DOCUMENT VERIFICATION

Prior to using this document, the user is responsible for verifying that the revision and effective date are current.

REVISION HISTORY

Rev.	Effective Date	Changes Made to Document
1	03-Dec-2021	First Issue

1. Content

2. Introduction

The purpose of this document is to summarise the Periodic Summary Report for DHSC COVID-19 self-test Kit size 3s and 7s where Xiamen Biotime is the contracted Manufacturer. This report covers the period 23rd October to 19th November 2021.

This report includes inputs from Intertek Inbound Testing, Product Complaints, Qualtrics survey, Real World Performance Monitoring, CAPAs, SCARs.

3. Methodology

The methodology for data collection was established in the PMS plan PMS-0001 Revision 2, dated 29-July-2021.

(Refer to Attachment 01)

4. Findings /Results

4.1 In-House manufacturing inspection at Biotime

There were no inspections carried out for the reporting period of 23rd October to 19th November 2021. This is following the conclusion of QC contract on the 30th August 2021. No further DHSC COVID-19 self-test Kit product has been procured during this reporting window.

4.2 Receiving inspection - Intertek Testing in the UK

No product has been procured from Innova in the specified reporting window of this report, meaning no QC activities have taken place during this time. There is no foreseeable procurement for Innova, therefore no foreseeable batch-release QC actions.

4.3 Product complaints

- DHSC has received a total of 67 complaints between 23rd October – 19th November 2021. Seven from MHRA (yellow card) and 60 from the Qualtrics survey.
- The number of kits distributed (3s, 7s and 25s) during this period was 9.4 million.
- No lot trend was identified during this period.
- Seven complaints have had the investigation completed and are due for final review before the complaints can be closed.
- Refer to Table 1 for a summary of MHRA Complaints.

Source Reference (Yellow Card)	Trending Category	Reportability	MORE Reference	Investigation status	Investigations Results
2021/010/020/501/007	Faulty test results	*Not Reportable	N/A	Complete	No Trend No further action
2021/010/013/501/004	Faulty Item	*Not Reportable	N/A	Complete	No Trend No further action
2021/010/027/501/003	Empty extraction buffer sachet	*Not Reportable	N/A	Complete	No Trend No further action
2021/010/027/501/001	Patient Injury	Reportable	**2021/011/003/601/500**	Complete	No Trend No further action
2021/010/029/501/001	Damaged Item	*Not Reportable	N/A	Complete	No Trend No further action
2021/011/001/501/008	Missing Item	*Not Reportable	N/A	Complete	No Trend No further action
2021/011/003/501/006	Empty extraction buffer sachet	*Not Reportable	N/A	Complete	No Trend No further action

Table 1:Summary of MHRA Complaints

***Not reportable : The reports did not include patient injuries and these complaints did not meet the reportability criteria set out in MED DEV 2.12 rev 8 vigilance standard and hence were decided to be non-reportable.**

4.4 Qualtrics survey

Summary:

In the previous reporting period, we reported on the implementation of the new Qualtrics survey which went live on 27th October 2021 to replace the old survey which ceased on 26th October 2021. For the purposes of this reporting period, there is a period overlap between the old and new Qualtrics survey, therefore we are reporting on both surveys.

Reasons for change in Qualtrics Survey:

- Change implemented to support improved reporting across all LFD brands
- Enhancements introduced to support more accurate product selection
- Question set change, delivering more detailed complaint categorisation

Post-live analysis has delivered immediate benefits:

- Complaints data is more accurately spread across products (representation of DHSC as well as other brands)
- Innova complaints volume has reduced as expected
- Improved categorisation of complaints is enabling more effective reporting and investigation (for UKHSA and LFD suppliers)
- End-user experience captured
- Continuous analysis of data planned to improve reporting quality

Survey Link: NHS Test and Trace LFD Test Survey (qualtrics.com)

Headline Figures (Old & New Survey):

- The total number of DHSC COVID-19 self-test Kit 3's,7's distributed during this period was 9.4 million which is a reduction of 22.6 million from the last reporting period.
- A total of 152 reports were recorded in the period of 23rd Oct – 26 Oct 2021 through the old Qualtrics Survey prior to the "go-live" date for the new Qualtrics survey.
- A total of total of 2158 reports from the new survey, of which only 436 reports were recorded for Innova during the period of 27th Oct – 19th November. This demonstrates a reduction in reports for Innova.
- A summary of the Innova LFD complaints from the new survey can be found in attachment 3 (LFD Complaints Breakdown).
- 1 Patient injury was received and has been reported to the MHRA (MORE Ref: 2021/011/003/601/500) refer to Table 1.
- There were 26 Reports for Damaged items for Innova.
- There were 28 Reports for Missing items for Innova.

