Prescribing Services

DOTTIE

Data Protection by Design

VERSION DATE	NOTES	AUTHOR
2021-03-24	Original Draft	Emma Cooper, Kafico Ltd

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1. PROJECT CONTEXT

DOTTIE is an e-learning platform (DOTTIE: Disease Optimisation Training Through Individualised Education), based on the popular open-source website Moodle (used by most universities as their e-learning platform). Originally it was planned to give training for healthcare professionals (e.g. HCAs) on carrying out certain tasks, such as measuring blood pressure, via videos and PowerPoint presentations, with some assessment functionality (quizzes, a workbook they can submit) to verify they have completed the training. Dottie is a project whereby PSL can offer organisations the ability to upload training materials and their staff login in to complete them. The interface can either integrate with a staff member's already activated NHS Pathways account or they can create a new account. Dottie allows for the employer to review the results of their staff training on a dashboard as well as whether the module is completed.

2. DATA FLOWS

1. Existing PSL customers (GP Practices) will send an email to the PSL Support address to request that PSL activate the DOTTIE training platform for an individual and to enrol them on particular modules.
2. If the user has an NHS Pathways account, the existing data (email address, name) will be used by PSL to create an account on the DOTTIE site. because users would have already used 2-factor authentication to log into NHS Pathways.
3. A password will be generated for them and used to secure their DOTTIE account.
4. This will automatically be entered for them when they navigate from NHS Pathways to DOTTIE via a click of a button (a seamless login experience, without them having to enter the details themselves).
5. The button currently sends via a link to an encrypted page requiring username and password.
6. The login page requires that they enable cookies on their browser.

7. If user does not have an NHS Pathways account, then the request to PSL must include the user’s email address and name.
8. Once the DOTTIE account has been created, the new user will be emailed.
9. If they are an existing Pathways user, guidance on accessing the system will be emailed to the address that PSL hold for them. This guidance will explain that access to the system is via a button within their password-protected NHS Pathways interface.
10. If they do not have a Pathways account, a registration confirmation email will be sent to their provided email address. This will contain their login details (email address and a generated password) and the link to access the system directly (https://dottie.nhspathways.org).
11. A separate confirmation of DOTTIE user registration will be emailed to the authoriser as per usual process for NHS Pathways user creation. This message will not contain any personal details regarding the user’s DOTTIE account.
12. On logging in, materials are available to teach healthcare workers how to use PSL systems, putting more linking in place between the site and NHS pathways (such as buttons next to questionnaires that healthcare workers go over with shielded patients).
13. DOTTIE would not be capturing information about the patient, it would be giving more background to the healthcare worker about a specific question (e.g. for a question on adequate exercise, a link to a training module could give background on what would count as adequate exercise).

Risk Assessment

SOURCES

Data Protection Act 2018 (DPA)

General Data Protection Regulations (EU) 2016/679 (GDPR)

Information Commissioner – Guide to the General Data Protection Regulations (ICO Guide)

Information Commissioner - Data Protection Impact Assessments

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1. INTRODUCTION

The UK Information Commissioner and the European Data Protection Board provide that Data Protection Impact Assessments are necessary, in certain circumstances, to assess the level of risk to the rights and freedoms of individuals.

Controllers must consider both the likelihood and the severity of any impact on individuals. High risk could result from either a high probability of some harm, or a lower possibility of serious harm.

The risk assessment serves to support Controller customers to identify the level of inherent risk so that the measures being put in place to mitigate the risk are proportionate to the impact that projects or initiatives might have on data subjects.

2. ACCOUNTABILITY

Prescribing Services Ltd (PSL) are a Processor and are therefore required to provide assurance that their technical and organisational measures that are comparable to those implemented by the Controller and proportionate to the risk.

Unlike the Controller, they are not in a position to assess the risk to the rights and freedoms of particular data subjects since they are not in control of establishing the lawful basis or a direct route for giving effect to data subject rights. However, due to the nature and scope of processing, it seems reasonable to assume that implementing the described project represents a low degree of risk to the rights and freedoms of data subjects in the event that appropriate technical and organisational measures are not put in place at all. This assessment will therefore explore each of the elements drawn out within data protection legislation for mitigation of those risks.

