There is so much we don't know in medicine that could make a difference, and often we focus on the big things, and the little things get forgotten. To highlight some smaller but important issues, we've put together a series of pearls that the Red Whale found at the bottom of the ocean of knowledge!

## Immunisation schedule: recent changes

The UK immunisation schedule is changing again, so here is a summary of the current schedule highlighting the changes, and then I'll explain why and the practicalities. There is also updated advice about timing and co-administration of live vaccines.

### ROUTINE immunisation schedule for the UK

<table>
<thead>
<tr>
<th>Age</th>
<th>Diseases</th>
<th>Site</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2m</td>
<td>Diphtheria, tetanus, pertussis, polio &amp; H.influenzae B</td>
<td>Thigh</td>
<td>NEW! Meningitis B Beavero</td>
</tr>
<tr>
<td></td>
<td>Pediacel: DTaP/IPV/Hib</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pneumococcal</td>
<td>Thigh</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prevenar: 13, PCV</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rotavirus – given orally</td>
<td>ORAL</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rotarix</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Meningitis B</td>
<td>Thigh (L)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Beavero</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3m</td>
<td>Diphtheria, tetanus, pertussis, polio &amp; H.influenzae B</td>
<td>Thigh</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pediacel: DTaP/IPV/Hib</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Meningitis C</td>
<td>Thigh</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mengevate or NisVac-C, MenC</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Beavero</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4m</td>
<td>Diphtheria, tetanus, pertussis, polio &amp; H.influenzae B</td>
<td>Thigh</td>
<td>NEW! Meningitis B Beavero</td>
</tr>
<tr>
<td></td>
<td>Pediacel: DTaP/IPV/Hib</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pneumococcal</td>
<td>Thigh</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prevenar: 13, PCV</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Meningitis B</td>
<td>Thigh (L)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Beavero</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12–13m</td>
<td>H.influenzae B and Meningitis C</td>
<td>Thigh or upper arm</td>
<td>NEW! Meningitis B Beavero</td>
</tr>
<tr>
<td></td>
<td>Menitoric: Hib/MenC</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pneumococcal</td>
<td>Thigh or upper arm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prevenar: 13, PCV</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Measles mumps and rubella</td>
<td>Thigh or upper arm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Priorix or VarPCO: MMR</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Meningitis B</td>
<td>Thigh or upper arm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Beavero</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Moving towards all 2–17y olds

<table>
<thead>
<tr>
<th></th>
<th>Influenza</th>
<th>Site</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Flu Dec: influenza</td>
<td>NASAL</td>
<td>NEW! Annually, nasally</td>
</tr>
<tr>
<td></td>
<td>Currently 2, 3 and 4 year olds and school years 1 and 2 in England (plus in Scotland and N. Ireland: all primary schoolchildren, Wales: all children in year 7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3y4m</td>
<td>Diphtheria, tetanus, pertussis and polio</td>
<td>Upper arm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prevenar: DTaP/IPV or Intanrix: IPV, DTaP/IPV</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Measles mumps and rubella</td>
<td>Upper arm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Priorix or VarPCO: MMR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Girls 12–13y</td>
<td>HPV 16 &amp; 18 (common cervical cancer strains) and 6 &amp; 11 (genital wart strains)</td>
<td>Upper arm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gardasil: HPV (3 doses: 0m, 1–2m &amp; 5m after 2nd dose)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
And here is the immunisations schedule for those in at-risk groups (I have listed the exact definitions of at-risk groups for flu and pneumococcal at the end of this document).

### Immunisation schedule for RISK GROUPS
N.B. these are only offered to those in at-risk groups

<table>
<thead>
<tr>
<th>Disease Vaccine</th>
<th>Age</th>
<th>Site given</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuberculosis BCG</td>
<td>Birth</td>
<td>INTRADERMAL upper arm</td>
</tr>
<tr>
<td>Hepatitis B HepB</td>
<td>Birth, 1m, 2m and 12m</td>
<td>Thigh</td>
</tr>
<tr>
<td>Annual flu jab (risk groups defined at the end of this document)</td>
<td>6m–2y Inactivated flu injection, 2–17y Nasal flu: Fluenz, 18–64y Inactivated flu injection</td>
<td>Upper arm/thigh, Nasal, Upper arm</td>
</tr>
<tr>
<td>Pneumococcal Pneumovax II: PPV pneumococcal polysaccharide</td>
<td>2–65y</td>
<td>Upper arm</td>
</tr>
<tr>
<td>Pertussis</td>
<td>From 23w of pregnancy</td>
<td>Upper arm</td>
</tr>
</tbody>
</table>

What are the key changes?