(Refer to Attachment(s) 03, for data)

4.5 Combined Complaints Data (Yellow Card, Control Tower and Qualtrics Complaints) – Trending

Figure 1 shows the trending data for the combined LFD complaints received (Yellow Card, Through Control Tower and Qualtrics Complaints) vs distributed LFD test kits for the last reporting periods.

Alert and Action thresholds have been established using an average derived from the last reporting periods. These thresholds will remain consistent and will provide an ongoing benchmark for identifying trends through continual monitoring.

The data for this reporting period of 23rd October to 19th November2021 shows a rate of **0.071%** per 10,000 complaints which is above the Action limit 0.041%. To investigate this, a DHSC working group involving Regulatory, Quality, PMS, Complaints and Data Analyst has been assigned. Initial findings have identified that measuring the Total complaint (rate for all distributed LFD products) vs Complaints is not a reflective representation of performance.

Limitations of current methodology identified include:

1) Measuring against total complaint rates does not take into consideration other LFD brands, including some from private providers, which have been reported to DHSC, but where DHSC is not the legal manufacturer.

2) Measuring total distributed LFD's does not accurately represent DHSC LFD kits which may have been despatched but not registered or used. For this reporting period, 9.4 million DHSC LFD's were distributed vs 32 million in the previous reported period. It is therefore proposed to amend the metrics to take account of the number of used tests, as opposed to all tests distributed, in the future reporting periods.

3) The use of all (LFD) products in the top-level analysis provides a general trend to help identify changes in the overall efficiency and effectiveness of the complaints handling process. The action level has been triggered, which has instigated a CAPA to investigate how the complaints handling process can be improved and also to see if any particular underlying reasons for the steep increase in complaints can be identified, e.g. due to supplier quality issues. Initial root cause analysis has identified a need to improve the granularity of information requested from people making complaints to assist such investigations and a new front-end information-gathering process has been implemented to assist in this. Monitoring of the effectiveness of the new process is ongoing and an update will be provided in future PSR reports.

A CAPA will be raised in the QMS as an action in this report to investigate the methodology of analysis. Refer to Table 4.