3. ASSET CRITICALITY SCORING GRID

Typically, critical national services. Absence of system leads to complete failure of dependent systems and services with a high possibility of personal safety issues. Service interruption results in severe reputational damage	5
Predominantly transactional services. Absence leads to operational difficulties that can be coped with for a limited period. May lead to increased risk to stakeholders or organisation.	4
Predominantly data capture, batch processing. Absence leads to operational difficulties, but these are manageable for an extended 2period. Eg. 1 day. Absence of system may lead to a slight increase in risk to stakeholders or organisation.	3
Business Hours Support (8am-6pm) Mon-Fri (not BH). Service Availability 98%. DR optional - dependant on outcome of BIA.	2

4. DATA RISK SCORING GRID

Data is aggregated and anonymised.	2
Low volume of personal data involved or high volumes of anonymised data.	3
High-volume personal data or low volume special category data.	4
High volume and special category data or includes stigmatised information (i.e. mental health data).	5

5. RISK SCORING MATRIX

	Asset Criticality				
		2	3	4	5
Impact of data breach	2	Bronze			
	3		Silver		
	4			Gold	
	5				Platinum

6. ASSESSMENT AND RATIONALE

What score has the project been given in terms of criticality of resulting asset or service?	Business Hours Support (8am-6pm) Mon-Fri (not BH). Service Availability 98%. DR optional - dependent on outcome of BIA.
Rationale	System is an enhancement to an existing clinical tool. It allows users of the system to undertake training but the system is currently being used effectively without this addition.
What score has the project been given in terms of the nature and volume of data being processed?	Low volume of personal data involved / high volumes of anonymised data.
Rationale	The system only includes basic demographics of staff as well as the training they have undertaken.
	BRONZE

Overall risk score given to the processing activity / project in question.	🟨
Does the project involve introduction of a cloud service to be assessed?	Introduces cloud services that will need to be assessed
Does the project involve access by data subjects to their own personal data that requires a ‘high’ level of authentication (i.e. access to their own health or finance records)?	No High Level authentication activities
Does the project involve access by data subjects to their own personal data requiring a ‘low’ level of authentication (i.e. access to training records)?	Staff access to own training records

6. RISK ASSESSMENT CONCLUSION

The project has been assessed to have an overall risk score of BRONZE and so the measures to be applied will be proportionate to reduce the inherent risk levels to a suitable level such that they can be accepted by the Controller.

Controllers and Processors

SOURCES

Data Protection Act 2018 (DPA)

General Data Protection Regulations (EU) 2016/679 (GDPR)

Information Commissioner – Guide to the General Data Protection Regulations (ICO Guide)

ICO Guidance - Data Controllers

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1. DEFINITIONS / CONTEXT

“It is essential for organisations involved in the processing of personal data to be able to determine whether they are acting as a data controller or as a data processor in respect of the processing. This is particularly important in situations such as a data breach where it will be necessary to determine which organisation has data protection responsibility.

The data controller must exercise overall control over the purpose for which, and the manner in which, personal data are processed. However, in reality a data processor can itself

exercise some control over the manner of processing – e.g. over the technical aspects of how a particular service is delivered.

The fact that one organisation provides a service to another organisation does not necessarily mean that it is acting as a data processor. It could be a data controller in its own right, depending on the degree of control it exercises over the processing operation.”[1]

2. DATA CONTROLLERS

GP Practices has been assessed to be a Data Controller.

This is because;

- They decided to collect or process the personal data.
- They decided what the purpose or outcome of the processing was to be.
- They decided what personal data should be collected.
- They decided which individuals to collect personal data about.

[1] https://ico.org.uk/media/for-organisations/documents/1546/data-controllers-and-data-processors-dp-guidance.pdf

- They make decisions about the individuals concerned as part of or as a result of the processing.
- They exercise professional judgement in the processing of the personal data.
- They have a direct relationship with the data subjects.
- The data subjects are their employees
- They have complete autonomy as to how the personal data is processed.
- They have appointed the processors to process the personal data on their behalf

2. DATA PROCESSORS

Prescribing Services Limited has been assessed to be a Data Processor.

This is because;

- They are following instructions from someone else regarding the processing of personal data.
- They were given the personal data by a customer or similar third party, or told what data to collect.
- They do not decide to collect personal data from individuals.
- They do not decide what personal data should be collected from individuals.
- They do not decide the lawful basis for the use of that data.
- They do not decide what purpose or purposes the data will be used for.
- They do not decide whether to disclose the data, or to whom.
- They do not decide how long to retain the data.
- They may make some decisions on how data is processed but implement these decisions under a contract with someone else.
- They are not interested in the end result of the processing.

AWS has also been assessed to be a Sub Processor.

