarrhoea and phones for advice they will need assessment for severity of diarrhoea and dehydration. Diarrhoea of up to 4 times a day can be treated with loperamide, oral fluids and follow up. Loperamide...</td>
</tr>
</tbody>
</table>
needs to be started with caution as it will mask severity of diarrhoea; capecitabine can result in pseudocolitis. If unsure seek advice from the local chemotherapy unit.

If the patient is experiencing diarrhoea 5-6 times a day and at night they will need referral to hospital for assessment (see toxicity criteria below). Interruption in chemotherapy treatment or dose reduction is likely. If diarrhoea is watery, amount of fluid loss will need to be assessed, the patient may require admission to hospital for intravenous hydration.

Diarrhoea can be associated with neutropenic sepsis, which should be treated as a medical emergency.

**Grading for Chemotherapy induced diarrhoea (NCI CTC toxicity rating scale):**

**Grade 1: Mild** 1-3 times per day. Loperamide can be used to control the diarrhoea; patient should contact the chemotherapy unit to inform them. If symptoms do not improve or they deteriorate further refer to Acute Trust

**Grade 2: Moderate** 4-6 times per day and/or nocturnal episodes. Loperamide will be required and treatment will possibly need to be **STOPPED. Refer immediately to hospital team** for advice. Fluid replacement may be required.

**Grade 3: Severe** 7-9 times per day, incontinence. **STOP** treatment. Loperamide will be required, Dose reduction may be required for next dose. **Refer to hospital team** for assessment, cultures, blood tests, antibiotics may be required.

**Grade 4: Life threatening** > ten times per day. **STOP** treatment. Emergency referral to hospital team.

**Constipation:**

Constipation is multifactorial. Some cytotoxic drugs can cause constipation e.g. vincristine, vinorelbine and vinblastine (vinca-alkaloids); these are often used for the treatment of advanced breast cancer, lung cancer and lymphomas. The 5HT-3 receptor antagonist antiemetics (e.g. palonosetron / ondansetron) can cause constipation.

Patients are advised by the chemotherapy nurses to drink plenty of fluids, have a high fibre diet with plenty of fruit and vegetables, and to inform the chemotherapy units if they have not opened their bowels for more than 2 days. Sometimes laxatives may need to be prescribed. If the patient has been receiving a vinca-alkaloid use of both a propellant and a softener will be required as these drugs affect the innervation of the bowel.

**Enemas and suppositories should not be administered to neutropenic patients as this may result in sepsis.**

**CONTACT LOCAL HOSPITAL FOR ADVICE IF IN DOUBT**
Stomatitis

A sore or ulcerated mouth can result from many chemotherapy regimens. The symptoms occur approximately 4-7 days following chemotherapy and can last for a further 7-10 days.

Severe stomatitis can affect the patient’s ability to eat, drink and even talk. Admission to hospital may be required if the patient is unable to drink. Some measures commonly used in managing stomatitis are listed:

- Difflam mouthwash - for a sore, inflamed mouth, useful for its local anaesthetic effect
- Chlorhexidine 0.2% mouthwash
- Orabase paste – for mouth ulcers
- Sucralfate mouthwash (1g in 5mls qds) for a sore/ulcerated mouth
- Systemic analgesia if the patient is experiencing a lot of pain
- Chewing sugar free gum can stimulate salivary flow
- Gelclair is a concentrated oral gel for managing painful symptoms of stomatitis. It creates a protective barrier.
- Mugard, a viscous, muco-adhesive rinse which provides a protective coating.

Stomatitis can result in secondary infection with Candida. Nystatin can be used for mild cases, or fluconazole (50mg daily for 7 days) for more extensive cases. With some chemotherapy regimes fluconazole is prescribed prophylactically.

Stomatitis involving mouth ulcers can be related to, or indicative of, neutropenia. If the patient is generally unwell as well and the timeframe is within 7-14 post chemotherapy consider neutropenic sepsis.

Other Less Common Side Effects

- Bladder toxicity
- Palmar-plantar erythrodysaesthesia
- Extravasation
- Joint pains
- Thrombocytopenia and anaemia
- Cardiac toxicity

Urinary/bladder toxicity

Some drugs (anthracyclines) can cause the urine to change colour (red), this is temporary and resolves within 48 hours.

