# DNA ANALYSIS SPECIALIST GROUP

## Notes of the nineteenth meeting, held at 11:00am on 11 December 2014, at 5 St Philip's Place, Colmore Row, Birmingham

## Item 1.0: Opening and welcome

1.1 The Chair welcomed those present and the new Forensic Science Regulator (FSR) Gill Tully to the 19th meeting of the DNA Analysis Specialist Group. The FSR thanked DNASG members for their goodwill in giving up their time and efforts in supporting the delivery of quality standards to forensic services. She planned to use her first few months to meet all key stakeholders.

1.2 See Annex A for full list of attendees and apologies.

## Item 2.0: Minutes from the last meeting

2.1 The reference to the Forensic Science Society should be changed to the Chartered Society of Forensic Sciences.

2.2 The minutes of the meeting on 19 June 2014 were agreed subject to the above amendment.

## Item 3.0: Matters arising

3.1 Peter Gill's presentation - Trace evidence (examples of poor reporting): It was agreed that the presentation should be re-circulated and members should send comments to Kenny by the end of January.

**Action 1: Kenny to re-circulate presentation on trace evidence and members to send their comments by the end of January[1]**

3.2 DNA Primer Paragraph 3.8: The two actions here were still outstanding.

**Action 2: Huw Turk/Andrew McDonald to send June the Cellmark document for jurors**

**Action 3: John Lowe/Des Van Hinsbergh to send June the Key Forensics DNA appendix**

[1] Trace evidence presentation re-circulated

3.3 Profiles for the Middle Eastern population group: Denise Syndercombe-Court had not yet received samples from individuals that fall into this category and therefore had no profile data to send to Adam Shariff.

3.4 The other actions were either cleared or were agenda items.

## Item 4.0: Standards

QA/QC workshop 4.1 Three questions were discussed at the workshop:

- How QA/QCs are currently used
- What QA/QCs can be safely covered through validation or some other way
- What QA/QCs are essential in live operations

4.2 The workshop was unable to determine whether current QA/QCs were adequate. The workshop also discussed the future development of Rapid DNA platforms and what was needed in terms of an appropriate QA/QC system regime. There was information that required distilling and how this task should be undertaken in terms of agreeing minimum requirements needed to be addressed. There were potential gaps with regards to proficiency testing, quality testing and batch testing of kit from suppliers.

4.3 It was suggested that consistency was necessary and uniform requirements could minimise unnecessary testing. However, it was accepted that PAS 377, the specification for consumables used in the collection, preservation and processing of material for forensic analysis, was not adequate enough for all that was required. Standardised guidelines for all would be difficult in a multiple kit arena. However, some form of positive control was still needed. The focus of the NDNAD had always been on lab-based technology in terms of process controls.

4.4 The next steps was for the group to provide advice to the Regulator, whether the current QA/QC was fit for purpose when wrapped around the end to end process including environmental monitoring. It was necessary for the Regulator to develop a process that took account of minimum QA/QC requirements, but with the flexibility necessary for a multiple kit arena. When the DNA appendix to the Regulator's Codes was reviewed for updates, the requirements resulting from the workshop would be included in that review.

**Action 4: June Guiness to convene sub–group meeting and develop QA/QC output into a table for agreement at the next DNASG meeting**

4.5 The Regulator was keen to provide guidance to forces especially those piloting Rapid DNA platforms. She felt there were gaps with proficiency

testing, batch testing and instrument monitoring and wanted to provide some guidance.

4.6 It was agreed that a table to be inserted into the appendix should be produced; the table should cover the different types of controls that could be used, batch testing, proficiency and competency. Manufacturers input should also be considered. A small group volunteered to translate the output from the workshop into a draft table intended for the appendix for discussion at the next DNASG meeting.

**Action 5: June Guiness, Susan Hales, Shirley Marshall, Adam Shariff, Jim Thomson, Des Van Hinsberg and Matt Greenhalgh agreed to form working group and produce a draft table for the appendix from the output from the workshop**

Mixture PT/guidance appendix

4.7 A workshop was held on DNA mixture interpretation following the results returned from the Forensic Service Providers (FSPs). The FSPs have since been asked for updates or changes to their returns. The final report will be completed by the end of January and will be circulated to the DNASG. Representatives of FSPs were asked to ensure that any further information should be sent as requested before Christmas for it to be included in the final report. The report was expected to make recommendations for improvements. The DNASG will advise the Regulator on progressing any improvements identified.