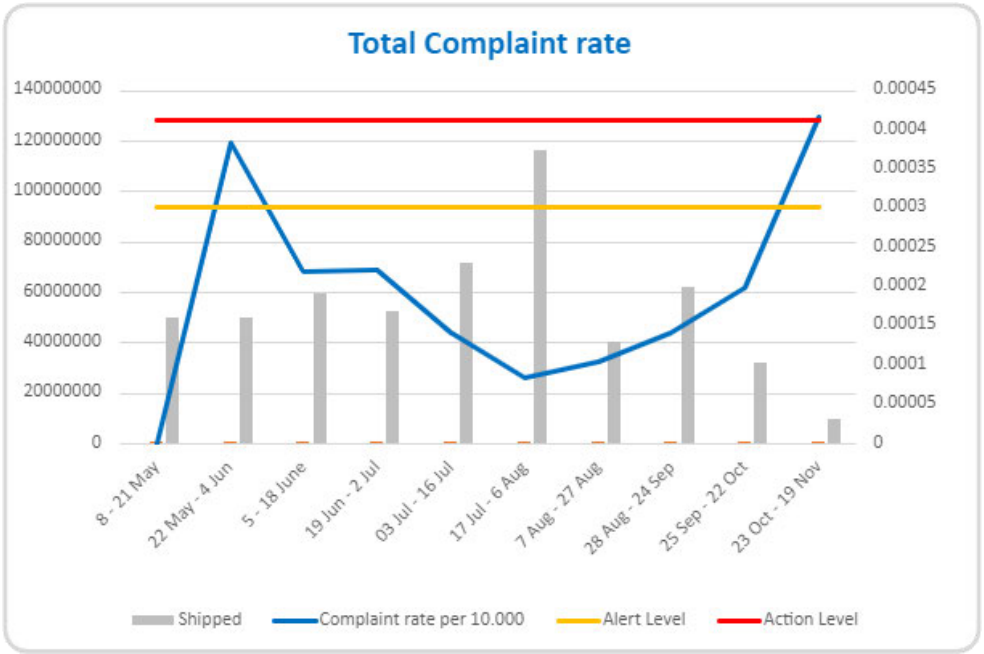


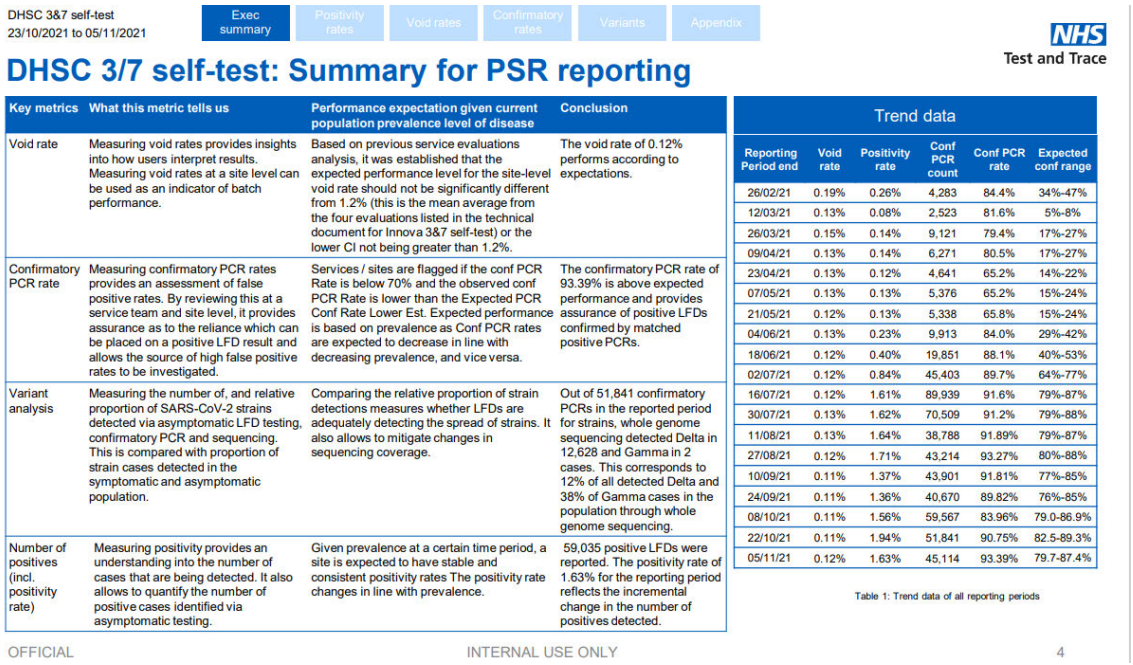
Figure 1: Graph showing total complaints vs distribution with action & alert levels set

(Refer to Attachment 03, for data)

4.6 Real World Performance Monitoring

The Real-World Performance Monitoring Team carry out routine performance of device and service performance using real-world data generated within NHS Test & Trace covering all services and devices.

Figure 1 and Figure 2 are summaries for the Void rates, confirmatory PCR rates, variant analysis, and the number of positives (i.e. positivity rates), for the reporting period 23rd October – 19th November 2021.