Cyclophosphamide and Ifosfamide are drugs associated with toxic side effects to the bladder and ureter that can result in haemorrhagic cystitis. Patients are recommended to drink plenty of fluids in order to maintain a high urine output. If there are concerns about a patient who may have haemorrhagic cystitis please contact the 24 hour helplines for advice or the oncologist at the RSCH.

Caution should be taken when replacing blocked urinary catheters (including supra-pubic catheters). This is an invasive procedure which may result in sepsis if the patient is neutropenic. If the patient received chemotherapy within the last 7-14 days.
advice should sought via the chemotherapy units or out of hour’s services. Antibiotic prophylaxis may be required.

### Palmar Plantar Erythrodysaesthesia (PPE)

PPE is a syndrome resulting in redness and tenderness of the hands and feet. It can cause the patient’s skin to crack and blisters form. It may impair the use of their hands, cause pain and if very sever cause large areas of the skin to blister and peel off. This syndrome is most commonly seen in patients receiving continuous ambulatory 5-fluourouracil, capecitabine (an oral cytotoxic drug) and liposomal doxorubicin (Caelyx<sup>®</sup>). Treatment may need to be stopped until the severity of the symptom improves. Please contact the chemotherapy units or the oncologist in charge of the patient for advice.

### Extravasation

Extravasation of vesicant drugs can cause tissue necrosis. It is usually noted during the administration process and managed by the chemotherapy nursing team. However, evidence of extravasation can be subtle and as tissue damage begins internally and extends to the skin surface, extravasation injuries may become more evident/severe over several weeks or months.

Over the last few years there has been an increase in the numbers of patients receiving ambulatory chemotherapy via PICC/Groshong/Hickman lines. Extravasation is less likely to occur with these types of venous access devices but it can still occur. Early diagnosis of extravasation injury is essential in minimising permanent damage. Delay in diagnosis of 24 hours or more changes treatment philosophy from active cure to damage limitation. Treatment of extravasation injury is complex; specialist advice will be required.

- **‘Old injury’** - Refer back to treating hospital at earliest opportunity. Treat patients symptoms e.g. pain relief, topical steroids for inflammation.
- **‘New injury’** – e.g. from PICC line. Contact chemotherapy nurse if during working hours. Out of hours use 24 hour help line.

### Joint pains

Musculoskeletal pain can result from some chemotherapy regimes, particularly paclitaxel, docetaxel and with the administration of GCSF (e.g. filgrastim). Simple analgesics such as paracetamol are usually sufficient in controlling this pain.

### Thrombocytopenia and anaemia

Myelosuppression is a common side effect of chemotherapy most commonly affecting the production of white cells. The red cells and platelets are less commonly affected. If a chemotherapy patient presents with bleeding from nose, gums, urinary tract or G-I tract please refer immediately to the Acute Trust. If anaemia is suspected request a full blood count and let the chemotherapy unit know, they will follow up the results and arrange a transfusion if requested to do so.
Cardiac toxicity

Cardio-toxicity is a rare toxicity associated with some cytotoxic drugs. Cardiac arrhythmias or cardiomyopathy may be signs of cardiac toxicity. Drugs associated with cardiotoxic effects are the anthracyclines (e.g. doxorubicin and epirubicin), trastuzumab (herceptin) and paclitaxel, capecitabine and 5-fluorouracil, the latter is sometimes given as a continuous infusion.

Capecitabine and 5-fluorouracil have been known to cause angina due to coronary artery spasm. Should this occur the treatment MUST BE STOPPED and the patient referred urgently to the acute Trust.

References:
Appendix 1: List of emetogenicity of drugs; Antiemetic ladder

**Table 1.** Table of emetic potential of cytotoxic agents (All information refers to intravenous use unless otherwise stated.)