Blood visual screening requirements

4.8 The requirement in the Code of Practice around accreditation of blood screening included competence in low power microscopy (LPM). There had been some queries and it was necessary to clarify where LPM was appropriate, how and why there were any exceptions to the requirement to use LPM. There was also an issue of training for LPM. The DNASG accepted that there was a grey area between screening and searching. The DNASG clarified that if the purpose of the task was to look for blood, then the use of LPM was a mandatory requirement.

Activity level reporting with new multiplexes

4.8 FSPs were asked whether they were undertaking any activity level reporting since the move to new chemistries and whether they had the appropriate data sets that they could rely on since SGMPlus data was no longer really applicable. LGC reported that they were doing some work on this and hoped to publish it in due course.

## Item 5.0: Cleaning and Environmental Monitoring

Anti-contamination - update

5.1 The protocol for elimination databases had been published. The documents detailing the business process and guidance on laboratory and scene of crime needed to be finalised and published for a short targeted consultation possibly in January for eight weeks. June Guiness agreed to send out a link to all the consultation documents once they were published on the Regulator's web page to the DNASG for comment.

**Action 6: June Guiness to send out a link to the DNASG for the anti-contamination consultation documents when published.**

Cleaning validation

5.2 This item was put on hold until the next meeting.

ATP testing – FSNI

5.3 Brian Irwin gave a presentation on ATP (Adenosine Triphosphate) testing which was a result of work done last year by FSNI in preparation for the DNA17. The use of ATP-based luminometry methods had been common practice in hospitals and the food and beverage processing industry for many years because it could indicate the degree of cellular contamination on a surface in real time, by the use of enzymatic processes that produced luminescence. An instrument known as a luminometer was used to measure the light emitted by a swab taken from a surface.

5.4 FSNI explored the use of handheld ATP monitors and the benefits were simplicity, costs and immediacy of results. The approach had the potential to support or replace the existing process of generating DNA profiles for swabbed surfaces in order to assess background surface DNA contamination levels, for example, after clean-down of an examination room. It was not be a replacement for all environmental monitoring, but could produce quick results, was not costly and provided a high level of cleanliness. ATP testing could also feed into lab and scene of crime protocols and June Guiness would consider adding this application to the anti-contamination guidance's in progress.

5.5 Copies of the presentation slides and a background paper on ATP testing by FSNI will be circulated with the minutes of the meeting.

**Action 7: Kenny to circulate copies of the ATP presentation and background paper**

## Item 6: Futures

Good practice in sex offence cases – routine and specialist processing

6.1 A variety of technologies were now available to identify, recover, extract DNA and generate profiles from biological material. The DNASG was asked to consider and advise the Regulator on:

- Techniques that should be used as good practice for sex offence cases, for example if identifying male DNA was significant then if no spermatozoa were identified should male quant be mandatory in order to determine follow up work.
- Any research or data studies that exist or are required
- Suggestions for possible mechanisms for availability and capability in the UK for specialised testing such as Y- STR

6.2 It was important to ensure that key stakeholders were aware of all the capabilities that existed. There was an observation that the UK was using Y-STR profiling less than the rest of the world. There was reluctance by some forces to use this technology and this was possibly due to a lack of understanding where Y- profiling could be useful. However, there was no move towards routine profiling and a nationally held Y-STR database for cost and ethical reasons. This did not exclude Y- STR profiles being held for unsolved crime stains as these were not associated with a named individual.

6.3 Cellmark were encouraging forces to use Y-STR profiling in certain types of sex offence cases and Cellmark had a paper in press on obtaining Y-STR profiles where no spermatozoa were detected. The group thought it would be useful to find data from other countries that would demonstrate the frequency and usefulness of the technique. Y-STR profiling was routine in the Netherlands, their experience could be useful as evidence and June Guiness had data from New Zealand that was a few years old. It would also help to know if there were any such countries with a Y-STR database excluding the population reference Y-STR database held in Berlin. A possible source for accessing such information was possibly through the ENFSI DNA WG and June Guiness agreed to approach the chair of the biology sub- working group as to whether the group would consider this topic.

**Action 8: June Guiness to raise this with the chair of the ENFSI DNA biology sub- group for consideration**

6.4 The Met Police reported that they were planning to pilot using Y-STR profiling as part of their routine sex offence casework. Lesley Probert agreed to provide feedback to the DNASG on the success or otherwise on the use of Y-STR profiling for the Met Police casework.