**2015 Changes:**

- The meningitis B vaccine will be offered at 2, 4 and 12m from 1st September 2015. There will be a catch up programme for infants due their 3 and 4m injections in September but it will not extend any further. It is available privately.
- Meningitis ACWY vaccine will be offered to 17 and 18 year olds (in year 13 at school) and to all first time university students aged 19–25 as an urgent catch up because of high rates of meningitis W infection and carriage. This should start in August 2015.
- Meningitis ACWY will replace meningitis C booster given age 14 from August 2015.
- Influenza will eventually be offered to all healthy children aged 2–17y as well as those in at-risk groups – this is being rolled out. In 2015 this will be children aged 2, 3 and 4y and those in school year 1 and 2 (in practice aged 5 and 6y).

**2013 Changes:**

- Rotavirus immunisation was added to the infant immunisation schedule: 2 oral doses are given, one at 2m and the second at 3m of age.
- A shingles vaccine is to be offered to those aged 70y (with a catch-up programme aiming to cover all 70–79 year olds over a
few years). It is given sub-cutaneously.

**Meningitis B vaccine (Bexsero)**

The JCVI initially rejected the meningitis B vaccination (Bexsero) because immunity seemed to wane rapidly and the cost–benefit analysis showed that it would only be cost-effective if available at a low cost.

However, after widespread protest from interest groups and a renegotiation of the costs with the manufacturers it is to be introduced from 1st September 2015.

- Bexsero (Novartis) meningitis B vaccine is a 3 dose course and will be offered at 2, 4 and 12m.
- A catch up program will also be offered to those infants due their 3 or 4m vaccinations in September 2015 but will extend no further. Here is the schedule:

<table>
<thead>
<tr>
<th>Babies born or after</th>
<th>Priming dose</th>
<th>Priming dose</th>
<th>Booster</th>
</tr>
</thead>
<tbody>
<tr>
<td>Routine cohort</td>
<td>01/07/2015</td>
<td>2m</td>
<td>4m</td>
</tr>
<tr>
<td>Catch-up cohort</td>
<td>01/05/2015 to 30/09/2015</td>
<td>3m</td>
<td>4m</td>
</tr>
</tbody>
</table>

- It is a multicomponent protein vaccine (not live).
- The only contraindication is a previous anaphylactic reaction to the vaccine or its components.
- Ideally it should be given as the only injection in the left thigh (to allow monitoring of reactions).
- The most common side-effects are injection site pain, fever and irritability. Fever is a particular issue.

**Prophylactic paracetamol**

Studies have suggested that significant fever (>38°C) is an issue when Bexsero is administered alongside other routine infant immunisations. The JCVI have recommended prophylactic use of paracetamol at the time of immunisation. Studies have shown this reduces fever without affecting immunogenicity of either Bexsero or the other routine infant immunisations. This is in contrast to previous studies which suggested that paracetamol may affect immunogenicity of primary infant vaccines when Bexsero is not co-administered.

**Advise parents to:**
- Administer 2.5ml liquid paracetamol at the time or shortly after the vaccine and repeat for 2 further doses 4–6h later.

**How effective is it?**
- There is good evidence that it is effective at producing high levels of antibodies at equivalent levels to currently used meningitis vaccines.
- There have been no large studies demonstrating clinical effectiveness in large populations and it is not routinely implemented in any other country as yet.
- Small studies during meningitis B outbreaks have shown promising results in reducing transmission with effectiveness estimated at around 73%.

The UK programme will be important in contributing to these data.

