Elective & STP advice

Elective: From conception to cradle

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Learning outcomes

- To gain more knowledge and understanding of infections during and post-**pregnancy** (RFH)
- To carry out **audit** and educational training on Group B Streptococcus to Obs, Gynae and Micro
- To understand the effect and management of infections in **neonates** (GOSH)
- To observe in sexual health clinical the presentations of common **STIs** and POCT and so laboratory role at the front line (Marlborough)

Good Scientific Practice (AHCS)

- Professional Practice
  - Probity, Working with Colleagues, Training and developing others
- Scientific Practice
  - Scientific Practice, Technical Practice, Quality
- Clinical Practice
  - Clinical Practice, Investigation and Reporting
- Research, Development and Innovation
- Clinical Leadership

Maternity, Labour & Antenatal

- Antenatal clinics & Ward rounds with doctors (Labour and Antenatal)
  - UTI
  - Thrush, BV
  - STI incl. HIV
  - GBS
  - Infected scars
  - Sepsis
    - Anaemia, Endometriosis, Miscarriage, Still birth, Mental health problems, Asthma
  - C-section

Clinical case

- 34 yr old Female, 28/40
- PMH: sickle cell, ectopic pregnancy, History of endometriosis & **Herpes Simplex Virus**
- This pregnancy: Thrush, UTI, slightly low haemoglobin, **recurrent herpes**, pericardial effusion (baby) on scan
- Management: Trx of UTI/Thrush where appropriate, prophylaxis for Herpes nearer term

Marlborough Clinic (Sexual Health)

- Consultations
  - Routine check up
  - Symptoms
  - Contraception advice
  - Pregnancy
  - Contact
- Examinations
  - Symptoms (pain, warts, discharge)
- Hot lab
  - BV, TV, Thrush, Gonorrhoea, pregnancy test, HIV POCT

Clinical case

- 22 year old male and female in relationship
- **Consultation:** Asked about past infections (M=Chlamydia 4 yrs ago), symptoms (N) and sexual history for last 3/52
- No examination as asymptomatic
- **Samples:** Urine (M), swab (F)
- **Results:** Chlamydia postive both
- **Health care advisor consultation:** Explanation on Chlamydia and that it has come from F
- **Treatment:** Both stat dose Azithromycin

ICDC Clinical case

- 45 year old MSM, HIV positive, Chlamydia contact 1 month ago. Since then 3 other sexual partners, all UPAI, CMP with patient being the active partner. No oral sex.
- Investigations: Swabs and examination
- Results: CT, GC negative, syphilis positive
- Treatment: Azithromycin 1g stat dose-4 tablets taken orally in one dose. Cryotherapy performed on anal warts. Both given and done at consultation.
- Follow-up: As syphilis was detected patient will need to return to clinic to be treated with IM benzathine penicillin G and will need to contact the 4 sexual contacts mentioned for them to be treated and tested too.
- Social problem of partner notification highlighted

Reflective

- Sensitive nature of healthcare issues related to these high-risk groups
- Vast amount of people involved in patient care
- Impact that lab results have on patient management
- Difficult situations
- Out of comfort zone
- Lucky to have opportunity
- Highlighted education

How experience will shape future practice?

- Keep up to date with changes in vaccines or management strategies for infections in pregnancy
- Will allow me to re-audit with people I have built up good relations with
- Re-emphasised to me particular areas of interest
- Remind oneself of clinical impact and individual patient when processing samples in laboratory
- Critical thinking on education/audits and laboratory procedures

GBS audit

- Confusion over when to ‘screen’, what samples to take and subjectivity with regards to following guidelines on when to take samples and/or give IAP.
- Lab results Oct 2012-Oct 2013
- 44 questionnaires

Royal Free London NHS
NHS Foundation Trust

Group B Streptococcus

My name is Samantha Horridge and I am a Trainee Clinical Scientist from microbiology conducting a naudit project on sampling for GBS in pregnant women and the guidelines related to this.

I am distributing this questionnaire to staff in Obstetrics and Gynaecology (wards, clinics and community) and Microbiology (laboratory and medics) to investigate current knowledge and whether practice is following current guidelines.

Answers given will remain anonymous.

I would greatly appreciate your time to fill in this brief Questionnaire,

Thank you

Job Title: _____

1. From evidence, what percentage of women are thought to be colonised with GBS in their genital tract?
   - <15%
   - 15-30%
   - 30-45%
   - 45-60%
   - >60%
2. From which site(s) is/are sample(s) taken for optimum detection of GBS in pregnant women? You may choose more than one:
   - LVS
   - HVS
   - Endocervical
   - Vaginal
   - Rectal
   - Urine
3. In what circumstances would you take a genital (HVS, LVS, Endocervical etc.) swab from a pregnant woman?