This is because;

- They are following instructions from someone else regarding the processing of personal data.
- They were given the personal data by a customer or similar third party, or told what data to collect.
- They do not decide to collect personal data from individuals.
- They do not decide what personal data should be collected from individuals.
- They do not decide the lawful basis for the use of that data.
- They do not decide what purpose or purposes the data will be used for.
- They do not decide whether to disclose the data, or to whom.
- They do not decide how long to retain the data.
- They may make some decisions on how data is processed but implement these decisions under a contract with someone else.
- They are not interested in the end result of the processing.

3. APPROPRIATE SHARING DOCUMENTS

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“It is good practice for you to have written data sharing agreements when controllers share personal data. This helps everyone to understand the purpose for the sharing, what will happen at each stage and what responsibilities they have. It also helps you to demonstrate compliance in a clear and formal way. Similarly, written contracts help controllers and processors to demonstrate compliance and understand their obligations, responsibilities and liabilities.”[2]

Prescribing Services has the following in place;

- A Processing Contract between PSL and GP Practices

[2] https://ico.org.uk/for-organisations/accountability-framework/contracts-and-data-sharing/

- A Processing Contract between PSL and AWS

PROCESSING CONTRACT REVIEW

In accordance with s 56 of the Data Protection Act 2018, there is a need to ensure that the legally required processing clauses are included in any contract between a Controller and Processor or Processor and Sub Processors.

Name of Supplier: PSL

Contract reviewed: PSL GP Processing Contract

Clause	Status	Comments
Is the processor required to provide, on request evidence that they have implemented appropriate technical and organisational measures to protect Personal Data including storage and transmission of data, business continuity, staff training, auditing, access control and Cyber security?	Yes	Section 2.9.5
Does the contract state that the processor shall not engage another processor without prior specific or general written authorisation of the controller?	Yes	2.5
Does the contract set out the subject-matter and duration of the processing, the nature and purpose of the processing, the type of personal data and categories of data subjects and the obligations and rights of the controller?	Yes	Schedule 1
Does the contract stipulate that the Processor processes the personal data only on documented instructions from the controller, including with regard to transfers of personal data to a third country or an	Yes	2.9.4

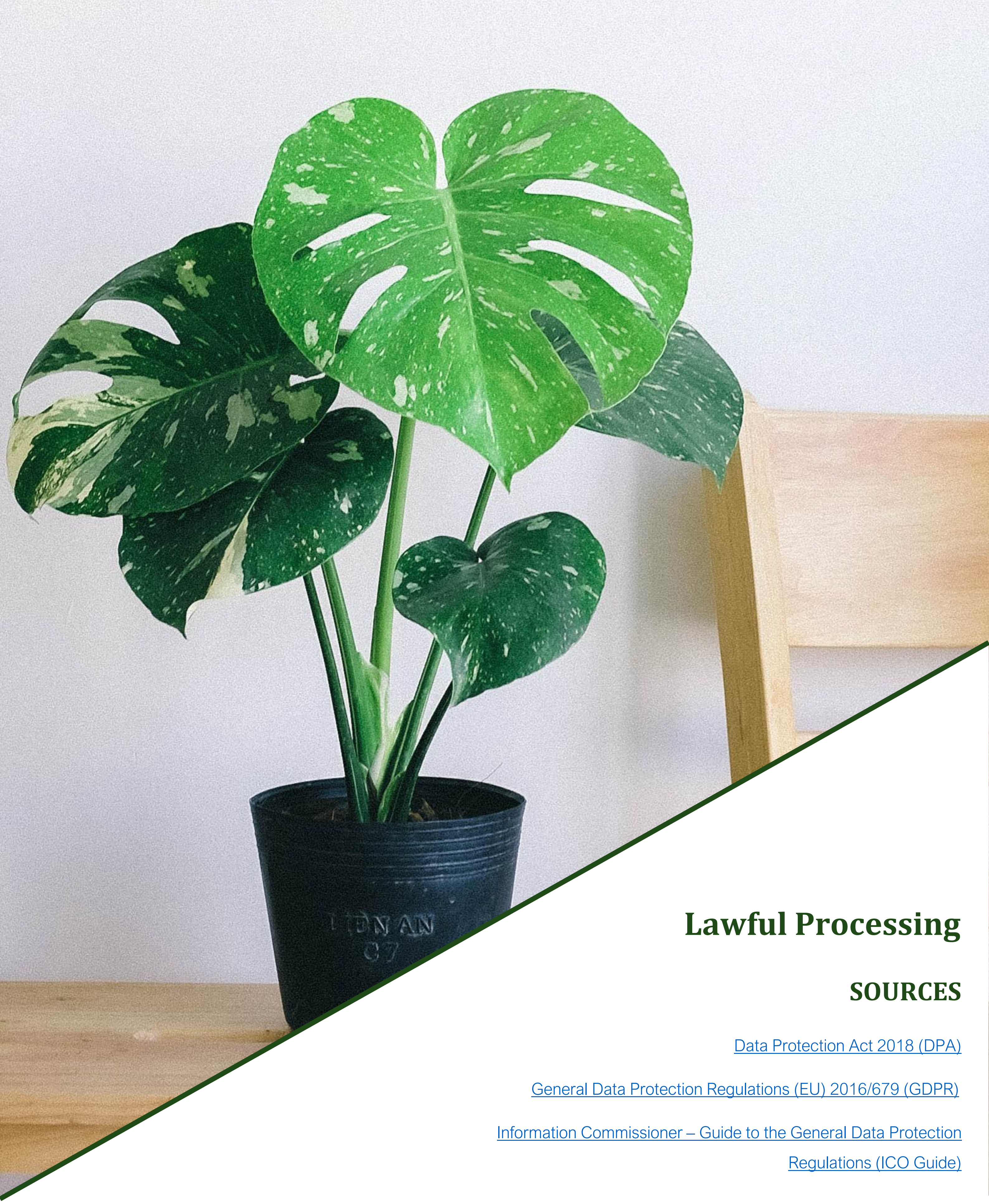
international organisation, unless required to do so by law and in those cases will notify the Controller?		
Does the contract state that all staff employed by the processor have contracts that include confidentiality clauses and that Personal Data will not be shared with third party unless required to do so by law?	Yes	Yes
Does the contract require the Processor to assist the Controller to respond to requests for exercising the data subject's rights i.e. access to information, correction of errors?	Yes	2.9.7
Does the contract require the Processor to assist the Controller in reporting information incidents promptly including where it might be required to contact the data subject?	Yes	2.9.7
Does the contract state what should happen to the data at the end of the contract or in the event of termination such as return of the data or secure destruction?	Yes	Schedule 2
Does the contract require the Processor to allow for a comply with audits including inspections conducted by the Controller or a third party engaged by the Controller?	Yes	2.10