**Meningitis ACWY**

This vaccine is being added to the UK programme for the first time because of an increase in rates of infection of a particularly deadly strain of meningitis W. This is particularly an issue in student communities where adolescents live in close contact. Rates of infection have quadrupled over the past 4y from 42 to 155 cases.

It is hoped that vaccinating adolescents will boost herd immunity, especially in infants and children.
- From August 2015 it will be offered to 17 and 18 year olds via their GP surgery and a catch up programme will be initiated for students currently in year 10 at school.
- From Autumn 2015 it will be added to the school vaccination programme at age 14 and given as a direct replacement for the meningitis C booster that was introduced in 2013.
- Two vaccines will be used: *Nimenrix* and *Menveo* – they are equally effective. They are multicomponent protein vaccines. A single dose is all that is required. Both types need reconstituting and should be used immediately.
- Contraindications are previous anaphylactic reaction to this vaccine or its constituents.

And here is a reminder of the slightly older changes from 2013.

**Rotavirus: why the changes?**

- Rotavirus is a common cause of severe diarrhoeal illness in infants across the world. Mortality is low in the UK (but significantly higher in low and middle income countries) but morbidity in the UK, and elsewhere, can be significant.
- In the UK rotavirus affects 140 000 children under 5 each year and 10% of these (that’s 14 000 children!) require hospitalisation.
- It is anticipated that vaccination will reduce hospitalisation rates by 70%.
- Rotarix (GlaxoSmithKline) is a monovalent live attenuated vaccine given at 2 and 3m of age. Do note that it is given ORALLY, not by injection.
- Like the other childhood immunisations it should not be given before 6w of age.
- Unlike the other immunisations there is an upper age limit: the first dose can be given up to, but not beyond, 14w and 6d and the second dose can be given up to, but not beyond, 23w and 6d. This is because there is a theoretical increased risk of intussusception if used beyond this age.

How effective is the vaccine?

Two recent publications have looked at the effectiveness of rotavirus vaccination programmes. A Cochrane meta-analysis (Cochrane 2012;CD008521) looked at all RCTs comparing vaccination with placebo, no intervention or another vaccine. There were 29 trials with more than 100 000 participants where Rotarix was the vaccine used.

- In high income countries vaccination prevented 86% (RR 0.14, CI 0.07–0.26) of severe diarrhoeal illness.
- It was less effective in low and middle income countries where mortality from rotavirus is higher: it prevented only 63% of severe cases.
- There were a similar number of adverse reactions in the vaccine and placebo groups.

Belgium has been vaccinating infants against rotavirus since 2006 with Rotarix. A small prospective cohort study compared the immunisation status of children admitted to hospital with confirmed rotavirus with age-matched children admitted to the same hospitals for other reasons (BMJ 2012;345:e4752).

- They estimated effectiveness (preventing admission) to be around 90% (79–96%), which is similar to the Cochrane study.
- The vaccine seems to give long term protection: although given in infancy it offered similar levels of protection to children even some years after immunisation.
- Rotarix, despite being a monovalent vaccine, offered protection against non-related strains of rotavirus.

Influenza: why the changes?

The key change is that the influenza vaccination will be offered to healthy children aged 2, 3 and 4 and in school years 1 and 2 in 2015, slowly rolling out to all children aged 2–17y.

Why vaccinate children?

This is in order to:

- Reduce disease burden in children.
- Reduce disease burden indirectly in young babies and adults in risk groups and the elderly.

Who will be offered the vaccine?

- Children who are 2–17y will eventually be covered, but this is rolling out year on year.
- During the roll-out children from the age of 2 to 17y in at-risk groups will also be offered the nasal vaccine, instead of the injection.