<table>
<thead>
<tr>
<th>Low risk</th>
<th>Moderate risk</th>
<th>High risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asparaginase</td>
<td>Aldesleukin</td>
<td>Carboplatin</td>
</tr>
<tr>
<td>Bleomycin</td>
<td>Amsacrine</td>
<td>Carmustine</td>
</tr>
<tr>
<td>Busulfan</td>
<td>Cyclophosphamide (oral)</td>
<td>Chlormethine (mustine)</td>
</tr>
<tr>
<td>Chlorambucil</td>
<td>Cyclophosphamide &lt;750mg/m²</td>
<td>Cisplatin</td>
</tr>
<tr>
<td>Cladribine</td>
<td>Cytarabine &lt;1g/m²</td>
<td>Cyclophosphamide &gt;750mg/m²</td>
</tr>
<tr>
<td>Etoposide</td>
<td>Dactinomycin</td>
<td>Cytarabine &gt;1g/m²</td>
</tr>
<tr>
<td>Fludarabine</td>
<td>Daunorubicin</td>
<td>Dacarbazine</td>
</tr>
<tr>
<td>Fluorouracil</td>
<td>Doxorubicin</td>
<td>Irinotecan</td>
</tr>
<tr>
<td>Gemcitabine</td>
<td>Epirubicin</td>
<td>Lomustine</td>
</tr>
<tr>
<td>Hydroxyurea</td>
<td>Fotemustine</td>
<td>Melphalan (oral &gt;100mg)</td>
</tr>
<tr>
<td>Melphalan (oral)</td>
<td>Idarubicin</td>
<td>Oxaliplatin</td>
</tr>
<tr>
<td>Mercaptopurine (oral)</td>
<td>Ifosfamide &lt;1.5g/m²</td>
<td>Pentostatin</td>
</tr>
<tr>
<td>Methotrexate &lt;100mg/m²</td>
<td>Melphalan &lt;50mg/m²</td>
<td>Streptozocin</td>
</tr>
<tr>
<td>Tioguanine (oral)</td>
<td>Methotrexate &gt;100mg/m²</td>
<td></td>
</tr>
<tr>
<td>Thiotepa</td>
<td>Mitomycin-C</td>
<td></td>
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<tr>
<td>Vinblastine</td>
<td>Mitoxantrone</td>
<td></td>
</tr>
<tr>
<td>Vincristine</td>
<td>Paclitaxel</td>
<td></td>
</tr>
<tr>
<td>Vindesine</td>
<td>Procarbazine (oral)</td>
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<tr>
<td>Vinorelbine</td>
<td>Raltitrexed</td>
<td></td>
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<tr>
<td></td>
<td>Topotecan</td>
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</table>

An antiemetic ‘ladder’ has been developed. The level of antiemetic therapy offered to a patient should be appropriate for the potential emetogenicity of the chemotherapy.
regime prescribed. However, if the level of antiemetics used is insufficient and fails to control symptoms, then prescription of drugs should escalate to the next level on the ladder with the subsequent course of chemotherapy.

Antiemetics can cause side effects, for example extrapyramidal side effects with metoclopramide; constipation with 5HT-3-receptor antagonists. This should be borne in mind when prescribing or administering chemotherapy.

**LEVEL 1: REGIMES/DRUGS WITH LOW EMETOGENIC POTENTIAL**

Antiemetics may not be required. If required:
- IV Drugs: Consider prescribing Metoclopramide 10mg with chemotherapy
- Oral Drugs: Metoclopramide 10-20mg tds or as required

**LEVEL 2: REGIMES/DRUGS WITH MODERATE EMETOGENIC POTENTIAL**

- IV Drugs: metoclopramide 10mg IV and dexamethasone 4-8mg with chemotherapy
- Oral Drugs: metoclopramide 10-20mg tds and dexamethasone 2-4mg tds for 3 days if required

**LEVEL 3: REGIMES WITH HIGH EMETOGENIC POTENTIAL**

- IV Drugs: Dexamethasone 8mg IV and Ondansetron 8mg with chemotherapy
- Oral Drugs: Ondansetron 8mg 6-12 hours post chemotherapy and then 8mg bd for three days and Dexamethasone 8mg daily for three days

**LEVEL 4: REGIMES WITH VERY HIGH EMETOGENIC POTENTIAL**

- IV Drugs: Dexamethasone 8mg IV and Palonestron 250 mcg 30 mins prior to chemotherapy
- Oral Drugs: Dexamethasone 8mg daily for three days
- Consider adding oral cyclizine 50mg tds for 3 days if necessary.
- Lorazepam 0.5-1mg s/l may be added.
- Consider adding aprepitant 125 mg po 1 hour before chemotherapy with 80mg on days 2-3
### Appendix 2: Some of the More Common Chemotherapy Regimes and Drugs Used