Name of Supplier: Amazon Web Services

Contract reviewed: AWS Processing Contract

Clause	Status	Comments
Is the processor required to provide, on request evidence that they have implemented appropriate technical and organisational measures to protect Personal Data including storage and transmission of data, business continuity, staff training, auditing, access control and Cyber security?	Yes	Section 5

Does the contract state that the processor shall not engage another processor without prior specific or general written authorisation of the controller?	Yes	Section 6
Does the contract set out the subject-matter and duration of the processing, the nature and purpose of the processing, the type of personal data and categories of data subjects and the obligations and rights of the controller?	Yes	Section 1.3
Does the contract stipulate that the Processor processes the personal data only on documented instructions from the controller, including with regard to transfers of personal data to a third country or an international organisation, unless required to do so by law and in those cases will notify the Controller?	Yes	
Does the contract state that all staff employed by the processor have contracts that include confidentiality clauses and that Personal Data will not be shared with third party unless required to do so by law?	Yes	Yes
Does the contract require the Processor to assist the Controller to respond to requests for exercising the data subject's rights i.e. access to information, correction of errors?	Yes	Section 7
Does the contract require the Processor to assist the Controller in reporting information incidents promptly including where it might be required to contact the data subject?	Yes	Section 9
Does the contract state what should happen to the data at the end of the contract or in the event of termination such as return of the data or secure destruction?	Yes	Section 14
Does the contract require the Processor to allow for a comply with audits including inspections conducted by the Controller or a third party engaged by the Controller?	Yes	Section 10.3



Lawful Processing

SOURCES

Data Protection Act 2018 (DPA)

General Data Protection Regulations (EU) 2016/679 (GDPR)

Information Commissioner – Guide to the General Data Protection Regulations (ICO Guide)

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1. DEFINITIONS / CONTEXT

Controllers must have a valid lawful basis in order to process personal data.

There are six available lawful bases for processing. No single basis is ’better’ or more important than the others – which basis is most appropriate to use will depend on your purpose and relationship with the individual.

Most lawful bases require that processing is ‘necessary’. If Controllers can reasonably achieve the same purpose without the processing, they won’t have a lawful basis.

Controllers must determine the lawful basis before they begin processing and should document it.

Controller’s privacy notices should include lawful basis for processing as well as the purposes of the processing.

If the purposes change, Controllers may be able to continue processing under the original lawful basis if the new purpose is compatible with the initial purpose (unless the original lawful basis was consent).

If Controllers are processing special category data they will need to identify both a lawful basis for general processing and an additional condition for processing this type of data.