DHSC 3&7 self-test
23/10/2021 to 05/11/2021

Exec summary | Positivity rates | Void rates | Confirmatory rates | Variants | Appendix

NHS Test and Trace

DHSC 3/7 self-test: Summary for PSR reporting

Key metrics	What this metric tells us	Performance expectation given current population prevalence level of disease	Conclusion
Void rate	Measuring void rates provides insights into how users interpret results. Measuring void rates at a site level can be used as an indicator of batch performance.	Based on previous service evaluations analysis, it was established that the expected performance level for the site-level void rate should not be significantly different from 1.2% (this is the mean average from the four evaluations listed in the technical document for Innova 3&7 self-test) or the lower CI not being greater than 1.2%.	The void rate of 0.12% performs according to expectations.
Confirmatory PCR rate	Measuring confirmatory PCR rates provides an assessment of false positive rates. By reviewing this at a service team and site level, it provides assurance as to the reliance which can be placed on a positive LFD result and allows the source of high false positive rates to be investigated.	Services / sites are flagged if the conf PCR Rate is below 70% and the observed conf PCR Rate is lower than the Expected PCR Conf Rate Lower Est. Expected performance is based on prevalence as Conf PCR rates are expected to decrease in line with decreasing prevalence, and vice versa.	The confirmatory PCR rate of 93.39% is above expected performance and provides assurance of positive LFDs confirmed by matched positive PCRs.
Variant analysis	Measuring the number of, and relative proportion of SARS-CoV-2 strains detected via asymptomatic LFD testing, confirmatory PCR and sequencing. This is compared with proportion of strain cases detected in the symptomatic and asymptomatic population.	Comparing the relative proportion of strain detections measures whether LFDs are adequately detecting the spread of strains. It also allows to mitigate changes in sequencing coverage.	Out of 51,841 confirmatory PCRs in the reported period for strains, whole genome sequencing detected Delta in 12,628 and Gamma in 2 cases. This corresponds to 12% of all detected Delta and 38% of Gamma cases in the population through whole genome sequencing.
Number of positives (incl. positivity rate)	Measuring positivity provides an understanding into the number of cases that are being detected. It also allows to quantify the number of positive cases identified via asymptomatic testing.	Given prevalence at a certain time period, a site is expected to have stable and consistent positivity rates The positivity rate changes in line with prevalence.	59,035 positive LFDs were reported. The positivity rate of 1.63% for the reporting period reflects the incremental change in the number of positives detected.

Trend data

Reporting Period end	Void rate	Positivity rate	Conf PCR count	Conf PCR rate	Expected conf range
26/02/21	0.19%	0.26%	4,283	84.4%	34%-47%
12/03/21	0.13%	0.08%	2,523	81.6%	5%-8%
26/03/21	0.15%	0.14%	9,121	79.4%	17%-27%
09/04/21	0.13%	0.14%	6,271	80.5%	17%-27%
23/04/21	0.13%	0.12%	4,641	65.2%	14%-22%
07/05/21	0.13%	0.13%	5,376	65.2%	15%-24%
21/05/21	0.12%	0.13%	5,338	65.8%	15%-24%
04/06/21	0.13%	0.23%	9,913	84.0%	29%-42%
18/06/21	0.12%	0.40%	19,851	88.1%	40%-53%
02/07/21	0.12%	0.84%	45,403	89.7%	64%-77%
16/07/21	0.12%	1.61%	89,939	91.6%	79%-87%
30/07/21	0.13%	1.62%	70,509	91.2%	79%-88%
11/08/21	0.13%	1.64%	38,788	91.89%	79%-87%
27/08/21	0.12%	1.71%	43,214	93.27%	80%-88%
10/09/21	0.11%	1.37%	43,901	91.81%	77%-85%
24/09/21	0.11%	1.36%	40,670	89.82%	76%-85%
08/10/21	0.11%	1.56%	59,567	83.96%	79.0-86.9%
22/10/21	0.11%	1.94%	51,841	90.75%	82.5-89.3%
05/11/21	0.12%	1.63%	45,114	93.39%	79.7-87.4%