<table>
<thead>
<tr>
<th>Regime and route</th>
<th>Drugs/other names</th>
<th>Cycle time</th>
<th>Tumour group used in</th>
<th>Main side effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABVD (IV)</td>
<td>Adriamycin (a.k.a. doxorubicin) Bleomycin* Vinblastine Dacarbazine</td>
<td>28 days (IV doses given on days 1 &amp; 15)</td>
<td>Hodgkin’s Disease</td>
<td>Hair loss, fatigue, myelo-suppression and neutropenic sepsis, stomatitis *pulmonary toxicity</td>
</tr>
<tr>
<td>AC (IV)</td>
<td>Adriamycin Cyclophosphamide*</td>
<td>14-21 days</td>
<td>Breast</td>
<td>Hair loss, nausea and vomiting, myelo-suppression, and neutropenic sepsis *haemorrhagic cystitis</td>
</tr>
<tr>
<td>Capecitabine (oral)</td>
<td>Xeloda</td>
<td>14 continuous days every 21 days</td>
<td>Breast, CRC,</td>
<td>Diarrhoea, fatigue, palmer plantar erythrodyesthesia</td>
</tr>
<tr>
<td>Carboplatin (IV)</td>
<td></td>
<td>21-28 days</td>
<td>Ovarian</td>
<td>Diarrhoea, nausea and vomiting, fatigue, myelo-suppression, hypersensitivity</td>
</tr>
<tr>
<td>CHOP IV and oral</td>
<td>Cyclophosphamide Adriamycin Vincristine Prednisolone</td>
<td>14 - 21 days</td>
<td>NHL</td>
<td>Hair loss, nausea and vomiting, constipation, fatigue, myelo-suppression and neutropenic sepsis, peripheral neuropathy</td>
</tr>
<tr>
<td>CVP (IV and oral)</td>
<td>Cyclophosphamide, Vincristine, Prednisolone</td>
<td>21 days</td>
<td>NHL</td>
<td>Constipation, peripheral neuropathy, myelo-suppression</td>
</tr>
<tr>
<td>Docetaxel (IV)</td>
<td>Taxotere</td>
<td>21 days</td>
<td>Breast, Prostate, lung</td>
<td>Fatigue, joint pains, myelo-suppression and</td>
</tr>
<tr>
<td>Regimen</td>
<td>Protocol</td>
<td>Duration</td>
<td>Side Effects</td>
<td></td>
</tr>
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<td></td>
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<tr>
<td>E Carbo (IV and oral)</td>
<td>Etoposide and carboplatin</td>
<td>21 days; oral chemo on days 1,2 &amp;3</td>
<td>Lung</td>
<td>Hair loss. Nausea and vomiting, fatigue, myelosuppression and neutropenic sepsis</td>
</tr>
<tr>
<td>EC*X (IV and oral)</td>
<td>Epirubicin, cisplatin and capecitabine</td>
<td>21 days with continuous oral chemotherapy</td>
<td>Upper G-I cancers</td>
<td>Hair loss, nausea and vomiting, myelosuppression, neutropenic sepsis, diarrhoea, fatigue. *ototoxic</td>
</tr>
<tr>
<td>EE*X (IV and oral)</td>
<td>Epirubicin, Oxaliplatin and capecitabine</td>
<td>21 days with continuous oral chemotherapy</td>
<td>Upper G-I cancers</td>
<td>Hair loss, nausea and vomiting, myelosuppression, neutropenic sepsis, diarrhoea, fatigue, peripheral neuropathy. *neurotoxic</td>
</tr>
<tr>
<td>FE* C &amp; EC (IV)</td>
<td>5-Fluorouracil, Epirubicin and Cytosporophamide</td>
<td>21 days</td>
<td>Breast</td>
<td>Nausea and vomiting, myelosuppression, neutropenic sepsis, fatigue. *cardiotoxic</td>
</tr>
<tr>
<td>Gem/Carbo</td>
<td>Gemcitabine and carboplatin</td>
<td>Day 1 &amp; 8 every 21 days</td>
<td>Lung</td>
<td>Nausea and vomiting, myelosuppression</td>
</tr>
<tr>
<td>Irinotecan (IV as single agent) (oral capecitabine can be added to this)</td>
<td>Irinotecan (+/- capecitabine)</td>
<td>21 days (with 14 days of capecitabine), or 14 days (with 9 days of capecitabine)</td>
<td>Colorectal</td>
<td>Diarrhoea, nausea and vomiting,</td>
</tr>
<tr>
<td>Ox*/Cap (IV and oral)</td>
<td>Oxaliplatin and capecitabine</td>
<td>14 and 21 day variant: 14 days has 9 days of oral chemotherapy,</td>
<td>Colorectal</td>
<td>Diarrhoea, nausea and vomiting, myelosuppression, neutropenic</td>
</tr>
<tr>
<td>Vinorelbine (IV or oral)</td>
<td>21 day has 14 days of oral chemotherapy</td>
<td>sepsis, palmer plantar erythrodysthesia, fatigue, peripheral neuropathy</td>
<td>*neurotoxic</td>
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<tr>
<td>IV regime 21 days</td>
<td>Oral regime varies</td>
<td>Lung</td>
<td>Breast</td>
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<td>Constipation, peripheral neuropathy.</td>
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Appendix 3: HEAT raising awareness campaign for neutropenic sepsis