2. DATA CATEGORIES

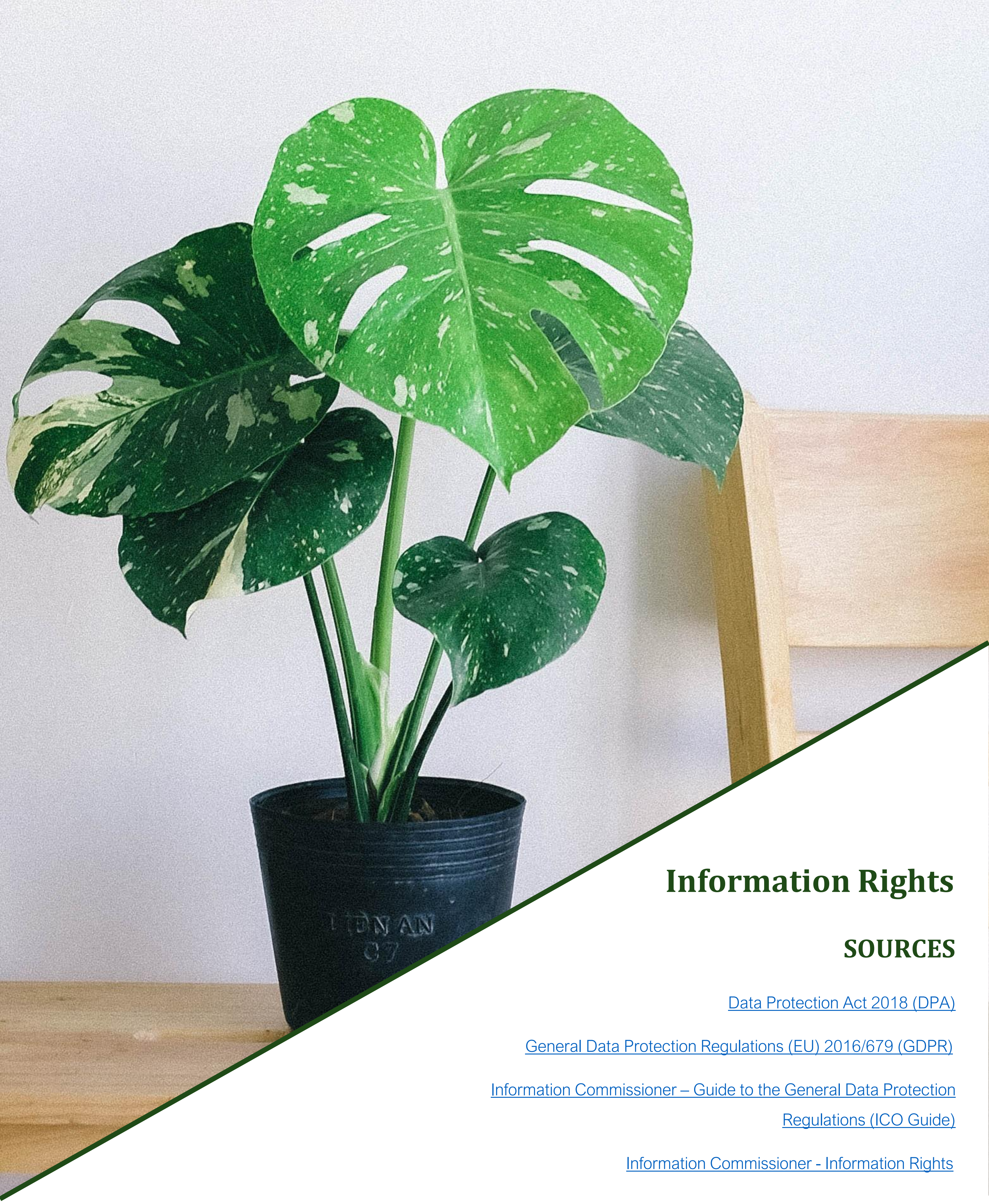
The UK GDPR / DPA 18 and EU GDPR governs the processing of data that identifies living individuals and provides that Special Categories of Data is personal data revealing racial or ethnic origin, political opinions, religious or philosophical beliefs, or trade union membership, and the processing of genetic data, data concerning health or data concerning a natural person’s sex life or sexual orientation.

The initiative involves processing of Personal Data and therefore requires a lawful basis under Art 6 UK GDPR.

Data Processors are not in a position to determine the purpose and means of processing. However, for the purposes of supporting customers with their assessments, the following assumptions have been made.