Table 1: Trend data of all reporting periods

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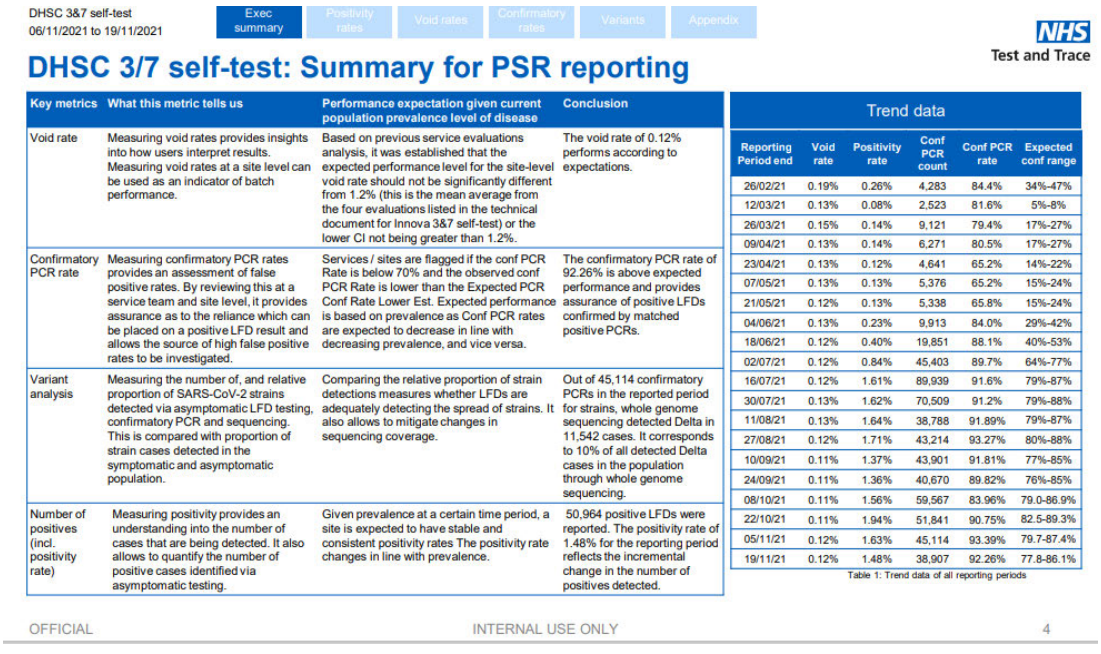
Figure 2: DHSC 3/7 self-test summary Period 23-Oct-2021 to 05-Nov-2021



DHSC 3&7 self-test
06/11/2021 to 19/11/2021

Exec summary | Positivity rates | Void rates | Confirmatory rates | Variants | Appendix

NHS Test and Trace

DHSC 3/7 self-test: Summary for PSR reporting

Key metrics	What this metric tells us	Performance expectation given current population prevalence level of disease	Conclusion
Void rate	Measuring void rates provides insights into how users interpret results. Measuring void rates at a site level can be used as an indicator of batch performance.	Based on previous service evaluations analysis, it was established that the expected performance level for the site-level void rate should not be significantly different from 1.2% (this is the mean average from the four evaluations listed in the technical document for Innova 3&7 self-test) or the lower CI not being greater than 1.2%.	The void rate of 0.12% performs according to expectations.
Confirmatory PCR rate	Measuring confirmatory PCR rates provides an assessment of false positive rates. By reviewing this at a service team and site level, it provides assurance as to the reliance which can be placed on a positive LFD result and allows the source of high false positive rates to be investigated.	Services / sites are flagged if the conf PCR Rate is below 70% and the observed conf PCR Rate is lower than the Expected PCR Conf Rate Lower Est. Expected performance is based on prevalence as Conf PCR rates are expected to decrease in line with decreasing prevalence, and vice versa.	The confirmatory PCR rate of 92.26% is above expected performance and provides assurance of positive LFDs confirmed by matched positive PCRs.
Variant analysis	Measuring the number of, and relative proportion of SARS-CoV-2 strains detected via asymptomatic LFD testing, confirmatory PCR and sequencing. This is compared with proportion of strain cases detected in the symptomatic and asymptomatic population.	Comparing the relative proportion of strain detections measures whether LFDs are adequately detecting the spread of strains. It also allows to mitigate changes in sequencing coverage.	Out of 45,114 confirmatory PCRs in the reported period for strains, whole genome sequencing detected Delta in 11,542 cases. It corresponds to 10% of all detected Delta cases in the population through whole genome sequencing.
Number of positives (incl. positivity rate)	Measuring positivity provides an understanding into the number of cases that are being detected. It also allows to quantify the number of positive cases identified via asymptomatic testing.	Given prevalence at a certain time period, a site is expected to have stable and consistent positivity rates The positivity rate changes in line with prevalence.	50,964 positive LFDs were reported. The positivity rate of 1.48% for the reporting period reflects the incremental change in the number of positives detected.