The new vaccine (Fluenz)

- It is a live attenuated virus. It can be given at the same time as other vaccines, including live vaccines.
- It is given nasally: a single dose = one squirt up each nostril, see below.
- A SINGLE dose (1 squirt up each nostril) is required EXCEPT for those aged 2–9y who are in a clinical risk groups (see table at end of document) AND who have never had a flu jab of any kind: these children need to have 2 doses at least 4w apart (you may notice that the SPC says all children need 2 doses, but the JCVI has recommended that because of only modest additional protection from the second dose, only those children aged 2–9y in at-risk groups actually need 2 doses).
- Because it is a live vaccination it is possible for those who have been immunised to transmit the virus for 1–2w to those who are severely immunocompromised (e.g. bone marrow patients requiring isolation). In these situations, if contact cannot be avoided (e.g. household members), offer an inactivated injection instead of the nasal vaccine.
- In those who cannot be given the nasal vaccine, offer the inactivated injection instead. Remember that children aged 6m–9y who have never had the flu jab before need 2 doses of the inactivated injection at least 4w apart.
- It can be kept out of the fridge for 12 hours, but after this point it needs to be binned.

Giving Fluenz: the practicalities

- Fluenz is given nasally: first into one nostril and then into another.
- It comes in a single needleless syringe which has a dose divider already attached to the plunger of the syringe.
- Sit the patient upright and remove the cap of syringe (but not the dose divider).
- Insert just into entrance of one nostril, remind patient that they do not need to breathe in/sniff, and depress plunger quickly as
far as allowed by the dose divider.  
- Remove from nose, remove dose divider and repeat the process into the other nostril, using the remaining vaccine left in the syringe.  
- It doesn’t matter if your nose runs afterwards, or if you sneeze immediately afterwards – the vaccine is still effective.  
- For step-by-step instructions, please see a link to the manufacturer’s website, listed in the useful website box at the end of this document.  
- It has a short shelf life (18w) and by the time we receive it some of this will have passed already.  
  - Be particularly careful to check the expiry date before administration.  
  - Make sure you are all ready to go as soon as it arrives!

Effectiveness and safety of Fluenz

- Fluenz is more effective in children than the inactivated flu vaccines (injections).
- It has been widely used in the US and Northern Ireland with a good safety profile and may offer some cover against other strains of flu not included in the vaccine itself.

Thiomersal

None of the flu vaccines have thiomersal added to them as a preservative, although the SPC states that traces of thiomersal may be present that are left over from the manufacturing process.

Contraindications to Fluenz

Do not give Fluenz to those:

- Aged less than 2y.
- With egg allergy (no safety data available).
- Who are actively wheezing on the day of immunisation OR with severe asthma (BTS step 4) (lack of data on safety/efficacy).
- Who are severely immunocompromised (including leukaemias, lymphomas, those with HIV not on HAART, primary immunodeficiencies, high dose steroids).
- Under 18y who are on aspirin because of an association of Reye’s syndrome with aspirin and wild-type influenza.

It can be given to those on inhaled corticosteroids or low dose oral corticosteroids or corticosteroids as replacement therapy (e.g. in adrenal insufficiency) and to those with HIV who are stable on antiretrovirals.

Common side-effects

More than 1 in 10 will get nasal congestion, rhinorrhea, headache, decreased appetite and malaise.

More than 1 in 100 will get pyrexia and myalgia.

More than 1 in 1000 will get epistaxis, rash, hypersensitivity reaction including facial oedema and urticaria and very rarely (<1 in 10 000 will get anaphylaxis).

Remember, this is a new vaccine and any possible adverse events/interactions should be reported to the MHRA via the yellow card scheme.

Shingles: so why the new vaccine?

1 in 4 people get shingles in their lifetime: it is caused by reactivation of the latent varicella zoster virus, some years after an initial chickenpox infection. As you get older your general and specific immunity seems to wane, so the risk of reactivation increases with age. In addition, shingles tends to be worse in older people, and post-herpetic neuralgia is more common.

In England and Wales 30 000 people in their 70s get shingles each year. Around 1 in a 1000 of those who get shingles over 70 die during an infection (although some possibly of a co-morbidity rather than shingles itself).

- From September the UK will offer shingles vaccines to those aged 70, with a catch up programme running for those aged 79. The vaccine is not offered to those aged 80 or over because its effectiveness declines with age.
- Trials show immunity lasts for at least 7 years. It is not yet clear whether a booster dose will be needed.