3. LAWFUL BASIS FOR PROCESSING PERSONAL DATA

UK GDPR Article 6 (1) (f) Legitimate Interests



Information Rights

SOURCES

Data Protection Act 2018 (DPA)

General Data Protection Regulations (EU) 2016/679 (GDPR)

Information Commissioner – Guide to the General Data Protection Regulations (ICO Guide)

Information Commissioner - Information Rights

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1. DEFINITIONS / CONTEXT

The UK and EU GDPR provides the following rights for individuals: The right to be informed, the right of access, the right to rectification, the right to erasure, the right to restrict processing, the right to data portability, the right to object, rights in relation to automated decision making and profiling.

Processors are contractually bound to supporting Customer Controllers with their information rights requests by virtue of Data Processing Contract. This means that they will work to support the Controller towards a timely and complete response to any request made by data subjects.

2. FACILITATION OF INFORMATION RIGHTS

Information Right	Applies?	How Supported
Right to Access	Yes, data subjects do have a right to request access to their information under this lawful basis.	The PSL systems and architecture allows personal data to be extracted / printed and provided to data subject on request. DOTTIE data subjects (employees) are largely already able to access personal data held about them through their account login. However, the system provides an audit trail of access to and changes made within the system such that these can also form part of a subject access request response as well.
Rectification and Restriction	Yes, data subjects do have a right to request the rectification and restriction of their personal data under this lawful basis.	The PSL systems and architecture allows personal data to be amended / access restricted and provides an audit trail of such amendments.

Portability	The right to data portability only applies when your lawful basis for processing this information is consent or for the performance of a contract and so would not apply to processing under this DPIA.	Not Applicable
Erasure	Yes, the right to Erasure does apply when processing is for legitimate interests.	The data subjects’ ability to have their personal data erased can be facilitated by the system. Any requests will be managed with the oversight of the Controller customer.
Object	Yes, the data subject does have a right to object to processing of their personal data under this lawful basis.	The data subjects' ability to raise objections via the Controller can be facilitated by the system. Any requests will be managed with the oversight of the Controller customer.
Automated Decision Making	Not Applicable	Not Applicable

TECHNICAL AND ORGANISATIONAL MEASURES

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1. DEFINITIONS / CONTEXT

- Personal data must be processed in a manner that ensures appropriate security of the personal data, including protection against unauthorised or unlawful processing and against accidental loss, destruction or damage, using appropriate technical or organisational measures
- While information security is sometimes considered as cybersecurity (the protection of your networks and information systems from attack), it also covers other things like physical and organisational security measures
- Measures taken should consider available technology, costs, nature, scope, context and purposes of processing as well as the risk of varying likelihood and severity for the rights and freedoms of natural persons
- The controller and the processor shall implement appropriate technical and organisational measures to ensure a level of security appropriate to the risk
- The impact of non-secure data processing can be as serious as becoming a victim or fraud or being put at risk of physical harm or intimidation
- Additionally, individuals are entitled to be protected from less serious kinds of harm like embarrassment or inconvenience
- The data should be accessed, altered, disclosed or deleted only by those authorised to do so (and that those people only act within the scope of the authority given to them);
- The data held must be accurate and complete in relation to why it is being processed; and
- The data should remain accessible and usable, i.e., if personal data is accidentally lost, altered or destroyed, Controllers should be able to recover it and therefore prevent any damage or distress to the individuals concerned.

PROPORTIONALITY

In accordance with the above risk assessment, the project has been defined as having a BRONZE degree of risk to the rights and freedoms of data subjects in the event that appropriate technical and organisational measures are not put in place – based on the nature and volume of the data being processed.

This assessment will therefore explore each of the elements drawn out within data protection legislation for mitigation of those risks such that the residual risk is low enough to support implementation.

PHYSICAL SECURITY

The following security measures have been confirmed as in place for the physical locations of project data;

- Data processed by The Bunker and AWS are hosted within industry standard data centres that conform to industry best practices (ISO27001 & G-Cloud IL3) and standards for security as defined in the relevant contract terms and conditions.
- Entry to the PSL premises is via a shared door access through which is controlled by a keypad and code.
- The door is also locked outside of normal working hours and entry to the building is not possible via the keypad alone.
- The company's office is then accessed by another door which is also controlled by a keypad and code and locked outside of working hours.
- The office servers and communications hardware are located in a server room which is kept locked.
- All visitors are required to sign in and out and be accompanied at all times whilst within the office premises.