   _____

   _____
4. In what circumstances would you take a sample to specifically test for GBS in a pregnant woman?

   _____

   _____

Royal Free London NHS
NHS Foundation Trust

5. If pregnant woman, 20 weeks into pregnancy, is incidentally found to be colonised with GBS but is completely asymptomatic, would you treat?
   - Yes
   - No
6. If a pregnant woman is found to have an infection where GBS may be the cause, would you treat?
   - Yes
   - No
7. In what circumstances would intrapartum prophylaxis (IAP) be given? You may select more than one:
   - To a known GBS colonised woman in labour
   - To a woman with fever during labour
   - To a woman who has had GBS found in urine during pregnancy
8. And with regards to second pregnancies? You may select more than one:
   - To a woman giving birth to second child where in their first pregnancy they were GBS *colonised*
   - To a woman giving birth to second child where in first pregnancy the child developed Group B neonatal sepsis
   - To a woman who has had a infection which may have been attributable to GBS during her pregnancy
9. What is the biggest concern regarding a woman with GBS in labour?
   - The neonate developing early onset sepsis
   - The neonate developing late onset sepsis
   - Meningitis
   - Woman getting ill post-delivery
   - Stillbirth of baby

Questions

- % of women colonised with GBS?
- Optimum sites to take samples from?
- Circumstances where you would take a sample from a pregnant woman?
- Circumstances where you would take a sample specifically for GBS?
- Treatment (symptomatic and asymptomatic women)?
- Intrapartum prophylaxis?
- Main concern with GBS infection in neonate?

Summary of findings:

- Midwives and Drs believed higher % of women were colonised
- Discrepancies with what site to swab
- Most knew when to use prophylaxis
- Most recognised EOGBS as the biggest concern
- Midwives tended to give wide range of answers

Fact sheet

Group B Streptococcus Information Sheet

Screening for GBS: Remains controversial and more evidence is needed.

- From evidence- 15-30% of women carry GBS in the vagina. Vaginal carriage can be transient, so women previously found to be colonised may be negative when retested at a later date and other previously negative women may be found to be positive. Of those colonised at the time of labour, 50-70% will pass GBS onto the neonate, but only 1% (according to LeDoare & Heath, 2013) of these colonised babies will develop GBS disease. There are certain risk factors where the risk of a baby developing GBS disease and the UK currently act on these risk factors rather than screening all pregnant women.
- **Routine bacteriological screening of all pregnant women for antenatal GBS carriage is not recommended in the UK (RCOG guidance)**
- **At Royal Free London NHS Foundation Trust we offer screening for women who request it**
- **A negative screen during pregnancy is not a guarantee that a woman will be negative for GBS during labour. She will still be given intra-partum prophylaxis if she has risk factors (see below)**

Intra-partum Antibiotic Prophylaxis (IAP) indications for use (RCOG and Royal Free guidance):

- GBS detected on a vaginal swab in the current pregnancy.
- GBS bacteriuria identified in current pregnancy
- Women with a previous baby affected by neonatal GBS disease
- Women who are pyrexial in labour (>38°C).
  - Women who are pyrexial in labour should be offered broad-spectrum antibiotics including an

Intra-partum Antibiotic Prophylaxis (IAP) NOT indicated (RCOG)

- Women undergoing planned caesarean section in the absence of labour and with intact membranes
- Women presenting in established preterm labour with intact membranes with no other risk factors and no known colonisation
- Women where GBS carriage was detected in a previous pregnancy but baby was not affected
  - This can be discussed on a case-by-case basis though
- Unclear evidence for women with term pre-labour rupture of membranes

Urine is the most common sample for incidentally finding GBS

Best samples for optimum GBS detection are LVS and Rectal swabs taken at the same time

Fact sheet

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Guidelines and New testing

From 1 January 2014, an improved test for Group B Streptococcus is available in Public Health England's Eight Regional Laboratories in England

ECM GBS Testing

Group B Streptococcus

GBS (*Streptococcus agalactiae*) is recognised as the most frequent cause of severe early-onset (age 0-6 days) infection in newborn infants. The incidence of early-onset group B Strep (EOGBS) disease in the UK in 2000 was 0.5/1000 births[1] and reports to the Health Protection Agency of culture proven disease have increased by about 50% over the last decade[2].

GBS colonises the intestines of many men and women. Up to 30% of women carry GBS in the vagina or rectum without it causing problems or symptoms[3,4]. Carrier status is best identified by LOW VAGINAL and RECTAL swabs (NOT a high vaginal swab).