The Zostavax vaccine

- It is a live attenuated vaccine, and is given as a single subcutaneous injection.
- The vaccine comes in 2 parts: the diluent and the vaccine: the 2 need to be mixed and then given. Huge potential for error here! How many people will forget to mix them and just give the patient the diluent?!!! I know; I did it once with a different drug...thankfully the patient wasn’t upset by my incompetence!
- It should be kept in the fridge and after reconstitution is should be used immediately (and definitely within 30min).
- It has a short shelf life so do check the expiry date carefully before administering it.
- Zostavax can be given at the same time as inactivated flu vaccinations, but do note that Zostavax is given subcutaneously and influenza is given intramuscularly or by deep subcutaneous injection.
- The DH letter assures us that Zostavax can also be given at the same time as the 23 valent pneumococcal polysaccharide
vaccine (PPV23) despite the SPC saying it shouldn’t!

**Contraindications to the shingles vaccine**

**It is a live vaccine and therefore should not be given to those:**

- With primary or acquired immunodeficiency including:
  - Bone marrow disorders: acute and chronic leukaemias, lymphoma.
  - Immunosuppression due to HIV/AIDS.
  - Cellular immune deficiencies.
  - On immunosuppressives including high-dose corticosteroids. This does NOT include inhaled steroids or low-dose systemic steroids or patients taking steroids as replacement therapy (for example, in adrenal insufficiency).
- Methotrexate (<0.4mg/kg/w), azathioprine (<3mg/kg/d) and mercaptopurine (<1.5mg/kg/d) are NOT contraindications because they do not offer sufficient immunosuppression to cause concern.
- With active untreated TB.
- With confirmed anaphylaxis to previous varicella vaccine.
- With confirmed anaphylactic reaction to any of the vaccine components which include gelatine and neomycin.

Topical acyclovir is NOT a contraindication to immunisations.

**Common side-effects**

More than 1 in 10 will get erythema, pain, swelling and itching at the injection site.

More than 1 in 100 will get haematoma, pain, induration, warmth at injection site, or headaches.

Fewer than 1 in 10 000 will get chickenpox.

Remember, this is a new vaccine and any possible adverse events/interactions should be reported to the MHRA via the yellow card scheme.