Trend data

Reporting Period end	Void rate	Positivity rate	Conf PCR count	Conf PCR rate	Expected conf range
26/02/21	0.19%	0.26%	4,283	84.4%	34%-47%
12/03/21	0.13%	0.08%	2,523	81.6%	5%-8%
26/03/21	0.15%	0.14%	9,121	79.4%	17%-27%
09/04/21	0.13%	0.14%	6,271	80.5%	17%-27%
23/04/21	0.13%	0.12%	4,641	65.2%	14%-22%
07/05/21	0.13%	0.13%	5,376	65.2%	15%-24%
21/05/21	0.12%	0.13%	5,338	65.8%	15%-24%
04/06/21	0.13%	0.23%	9,913	84.0%	29%-42%
18/06/21	0.12%	0.40%	19,851	88.1%	40%-53%
02/07/21	0.12%	0.84%	45,403	89.7%	64%-77%
16/07/21	0.12%	1.61%	89,939	91.6%	79%-87%
30/07/21	0.13%	1.62%	70,509	91.2%	79%-88%
11/08/21	0.13%	1.64%	38,788	91.89%	79%-87%
27/08/21	0.12%	1.71%	43,214	93.27%	80%-88%
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08/10/21	0.11%	1.56%	59,567	83.96%	79.0-86.9%
22/10/21	0.11%	1.94%	51,841	90.75%	82.5-89.3%
05/11/21	0.12%	1.63%	45,114	93.39%	79.7-87.4%
19/11/21	0.12%	1.48%	38,907	92.26%	77.8-86.1%

Table 1: Trend data of all reporting periods

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Figure 3: DHSC 3/7 self-test summary Period 06-Nov-2021 to 19-Nov-2021

(Refer to Attachment 04, 05, 06 for the full dataset)

4.7 CAPA

- Since the last reporting period the DHSC Quality team have closed 12 CAPA's.
- Refer to Table 2 for a CAPA Status Overview
- Refer to Table 3 for List of open CAPA's and current progress and due dates.

CAPA Status	No
Completed	12
Implementation	01
Investigation	00
VOE	06
Total	**19**

Table 2: CAPA Status Overview

No	CAPA No	Start Date	Problem statement	Status/ progress	Due date	Reason for extension if overdue
01	CAPA-21-06-0010	08-Jun-21	CAPA raised to address the discrepancies/inconsistencies between the IFUs, leaflets and online information.	Action implementation stage. 1 Action Overdue – Extension being requested until 31/10.	08-Sep-21 **Extension approved until 27-Dec-21**	Additional work needed for action plans
02	CAPA-21-06-0011	08-Jun-21	CAPA raised to address the lack of unified complaints system for receiving direct complaints under the design and responsibility of DHSC	Complete Pending VOE	VOE due: 31-Dec-21	N/A
03	CAPA-21-06-0013	08-Jun-21	CAPA raised to strengthen the PMS plan and appropriate PMS activities	Complete pending VOE	VOE Due: 10-Jan-2022	N/A
04	CAPA-21-06-0016	08-Jun-21	CAPA raised to address the non-conformities identified in SCAR process related to poorly defined proposed corrective action plan and lack of effectiveness check for SCAR-2021-026	Complete pending VOE	VOE Due: 01-Feb-2022	N/A
05	CAPA-21-06-0017	08-Jun-21	CAPA raised to address the lack of evidence identified in LFD technical file to demonstrate whether the tests continue to be fit for purpose and that they meet the intended performance stated by DHSC.	Complete pending VOE	VOE Due: 15-Feb-22	N/A
06	CAPA-21-06-0032	11-Jun-21	CAPA raised to demonstrate DHSC's compliance towards nonconformity identified in Innova USA voluntary recall notice with regards to QMS requirements	Complete pending VOE	VOE due 31-Dec-21	N/A
07	CAPA-21-06-0034	18-Jun-21	CAPA raised to address the Non-conformity identified regarding the IFUs supplied with the LFD 25s kits	Complete Pending VOE	VOE due 15-Feb-21	N/A

Table 3: List of open CAPA's, Status & Due date

4.8 SCAR – Supplier Corrective Action Report

No SCARs raised for LFD's in this reporting period of 23rd October to 19th November 2021

4.9 Risk Management

LFD Risk management File is RMF-0001 Revision 5 and HTM Hazard traceability Matrix Rev4.