Sussex Cancer Network

24-Hour Help Lines for Chemotherapy Advice for Acute Hospitals With Sussex Cancer Network:

Royal Sussex County:
Sussex Cancer Centre: Mon-Fri 9:00-5:00 01273 884995 ext 4799.
A Chemotherapy nurse will always be available to talk to.
Howard 1 (Out of hours) 01273 884995 ext 4051, staffed by Oncology nurses - ask for the nurse in charge of the unit.
Haematology Ward: 01273 884995 ext 7413, direct line 01273 644771 - ask for the nurse in charge of ward.

Worthing Hospital:
Medical Day Care Unit: Mon-Fri 8:00-6:00 01903 205111 ext 5450.
A Chemotherapy nurse will always be available to talk to.

Goringham Ward (out of hours) 01903 205111 ext 5596, staffed by medical and haematology nurses - ask for the nurse in charge of the unit.

Eastbourne District General Hospital:
Medical Day Unit: Mon-Fri 8:00-6:00 01323 471400 ext 3520.
A Chemotherapy nurse will always be available to talk to.

Revereon Ward (out of hours) 01323 435866, staffed by haematology nurses who have experience in chemotherapy - ask for the nurse in charge of the unit.

Conquest Hospital:
Mt Carveron Day Unit: Mon-Fri 9:00-5:00 direct line 01424-757030.
A Chemotherapy nurse will always be available to talk to.

Revereon Ward (out of hours) 01323 435866, staffed by haematology nurses who have experience in chemotherapy - ask for the nurse in charge of the unit.

www.sussecancer.nhs.uk

Signs and symptoms of neutropenic sepsis:
Chemotherapy can result in a life threatening side effect of neutropenic sepsis.
Early diagnosis will prevent death.

Early signs:
- Feeling generally unwell with or without a temperature
- T 38°C and slight hypothermia or slight tachypnoea
- Symptoms of infection
- Shivering, hot and cold, spontaneous rigor
- Diaphoresis
- At the early stage the patient will be warm and alert and not look unwell.

Late signs:
- Cold and clammy
- Restless, anxious or confused
- Hypothermic
- Hypokinetic, tachypnoic

Patients at risk:
- Past chemotherapy 7-10 days is a classic time for neutropenia following chemotherapy, however delayed neutropenia can occur with some regimens.
- Haematology patients
- Elderly
- Heavily pre-treated
- Any underlying line
- Co-morbid conditions e.g. advanced cancer
- General poor health

What to do:

History – Is the patient on chemotherapy? When did they last have treatment? How many cycles have they been on? Are there any specific symptoms of infection?

Examine – Temperature, pulse, blood pressure and respiration.

Action – Urgent full blood count is required, therefore refer urgently to local acute provider.

Treatment – On diagnosis of neutropenic sepsis, urgent intravenous antibiotics must be administered within one hour of admission time.