**Who are the at-risk groups for flu and pneumococcal jabs?**

I have summarised these risk groups below.
<table>
<thead>
<tr>
<th>Condition</th>
<th>At-risk groups for INFLUENZA (from 6m to 65y)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnant women</td>
<td>Pregnant women in all trimesters</td>
</tr>
<tr>
<td>Diabetes</td>
<td>Diabetes: type 1 and 2 regardless of treatment</td>
</tr>
<tr>
<td>Respiratory diseases</td>
<td>Children who ever been admitted with a LRTI</td>
</tr>
<tr>
<td></td>
<td>Asthma: if requiring continuous or repeated use of inhaled or oral steroids or with a previous exacerbation requiring an admission</td>
</tr>
<tr>
<td></td>
<td>COPD: including chronic bronchitis, emphysema, bronchiectasis</td>
</tr>
<tr>
<td></td>
<td>Fibrosis: cystic fibrosis, interstitial lung fibrosis, pneumoconiosis</td>
</tr>
<tr>
<td></td>
<td>Bronchopulmonary dysplasia</td>
</tr>
<tr>
<td>Cardiac conditions</td>
<td>Congenital heart disease</td>
</tr>
<tr>
<td></td>
<td>IHD</td>
</tr>
<tr>
<td></td>
<td>Chronic heart failure</td>
</tr>
<tr>
<td></td>
<td>Hypertension with cardiac complications</td>
</tr>
<tr>
<td>Chronic kidney disease</td>
<td>CKD 3, 4 or 5</td>
</tr>
<tr>
<td></td>
<td>Kidney transplant</td>
</tr>
<tr>
<td></td>
<td>Nephrotic syndrome</td>
</tr>
<tr>
<td>Liver disease</td>
<td>Cirrhosis</td>
</tr>
<tr>
<td></td>
<td>Biliary atresia</td>
</tr>
<tr>
<td></td>
<td>Chronic hepatitis</td>
</tr>
<tr>
<td>Neurological disease</td>
<td>CV/A/TIA</td>
</tr>
<tr>
<td></td>
<td>Neurological conditions which affect respiratory function</td>
</tr>
<tr>
<td></td>
<td>Case by case decision for cerebral palsy, MS, hereditary/degenerative conditions of nerves/</td>
</tr>
<tr>
<td></td>
<td>muscles or severe neurological disability (any cause)</td>
</tr>
<tr>
<td>Immunosuppression due to</td>
<td>Undergoing immunosuppressive chemotherapy</td>
</tr>
<tr>
<td>disease or treatment</td>
<td>Asplenia/splenic dysfunction</td>
</tr>
<tr>
<td></td>
<td>HIV at all stages</td>
</tr>
<tr>
<td></td>
<td>Oral steroids for more than a month: those on or likely to be on oral steroids at &gt;20mg/d</td>
</tr>
<tr>
<td></td>
<td>(children weighing &lt;20kg, &gt;1mg/kg/d)</td>
</tr>
<tr>
<td></td>
<td>Household contacts of those with significant immunosuppression</td>
</tr>
<tr>
<td>Long stay residential homes</td>
<td>Only where rapid spread is likely to cause high morbidity and mortality, this DOES NOT include</td>
</tr>
<tr>
<td></td>
<td>prisons, university halls of residence</td>
</tr>
<tr>
<td>Carers</td>
<td>Including those who are the main carer for someone who is elderly or disabled and whose welfare may be at risk if the carer falls ill</td>
</tr>
<tr>
<td>Health and social care staff</td>
<td>Those with direct patient contact through an EMPLOYER occupational health programme (i.e. not</td>
</tr>
<tr>
<td></td>
<td>through the GP, unless you are the employer!)</td>
</tr>
</tbody>
</table>
Historically Public Health England have recommended if more than one live vaccine is needed in an individual, they should either be given on the same day or at least 4w apart. This is because it was felt that the immune response produced by one vaccine may interfere with that produced to the other. However, they have recently reviewed the evidence and changed their recommendations (PHE April 2015). First a reminder on the live vaccines currently used in the UK.

<table>
<thead>
<tr>
<th>Routine schedule vaccines</th>
<th>Travel vaccines</th>
<th>Special situation vaccines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotavirus</td>
<td>Oral typhoid</td>
<td>Varicella</td>
</tr>
<tr>
<td>MMR</td>
<td>Yellow fever</td>
<td>BCG</td>
</tr>
<tr>
<td>Live attenuated influenza (nasal)</td>
<td></td>
<td>Tuberculin Mantoux test</td>
</tr>
</tbody>
</table>

All combinations can now be given at any time interval with the exception of the following combinations with MMR:
<table>
<thead>
<tr>
<th>Other live vaccine indicated</th>
<th>Recommended interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMR +</td>
<td></td>
</tr>
<tr>
<td>Yellow fever</td>
<td>4+ weeks, next same day</td>
</tr>
<tr>
<td>Varicella/zoster</td>
<td>Same day or 4+ weeks</td>
</tr>
<tr>
<td>Tuberculin Mantoux test</td>
<td>4+ weeks if tuberculin test already given prior to MMR with wall road unless urgent measles protection is needed</td>
</tr>
</tbody>
</table>
Changes to the immunisations schedule for the UK

- Meningitis B has been added to the infant schedule: doses at 2, 4 and 12m. It can cause high fevers.
- Advise parents to administer 2.5ml liquid paracetamol at the time or shortly after the vaccine and repeat for 2 further doses 4–6h later.
- Meningitis ACWY vaccine has replaced the men C booster at age 14 (through schools programme) and been introduced as a GP-led catch up programme for year 13 students and 1st time university students aged <25y.
- Influenza will be offered to all healthy children aged 2–17y as well as to those in at-risk groups, in 2015 it will be given to 2,3 and 4 year olds and school years 1 and 2. This will be given nasally.
- Rotavirus immunisation has been added to the infant immunisation schedule: 2 oral doses are given at 2 and 3m.
- A shingles vaccine is offered to those aged 70y as a sub-cut injection.
- There have been changes in the advice about co-administration of live vaccines.