DHSC is currently updating the QOP08 for Risk management process and is pending final review.

The update of the LFD RMF with the new hazard identified during the complaint's investigation for the last two reporting periods will be included in the revised RMF templates.

5. Conclusion

Batch issues Summary

- There has not been any manufacturing of the devices during this reported period and there is no new contract with Biotime.
- No batch issues reported during this reporting period. This is due no product procurement from Innova in the specified reporting window of this report.

User incidence Summary

- The number of kits distributed (3s, 7s and 25s) during this period was 9.4 million.
- DHSC has received a total of 81 complaints between 23rd October – 19th November 2021. Seven from MHRA (yellow card) of those only one reportable and six non-reportable. 60 reports from the Qualtrics survey were received.
- Investigation for the reportable complaint 2021/011/003/601/500 has been completed. There was no trend of this type of complaint, hence CAPA/SACR was not required. The complaint has been closed and monitored for trending purposes.
- No new hazards were identified during this reporting window. However, the RMF is in final review for the two hazards identified in PSR-009 & PSR-010. Action raised in PSR-010 will be extended and closed off ahead of the next reporting window.

Trends and analysis Summary

- Results of 37.49% of the distributed LFD size 3s, 7s and 25s which is an improvement of 3.49% since the last reporting period.
- The Void Rate of 0.12% performs according to expectations and is 0.01% higher than the previous report. Results remain below the 1.2% threshold.
- The confirmatory PCR rate of 93.39% is above expected performance and provides assurance of positive LFDs confirmed by matched positive PCRs.
- There are now no overdue CAPA's and 12 CAPA's have been closed from the previous reporting period. One CAPA is in the implementation stage and 6 CAPA's in VOE.
- No SCARs raised for LFD in this period 23rd Oct 2021 – 19th November 2021.
- Non-conformance's raised in the previous PSR-010 have been captured in the QMS and investigation is on-going. NCR-21-11-0005 and NCR-21-11-0006.

PHCO: Public Health Clinical Oversight

- Reports where actual harm was identified as patient injured were presented at the (PSP) Patient Safety Panel meeting. Meeting is attended by multiple functions including PHCO, Quality and Regulatory, Integrator.

Recall

- DHSC has not instigated a recall.

6. Actions

No	Added	Action	Responsible Name	Due Date	Status
1	26-Nov-2021	CAPA instigated for complaints going above action and alert levels in PSR-010 & PSR 011.	[redacted]	5th Jan 2022	Open action
2	04-Oct-2021	Finalise review of Risk Management File after the addition of 2 new hazards identified in previous reporting periods 28th Aug to 24thSep and 25th Sept to 22nd Oct.	[redacted]	23-Nov-21	Open action
3	04-Oct-2021	Raise Non-conformity within the ISO13485 QMS for findings during the Intertek Testing and reported to Control Tower CSL-25062 in period 28th Aug to 24thSep and 9 failures found for control of line not visible on lot X2108753 for period 25th Sept to 22nd Oct.	[redacted]	19-Nov-21	Completed NCR-21-11-0005 and NCR-21-11-0006 raised.

Table 4: Actions identified for the next reporting period

7. Attachments

Attachment 01: PMS-0001, PMS Plan for the DHSC Covit-19 LFD Devices (3 and 7 kit) Rev2, 29-July-2021
Attachment 02: DHSC PSR – Complaints & Qualtrics data
Attachment 03: RWPM Innova 3s and 7s
Attachment 04: RWPM Innova 25s
Attachment 05: RWPM Innova Assisted

	Job Title	Name	email
Compiled by	Post Market Surveillance Manager	[redacted]	[redacted]