- The offices include all fire fighting equipment required under current regulations. These are provided and maintained under the terms of the office occupancy contract.
- Smoke detectors are present throughout the building.
- There is CCTV in place at the PSL premises
- The Bunker facilities are housed in de-commissioned cold-war era military establishments.
- The Bunker has CCTV and Infrared CCTV operating 24 hours a day and covering all operational areas.
- The Bunker has full EMP shielding to all data floors
- The Bunker has a Borer security card access system
- The Bunker has 24/7 security guards and dogs permanently on site.
- The Bunker has 3m thick walls and 3m high heavy duty security fence topped with barbed wire and is buried 0.5m underground.
- The Bunker has smoke and heat detection and extinguishing systems.
- There are backup generators, various uninterrupted power supply feeds and other redundancy such as water and air filtration systems.

CLOUD HOSTING - AMAZON WEB SERVICES

These assurance items are based on the NHS Digital Health and Social Care Cloud Security – Good Practice Guide.

This assurance relates to the following PSL services;

✓ DOTTIE

- PSL has confirmed that they have taken the steps necessary to ensure that the cryptography offered by AWS (TLS Version 1.2) is in place and active for this project.

- AWS undertakes annual assessments against recognised standards such as ISO to test the security of the cloud communications.
- AWS architecture utilise strong cryptography as defined by NIST SP800-57 to encrypt communications between the Cloud and the End-user. Confirmed by AWS https://aws.amazon.com/blogs/security/tls-1-2-to-become-the-minimum-for-all-aws-fips-endpoints/
- As DOTTIE is hosted on AWS and DOTTIE is not a GOLD level of risk, annual pen testing of DOTTIE is out of scope so is not undertaken. AWS as a supplier however do regularly have external pen tests to continually improve their security posture.
- The AWS Region is set to London (EU-WEST-2)
- AWS provides the ability to apply encryption facilities to ensure that no data is written to storage in an unencrypted form. The provider has ensured that this facility is active for this project.
- It is confirmed that PSL applies the AWS secure key management services, providing strong cryptography as defined by the current version of NIST and FIPS standards. e.g. NIST SP800-57 Part 1'. The service provides detailed audit reporting on access of the keys.
- PSL confirms that the project utilises the AWS strong cryptography for data at rest as defined by the current version of NIST SP800-57
- PSL confirms that the data at rest encryption is tested annually against a recognised standard such as ISO or FIPS 140-2 to test the encryption strength.
- PSL confirms that their use of AWS key management solutions utilises strong cryptography as defined by the current version of NIST and FIPS standards. e.g. NIST SP800-57 Part 1
- PSL has deployed the application across multiple AWS Availability Zones in the same region for fault tolerance and low latency.
- AWS has firewall protection as standard.
- AWS has given assertions regarding their data sanitisation approach for cloud storage. If the customer needs a specific standard/method of sanitisation such as DoD 5220.22-M ("National Industrial Security Program Operating Manual ") or NIST 800-88 ("Guidelines for Media Sanitization") the customer can use a secure delete

tool which behaves on the AWS storage in the same way it would on a local physical disk.. The provider has confirmed they will delete data on request of the controller and that the appropriate deletion tool will be used in accordance with the risk posed by the data therein.

- Regarding equipment disposal, AWS is certified with ISO/IEC 27001:2013, and CSA STAR CCM v3.0.1.
- AWS security protections and control processes (including sanitisation) are independently validated by multiple third-party independent assessments: https://aws.amazon.com/compliance/programs/
- "AWS operates our data centers in alignment with the Tier III+ guidelines, but we have chosen not to have a certified Uptime Institute based tiering level so that we have more flexibility to expand and improve performance. AWS' approach to infrastructure performance acknowledges the Uptime Institute's Tiering guidelines and applies them to our global data center infrastructure design to ensure the highest level of performance and availability for our customers."

CLOUD HOSTING – The Bunker

These assurance items are based on the NHS Digital Health and Social Care Cloud Security – Good Practice Guide.

This assurance relates to the following PSL services;

✓ Eclipse Development Analytics

- PSL confirms that they use the VMWare product supplied by UKCloud
- PSL has confirmed that they have taken the steps necessary to ensure that the cryptography offered by The Bunker (VPN AES256 and HTTPS TLS Version 1.2) is in place and active for this project - such that communications between cloud components are encrypted to recognised best practice standards.