What culture test should be used?

Currently, most NHS pathology services use culture media which is 'general purpose' and only identifies GBS in about 60% of carriers. At the request of the Chief Medical Officer Prof Dame Sally Davies, from 1 January 2014 the 'Enriched Culture Medium' (ECM) test is available throughout England. This will identify about 90% of carriers and is the 'gold standard' for this purpose, using Public Health England's Regional Laboratories' Standard Operating Procedure. The results of this GBS test are about 85% predictive of carriage status for up to 5 weeks[5] (the shorter the interval since testing, the more likely the status is to remain the same). It should be used whenever there is an indication to identify GBS carriage. Routine screening of all pregnant women is not recommended by the UK National Screening Committee[6].

How to test for group B Strep carriage:

When? If there is an indication for GBS testing to predict carriage status at delivery, the best time to take swabs is between 35-37 weeks of gestation.

Where? Swab the lower vagina (vaginal introitus) and the rectum with the same swab or two swabs. Women can take these swabs themselves if they prefer.

How? Use swabs for bacterial culture, then place them in Amies transport medium with charcoal[7]. **Label 'for GBS culture in ECM medium' on the request form.** Your local laboratory will then ensure that the correct test is done.

What happens next?

The result The result should in most cases be available after 48 hours of culture. **It is the responsibility of the health team to ascertain the result, record it in the medical notes, and inform the woman concerned and her health team.**

Negative Inform the pregnant woman and her health team. **Intrapartum antibiotic prophylaxis (IAP) should not be offered unless known risk factors[8,9] are present.**

Positive Inform the pregnant woman and her health team. No treatment or prophylaxis is required **until the onset of labour**. GBS is not a cause of vaginal discharge, although it can cause urine infections. **As soon as possible once labour starts, offer the mother intrapartum antibiotic prophylaxis (IAP).**

IAP Intrapartum antibiotic prophylaxis (IAP) should be offered to the mother as soon as possible once labour has started using Benzylpenicillin[8,9]. The recommended dosing regimen is 3 g intravenously, followed by 1.5 g intravenously every 4 hours. In women known to be allergic to penicillin, Clindamycin 900 mg every 8 hours is the recommended alternative.

To achieve optimum efficacy of IAP, the first dose should be given at least 2 hours before delivery[8].

IAP has been shown to reduce the risk of culture-positive early-onset GBS disease by up to 90%[10] (but does not reduce late-onset GBS disease, occurring 7 or more days after birth).

If chorioamnionitis is suspected, women should be offered broad-spectrum antibiotics[8] including an antibiotic for prevention of EOGBS disease.

SCBU/NICU Inform the neonatologist of the mother's GBS carrier status if there are any neonatal problems.

Limitations/ Problems encountered

- Number of people
- Timing
- Questionnaires
- ‘Vaginal swab’ should have been excluded as an option for site
- Follow-up of those writing ‘Previous GBS’
- Getting information to everyone
- Subjectivity & own judgement
- Re-audit

Acknowledgements

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- Owen Billington & Damion Cotterill

STP & HSST

- 2011-2014
  - Royal Free Hospital, St Georges, PHE (Colindale)
- 2014-2019
  - UHCW NHS Trust

Advice

- Competencies vs. experience
- Map out and plan your training
- Take and make opportunities
- Respect
- Ask for help

Personal g

GOALS

Short term goals: Gain registration post completion of STP training, settle into new job role