**Action 9: Lesley Probert/Kathryn Dagnall to provide feedback to the DNASG on use of Y-STR profiling for the Met Police casework.**

6.5 The DNASG considered whether there were recent studies (transfer, persistence and time since Intercourse studies) using the latest techniques in sex offence cases. It would be necessary to feed any such studies into god and anti-contamination practices. Such evidence was needed to support the guidance. The Body Fluids Forum (a group under the auspices of the AFSP) was suggested as a possible source of information as they had a program of work being conducted and provided the best practice to the AFSPs to implement.

**Action 10: June Guiness agreed to investigate if the Body Fluids Forum has conducted any recent studies using the latest techniques in sex offence cases or if their current planned program of work included such studies.**

## Item 7: Professional and Scientific updates

ENFSI

7.1 The DNASG discussed the need to have a more proactive engagement with ENFSI from UK members. UK members were encouraged to make presentations and influence what was going on at ENFSI. The next meeting was in Copenhagen in April 2015. Jim Thomson agreed to present the mixture PT document at ENFSI when it was finalised.

7.2 There were five ENFSI subgroups and a coordinated UK approach would be useful. The DNASG was an appropriate mechanism for facilitating a UK approach. It was pointed out that there was a perception at ENSFI that colleagues from private providers were interested in selling their products. The Regulator was happy to discuss this with Niels Morling. It was proposed that the work that was to be presented at ENFSI by UK members was being done at the request and on behalf of the Forensic Science Regulator.

Euroforgen

7.2 This item was put on hold until the next meeting.

IFSG – DNA Commission software validation

7.3 The International Society for Forensic Genetics had set up a commission on the validation of DNA-based identification software. June Guiness had been able to secure a place as a guest and attended the initial commission meeting. She circulated the IFSG questionnaire to representatives of FSPs for feedback prior to the meeting. June thanked the respondents as approximately half the responses were from the UK; this aided the discussions immensely at the commission meeting. The commission were to produce the initial draft with recommendations following that meeting.

7.4 The DNASG also discussed the situation with regards to the interpretation of evidence. The Regulator reported that reviving the Evidence Assessment Specialist Group was discussed by the FSAC. The current plan was to build on the Association of Forensic Science Providers' document on interpretation, adding more recent precedents in order to produce a guidance document. The Regulator also agreed to have another look at the need for interpretation software validation guidance.

**Action 11: The Regulator to look again at the need for guidance on interpretation software validation.**

## Item 8: Committee structures

8.1 The Regulator reported that she was trying to ensure that all her committees were as useful as possible, bearing in mind that members had to give up valuable time to participate. In this light, consideration was being given to reconfiguring the FSAC as a subgroup of the Home Office Scientific Advisory Committee. This meant that policy officials could commission independent advice from the FSAC on forensic science. It also meant that the DNASG would become co-opted under the FSAC. It was necessary for each specialist group to have a clear work plan and to be closed down when the work was completed. Most groups had quite a lot to do, but it was vital to get the meeting content and frequency right.

## Item 9: AOB

9.1 The DNASG were informed that there would be a retrial of the R v Dougherty and Ors case. The Home Office had received a disclosure request on the communications between the Home Office and Peter Gill. This followed the news coverage Peter Gill received concerning possible miscarriages of justice. The feedback on Peter Gill's paper in press sent to Peter Gill by June Guiness and the minutes of the last DNASG meeting fell within the scope of the disclosure request. All relevant information was disclosed. June Guiness had been advised by Ian Elkins (CPS) that the issues raised needed to be known to other DNA experts, therefore she agreed to provide the feedback on Peter Gill's paper that she received from Sue Pope, Adam Shariff and Jim Thomson for reporting officers to be aware of what was disclosed.

**Action 12: June Guiness to provide the feedback on Peter Gill's paper.**

9.2 Jeff Adams from the Regulator's office was going to send a communication to Scotland and Northern Ireland officials to make them aware of the issues.

9.3 Syntenic loci – It was agreed that those FSP's that hadn't submitted their process for dealing with syntenic loci should do so to Kenny Chigbo for him to send all responses to Roberto Puch-Solis for his consideration. Roberto was tasked with reviewing and submits paper to present options and recommendations for the DNASG to agree practice going forward.
**Action 13: Kenny to obtain the feedback on syntenic loci from FSPs and send to Roberto Puch-Solis.**

**Action 14: Roberto Puch-Solis to present paper at next DNASG on treatment of syntenic loci.**

9.4 The group were informed that ISO18385 on minimising the risk of human contamination in DNA kits was to be published for public consultation. The DNASG were requested to provide technical advice in light of the use of DNA17 kits whether the acceptable levels of contamination (four peaks) and use of QPCR (quantitative polymerase chain reaction) being proposed were

acceptable measures. June agreed to send an e-mail specifying the sections where feedback was essential for her to provide feedback to the public comment on the standard.