For professionals:
The latest version of the green book is available online at:
Although I find it simpler to Google ‘Green book’ and as if by magic it appears!!
There is a video showing you how to administer Fluenz on the manufacturers website:
www.fluenzvaccine.co.uk/fluenz-administration-and-dosing/
Details of the complicated meningitis ACWY catch programme can be found here:
http://tinyurl.com/GPU-MenACWY

We make every effort to ensure the information in these pages is accurate and correct at the date of publication, but it is of necessity of a brief and general nature, and this should not replace your own good clinical judgement, or be regarded as a substitute for taking professional advice in appropriate circumstances. In particular check drug doses, side effects and interactions with the British National Formulary. Save insofar as any such liability cannot be excluded at law, we do not accept any liability for loss of any type caused by reliance on the information in these pages.

GP Update Limited
April 2016
Our comprehensive one-day update courses for GPs, GP STs, and General Practice Nurses.

We do all the legwork to bring you up to speed on the latest issues and guidance.

All our courses are:
- Relevant: Developed and presented by practicing GPs and immediately relevant to clinical practice.
- Challenging: Stimulating and thought-provoking.
- Unbiased: Completely free from any Pharmaceutical company sponsorship.
- Fun: Humorous and entertaining – without compromising the content!

Are they for me?
Our courses are designed for:
- GPs, trainers and appraisers preparing for appraisal and revalidation or wanting to keep up to date across the whole field of general practice.
- GP ST1, 2 & 3, looking for the perfect launch pad into general practice and help with AKT and CSA revision.
- GPs who want to be brought up to speed following maternity leave or a career break.
- General Practice Nurses, especially those seeing patients with chronic diseases.

What’s included?
- 6 CPD credits in a lecture based format, with plenty of time for interaction, humour and video clips, to keep you focused and awake.
- A printed copy of the relevant Handbook including the results of the most important research in primary care over the last 5 years and covering the subjects more extensively than possible in the course.
- 12 months subscription to www.gpcpd.com. With three times the content of the handbook, it allows you to capture CPD credits as you read on the site and use it in consultations! It also comes with focussed learning activities to double your CPD credits...at the end of the year you simply upload everything ready for your appraiser!
- Buffet lunch and refreshments throughout the day!

What’s not included? Our courses contain NO theorists, NO gurus, NO sponsors, NO reps on the day! Just real life GPs who will be back at the coal face as soon as the course has finished.

www.gp-update.co.uk
The GP Update Course – our flagship course!

With the amount of evidence and literature inundating us, it can be hard to know which bits should change our practice, and how. The GP presenters summarise and discuss the results of the most important new evidence and guidance, concentrating on what it means to you and your patients in the consulting room tomorrow.

**ALL OUR 2016 COURSES**

**The Women’s Health Update Course**

From the pill to pelvic pain, periods and prolapses, this one day women’s health update is a comprehensive guide to understanding and managing common gynaecological problems in general practice. The subjects are covered in a much greater depth than is possible on the GP Update course and includes simple ideas which we as GPs have found helpful in our consultations.

The day is designed for all GPs and GP STs – not just those with a special interest!

- **Edinburgh** Thu 23 Jun
- **Newcastle** Fri 24 Jun
- **Birmingham** Thu 30 Jun
- **London** Fri 1 Jul
- **Exeter** Thu 3 Nov
- **London** Fri 4 Nov
- **Leeds** Thu 10 Nov
- **Manchester** Fri 11 Nov

**The Cancer Update Course**

Since 2012, Red Whale | GP Update has joined forces with Macmillan Cancer Support to provide a course that gives all GPs the knowledge and inspiration they need when dealing with cancer. From cancer prevention, screening, diagnosis and treatment to palliative care.

2015 has seen the biggest shake up in cancer in the last 10 years with the publication of the updated NICE guidelines on suspected cancer. If, like many of us in England & Wales, you are still finding your way around them, then this course will definitely help!