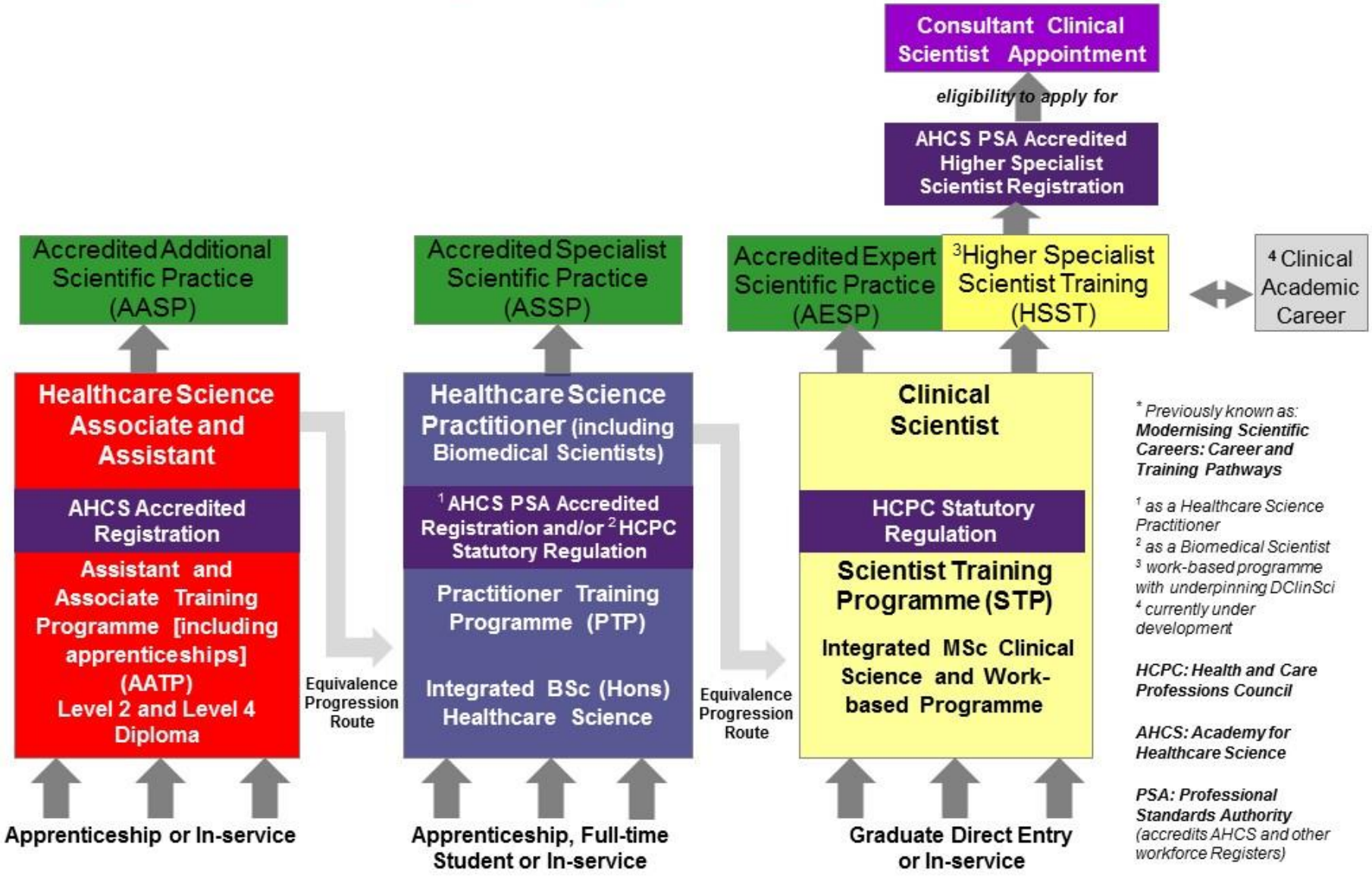
Medium term goals: Be confident in position as band 7 scientist in the laboratory and in liaison role, building good relationships with people in the hospital. Get good amounts of clinical exposure and build on experience and knowledge in giving treatment advice and taking part in multidisciplinary meetings building a thorough record of cases. Balance work and life outside of work well and continue to manage stress effectively so it impacts minimally on job and personal life/health.

Long-term goals: Complete the HSST if I enjoy it and feel it is the right thing for me to continue with and FRCPath part 2. Have an influential role within the laboratory and clinical side of microbiology using effective people skills and a senior/manager position to make a difference to this area of science.

AHCS

Clinical Scientist	Complex scientific and clinical roles. High risk, low volume activities which require highly skilled staff able to exercise clinical judgement about complex facts and clinical situations. Training through Scientist Training Programme (STP)	STP (Scientist Training Programme) – postgraduate degree (Masters-level) with clinical placement
Consultant Clinical Scientist	In-depth, highly complex role. Similar to medical consultant role as requires clinical judgement, scientific expertise, leadership and dealing with uncertainty in direct patient care. Training through Higher Specialist Training (HSST) programme.	HSST (Higher Specialist Scientific Training) at doctorate level

* Career and Training Pathways for the UK Healthcare Science Workforce



* *Previously known as:* ***Modernising Scientific Careers: Career and Training Pathways***

[1] *as a Healthcare Science Practitioner*
[2] *as a Biomedical Scientist*
[3] *work-based programme with underpinning DClinSci*
[4] *currently under development*

HCPC: Health and Care Professions Council

AHCS: Academy for Healthcare Science

PSA: Professional Standards Authority *(accredits AHCS and other workforce Registers)*

as of July 2017

Opportunities

- Laboratory
- Development/innovation/improvement
- Research/PhD
- Public Health
- Teaching
- Management
- Clinical

Questions and contact details

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