**Action 15: June to send an email for feedback on specific sections of ISO 18385 that technical advice is required.**

9.5 The DNASG were asked to note that the Protection of Freedoms Act project had been closed and was now business as usual.

## Item 10: Date of the next meeting

10.1 11 March 2015

Annex A

## Present:

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|---|---|
| Sue Pope | DNA Principal Forensics (Chair) |
| Matt Greenhalgh | Orchid Cellmark (for Huw Turk) |
| June Guiness | Forensic Science Regulation Unit |
| Susan Hales | Met Police (for Kathryn Dagnall) |
| Brian Irwin | FSNI |
| Ben Mallinder | Scottish Police Authority |
| Shirley Marshall | Chartered Society of Forensic Sciences |
| Lesley Probert | Met Police (for Shazia Khan) |
| Roberto Puch-Solis | Royal Statistical Society |
| Dorothy Ramsbottom | Forensic Science Laboratory, Ireland |
| Adam Shariff | Home Office NDNA Delivery Unit |
| Jim Thomson | LGC Forensics |
| Des Van Hinsberg | Key Forensic Services |
| Andy Ward | UKAS |
| Kenny Chigbo | (Secretary) |

## Apologies

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|---|---|
| Kathryn Dagnall | Met Police |
| Ian Elkins | CPS |
| Shazia Khan | Met Police |
| Denise Syndercombe-Court | International Society for Forensic Genetics |
| Huw Turk | Orchid Cellmark |

**Actions from December 2014**

| Action No. | Action | Owner | Deadline | Progress | Status |
|---|---|---|---|---|---|
| 1 | Kenny to re-circulate presentation on trace evidence and members to send their comments by the end of January | KC/All | End Jan 2015 | Presentation re-circulated | **In Progress**<br>**Completed**<br>**Superseded** |
| 2 | Huw Turk/Andrew McDonald to send June the Cellmark document for jurors | HT/AM | End Dec | | |
| 3 | John Lowe/Des Van Hinsbergh to send June the Key Forensics DNA appendix | JL/DVH | End Dec | | |
| 4 | June Guiness to convene sub–group meeting and develop QA/QC output into a table for agreement at the next DNASG meeting | JG | End Jan | | |
| 5 | June Guiness, Susan Hales, Shirley Marshall, Adam Shariff, Jim Thomson, Des Van Hinsberg and Matt Greenhalgh agreed | JG/SH/ SM/ AS/ JT/DVH/ AW | Mid Jan 2015 | | |

| Action No. | Action | Owner | Deadline | Progress | Status |
|---|---|---|---|---|---|
| | to form working group and produce a draft table for the appendix from the output from the workshop | | | | |
| 6 | June Guiness to send out a link to the DNASG for the anti-contamination consultation documents when published. | JG | End Dec | | |
| 7 | Kenny to circulate copies of the ATP presentation and background paper | KC | Mid Jan | | |
| 8 | June Guiness to raise this with the chair of the ENFSI DNA biology sub- group for consideration | JG | Jan 2015 | | |
| 9 | Lesley Probert/Kathryn Dagnall to provide feedback to the DNASG on use of Y-STR profiling for the Met Police casework. | LP/KD | Mid Jan 2015 | | |
| 10 | June Guiness to investigate if the Body Fluids Forum has conducted any recent studies using the latest techniques in sex offence cases or if their current planned program of work included such studies. | JG | End Dec | | |
| 11 | The Regulator to look again at the need for | GT | End Jan 2015 | | |

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|---|---|---|---|---|---|
| | guidance on interpretation software validation | | | | |
| 12 | June Guiness to provide the feedback on Peter Gill's paper | JG | End Dec | | |
| 13 | Kenny to obtain the feedback on syntenic loci from FSPs and send to Roberto Puch-Solis. | KC | Mid Jan 2015 | | |
| 14 | Roberto Puch-Solis to present paper at next DNASG on treatment of syntenic loci | | | | |
| 15 | June to send an email for feedback on specific sections of ISO 18385 that technical advice is required. | JG | Mid Jan 2015 | | |