- **Leeds** Thu 16 June
- **Birmingham** Fri 17 June
- **Bristol** Thu 23 June
- **London** Fri 24 June
- **Manchester** Thu 10 Nov
- **Birmingham** Fri 11 Nov
- **Cambridge** Thu 17 Nov
- **London** Fri 18 Nov
Lead. Manage. Thrive! – The NEW management skills course for GPs.

Sometimes it feels like the thriving GP is an endangered species – demands on limited time and resources have never been higher. Our practices run in ever more complex ways and our teams extend beyond the practice walls. Often we get that instinctive feeling that there must be a better way to do things but creating the space to make it happen can be difficult.

As usual Red Whale has done all the legwork to bring you a concise, practical and actionable one day course and handbook. Not only have we trawled through lots of relevant management, leadership and development literature, but we have also distilled its content through the lens of real GPs, enabling you to apply it to the reality of your practice.

Manchester  Fri 24 June
London       Fri 1 July

Our Consultation Skills Courses

One day small group courses designed for GPs, GP STs and General Practice Nurses.

The courses have a practical focus and lots of engaging exercises allowing delegates to rehearse the most effective consultation behaviours. But don’t worry, there won’t be any role playing in front of everybody!

The Telephone Consultation Course

With the increased importance of telephone consultations this course aims to deliver practical skills which can be put to use immediately. The telephone is being used more and more by nurses as well as doctors in primary care, for triage, consultation and follow-up; in the daytime as well as out of hours. Our goal is to help you overcome difficulties and leave you with concrete ideas to enhance your own telephone contacts with patients.

Leeds         Tue 10 May
Birmingham    Fri 20 May
London        Thur 9 June
London        Thur 6 Oct
Manchester    Thur 13 Oct

The Effective Consultation Course

The Course focuses on behaviours which enhance effective use of time in the consultation. Efficient consultations reduce clinical risk and lower the risk of complaints and lawsuits. The course uses the rich evidence base on which consultation behaviours enhance effectiveness and how to go about learning them. We focus on actions and you will leave with many practical tips to use in your consulting room the following day.

London       Fri 13 May
Manchester   Thur 19 May
Leeds        Wed 5 Oct
London       Fri 25 Nov

The Medically Unexplained Symptoms Course

A significant proportion of patients who present to us will turn out to have symptoms that are medically inexplicable. We all know that there is no magic solution with these patients and sometimes they leave us feeling defeated and not sure what to do. However, there is evidence which can help address the issue.

London       Thur 12 May
London       Thur 20 Oct

Prices:

GP Update Course:
GP £195 | GP Registrar £150 | Nurse £150

All other courses:
£225 or £210 for members of www.gpcpd.com

(GPCPD members, please log in and then click on the relevant button within the 'Member information' box on the right of the home screen to get your discount code)
I would like to come on the following course(s) (please write legibly!):

- The GP Update Course (location) ............................................................. (date).........................
- The Women’s Health Update Course (location) ............................................................. (date).........................
- The Cancer Update Course (location) ............................................................. (date).........................
- Lead. Manage. Thrive! The management skills course (location) ............................................................. (date).........................
- The Telephone Consultation Course (location) ............................................................. (date).........................
- The Effective Consultation Course (location) ............................................................. (date).........................
- The Medically Unexplained Symptoms Course (location) ............................................................. (date).........................

I can’t attend a course but would like to order your Handbook or DVD

- GP Update Handbook and 12 months access to GPCPD £150
- GP Update Handbook, DVD and 12 months access to GPCPD (pre-order for shipment mid May 2016) £225
- Women’s Health Update Handbook £70
- Cancer Update Handbook £70

For downloadable information on becoming a presenter with us please visit: www.gp-update.co.uk/team Or email team@gp-update.co.uk

To book: Online at www.gp-update.co.uk or call us on 0118 9607077 or use the form below

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- Women’s Health Update Handbook £70
- Cancer Update Handbook £70

Price as stated above for each course. If applicable, please provide your discount code here .............................................................

Please send this form with your cheque payable to GP Update Limited to:

GP Update, The Science and Technology Centre, Earley Gate, Whiteknights Road, Reading RG6 6BZ

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