SUMMARY

This guideline outlines the process for the preferred immunisation regimen for patients receiving or scheduled to receive cytotoxic chemotherapy.

1.0 INTRODUCTION - KEY POINTS

Patients frequently remain able to respond to and benefit from vaccination during chemotherapy.

- **Influenza vaccination:** recommended during the ‘flu season (Oct – Mar) for patients treated with cytotoxic chemotherapy.
- **Pneumococcal vaccination:** recommended for patients treated with cytotoxic chemotherapy if they have not previously been vaccinated against it. (irrespective of the season)
- **Influenza and conjugate pneumococcal vaccinations:** safe during cytotoxic chemotherapy.
- **Catch up vaccinations:** recommended for patients planned for cytotoxic chemotherapy - to match the UK immunisation schedule.
- **Live vaccinations:** should be avoided during the 6 months following cytotoxic chemotherapy and subsequently if immunosuppression continues. Also to be avoided in patients on steroids for more than 1 week.
- **The close contacts of patients having chemotherapy:** should receive routine immunisations (including live vaccines): To reduce the risk to the patient, varicella and influenza immunisations should also be considered for this group.

2.0 Patients with cancer are at increased risk of contracting influenza and have higher complication and mortality rates from influenza infection.

If the patient is planned for chemotherapy within the ‘flu season but not within the next 2 weeks:

- Recommend vaccination at the local GP surgery (vaccination>2 weeks prior to chemotherapy ensures maximal response).

If the patient is planned for chemotherapy within the ‘flu season and within the next 2 weeks:

- Do not delay chemotherapy.
- Recommend vaccination at the GP surgery at the earliest opportunity before or during chemotherapy within 72 hours of chemotherapy (days 1-3 of treatment cycle) to avoid period of predicted neutropenia. (to prevent diagnostic uncertainty if fever following vaccination)

Though not specifically recommended by DoH, vaccination of patients with advanced cancer/poor performance status who are not receiving or being planned for chemotherapy may be beneficial (a clinical decision).

2.1 Pneumococcal vaccination:

Recommended: for patients receiving chemotherapy who have not been previously vaccinated against pneumococcus.

2.1.1 For patients not planned for chemotherapy within the next 3 months, recommend*:

- Conjugate pneumococcal vaccine (13valent ‘Prevenar13’) at GP surgery a minimum of 10 (ten) weeks prior to chemotherapy.
• Subsequent Pneumovax vaccine (23valent ‘Pneumovax’) at GP surgery 8 weeks after Prevenar 13 and a minimum of 2 week before chemotherapy.

2.1.2 For patients planned for chemotherapy within the next 3 months, recommend*:
• Conjugate vaccine Prevenar13 alongside influenza vaccination at GP surgery.
  (before or during chemotherapy, with same timing considerations as above)
• To maximise the response to the polysaccharide vaccination, delay the subsequent Pneumovax vaccination until 3 months following completion of chemotherapy.

2.2 Catch up vaccinations:
• Catch-up vaccinations to align with the current UK immunisation schedule are recommended for patients
  http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1194947406156
  http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/VaccinationImmunisation/Guidelines
• To ensure optimal immune response, preferably, these should be complete at least 2 weeks prior to chemotherapy.
• If immediate protection is required, (avoiding the period of predicted neutropenia) non-live vaccinations can be given, though to ensure effective long-term protection, these should be repeated after completion of chemotherapy.

2.3 Live vaccines: include rubella, mumps, measles (usually given together as MMR) varicella zoster, BCG, oral typhoid and yellow fever.
• Avoid live vaccines for 2 weeks before, during and for 6 months after chemotherapy.
• Avoid indefinitely if persistent immunosuppression following treatment
• Avoid in patients treated with steroids (40mg prednisolone/day or equivalent) for more than 1 week.

2.4 Vaccination of close contacts of patients undergoing immunosuppressive chemotherapy.
• Give reassurance that household contacts of the patient receiving chemotherapy can receive both inactivated or live vaccines at any time without risk to the patient; instead, these offer a protective role.
• Children requiring flu vaccination and who are living with an immunocompromised person should be offered trivalent flu vaccination rather than intranasal live attenuated flu vaccination (FLUENZ) because of the risk of shedding live virus.
• Influenza vaccine should be offered to all close family contacts from 6 months of age.
• Varicella zoster vaccination for contacts should be offered depending on the patient and contact history of chickenpox, and, where appropriate, the results of varicella zoster virus (VZV) serology as follows:
  o If the patient has a history of chickenpox, no further testing of the patient or contacts or varicella vaccination of the contacts is required.
  o Patients with no history of chickenpox should have the VZV serology performed (>90% will be VZV lg positive). No further testing or vaccination of contacts is required if the patient VZV serology is positive. If the patient’s VZV serology is negative (ie non-immune) close contacts ≥16 with no history of chickenpox should undergo VZV serology and receive varicella vaccination if serology is negative. Close contacts aged,16 with no history of chickenpox do not require VZV serology and should be vaccinated against varicella without testing.

2.5 General Vaccination Advice
• All vaccinations should be given via the GP surgery
• Vaccines given during chemotherapy should be discounted when considering the number of
doses required for long term protection.

- To avoid triggering an acute febrile reaction which may confound detection of neutropenic sepsis where possible, avoid all vaccinations during the period of neutropenia (neutrophil count <1.0 x10^9/L).
- Where the platelet count is <50 AND immediate vaccination is considered to be in the patient’s best interest (especially seasonal influenza vaccine) the vaccine can be safely administered via the subcutaneous route as long as the volume of the injection permits this.
- Normal vaccinations can recommence 6 months after the completion of chemotherapy if the disease is in remission.

### 3.0 MONITORING COMPLIANCE WITH THIS GUIDELINE

3.1 The Guideline will be monitored for compliance as follows:

<table>
<thead>
<tr>
<th>No</th>
<th>Minimum Requirements</th>
<th>Evidenced by</th>
<th>NHSLA standard</th>
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<tbody>
<tr>
<td>1</td>
<td>The style and format of the Guideline is as described in the Trust Policy</td>
<td>Reading the procedural document</td>
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<td>There is an explanation of any terms used in documents developed</td>
<td>Reading the procedural document</td>
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<td>The consultation process was through the Programme and, if required, Trust governance structure</td>
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<td>The guidance ratification is documented in the relevant committee’s / group’s minutes</td>
<td>Reading the relevant committee’s minutes</td>
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<td>The review arrangements are an appropriate timescale to enable it to be reviewed before the guideline goes out of date</td>
<td>Reading the procedural document</td>
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<td>Associated policies and documents were listed in the guideline</td>
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<td>8</td>
<td>The supporting references were up to date &amp; relevant as far as is practical</td>
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3.2 The monitoring will be undertaken by:

### 4.0 FURTHER INFORMATION AND REFERENCES:

Current HPA guidance for those with unknown or incomplete immunisation status:

http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/VaccinationImmunisation/Guidelines

Department of Health “The green Book”

5.0 PUBLICATION DETAILS

<table>
<thead>
<tr>
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