- PSL has taken steps to ensure that the max encryption levels offered by The Bunker are active for this project. Such that communications between cloud data centres are encrypted to TLS Version 1.2 or above OR IPsec or TLS VPN gateway as defined by NIST SP800-57.
- PSL has taken steps to ensure that the max encryption levels offered by The Bunker are active for this project. Such that communications between cloud admin portal and the cloud are encrypted to TLS Version 1.2 or above OR IPsec or TLS VPN gateway as defined by NIST SP800-57.
- The Bunker undertakes annual assessments against recognised standards such as ISO to test the security of the cloud communications.
- The Bunker architecture utilises strong cryptography as defined by NIST SP800-57 to encrypt communications between the Cloud and the End-user (TLS Version 1.2)
- PSL undertakes regular (minimum yearly) penetration testing of the communication between the Cloud and the End-user, ensuring that the Penetration test is well scoped such that ‘Data in transit protection’ is fully tested.
- The Bunker Region is set to Berkshire with backups being stored in the AWS London EU-WEST-2 data centre.
- The Bunker provides the ability to apply encryption facilities to ensure that no data is written to storage in an unencrypted form. The provider has ensured that this facility is active for this project.
- PSL confirms that the project utilises The Bunker utilises strong cryptography for data at rest as defined by the current version of NIST SP800-57
- PSL confirms that the data at rest encryption is tested annually against a recognised standard such as ISO or FIPS 140-2 to test the encryption strength.
- PSL has servers on “warm standby” which are servers which could be initiated within 2 hours for any server failure. This configuration is set up in the same data centre. Should the data centre location suffer a total outage, PSL have the resources in place to set up the servers in another zone, and expect it would take about 4 hours.
- The Bunker has firewall protection which has been configured and enabled.
- The Bunker has given assertions regarding their data sanitisation approach for cloud storage. If the customer needs a specific standard/method of sanitisation such as

DoD 5220.22-M (“National Industrial Security Program Operating Manual “) or NIST 800-88 (“Guidelines for Media Sanitization”) the PSL will use a secure delete tool which behaves on the UKCloud storage in the same way it would on a local physical disk.. PSL has confirmed they will delete data on request of the controller and that the appropriate deletion tool will be used in accordance with the risk posed by the data therein. PSL has a destruction policy as part of their ISO27001 certification.

- Regarding equipment disposal, The Bunker is certified with ISO/IEC 27001:2013, and CSA STAR Level 1
- The Bunker security protections and control processes (including sanitisation) are independently validated by multiple third-party independent assessments: https://www.thebunker.net/compliance/
- The Bunker operates data centers in alignment with the Tier III+ guidelines, and guarantee an up time of 99.9999%> (excluding planned maintenance).

2. DATA SUBJECT USER AUTHENTICATION

i. DOTTIE: EMPLOYEE ACCESS AUTHENTICATION

DOTTIE allows employees to access basic personal data such as training records and so for this product, the system permits direct system access for data subjects.

In line with NIST and UK GOV guidelines and the DCB3051 Identity Verification and Authentication Standard for Digital Health and Care Services, the assurances below have been obtained.

- It is confirmed that the data subject interface allows the user to see when the credentials were last used, such that a potential or actual exposure / misuse of credentials (username or password for example) is highlighted

- Due to the low risk and low volume personal data being access, authentication is single factor
- Since the authentication is single factor, the data subject is required to enter a username and password
- It is confirmed that the password is at least 8 characters long but does NOT set a maximum length.
- The system explains the password constraints to data subjects
- Data subject password changes are only required when there has been actual or potential compromise
- The system gives data subject users between 5 attempts to enter their password correctly before locking their account or do any further security checks
- The system hides data subject passwords by default
- The system allows users to paste their password
- Passwords are stored salted and hashed, using algorithms and strengths recommended in NIST Cryptography Standards
- If a data subject enters their account details incorrectly, the system conceals whether they got the username or password wrong.

SYSTEM AUDIT

The project introduces a system or software that professional users directly access and so there is a need to ensure that the audit functionality for the asset is appropriate such that transparency is supported and Administrators have the necessary oversight.

The following assurances have been sought and obtained;

- All systems / software enables and supports investigations for any reason (e.g. inappropriate access or cyber security incident)

- The system / software allows identification of any changes which have been made to clinical or administrative data, Patient/Service User data. This includes identifying what changes were made, by what user and at what time.
- The systems provide completed auditing:
    - Username (Where logged in)
    - Time of event
    - Activity undertaken
    - IP address of action
    - Duration of activity
- The systems allow monitoring of whether access controls are working as intended. Administrators may audit the movements of all staff, so it is possible to check that they are not accessing areas which they shouldn’t be or seeing things or doing things they shouldn’t be.
- System audit trail includes updates, backups, any maintenance activities or reference data changes.
- For successful login audit data includes User ID, date and time (hh:mm:ss)
- For unsuccessful login audit data includes number of attempts, Date and time, Access point (if available), User ID (if available)
- The Password Change audit data includes User ID, User whose password was changed, Date and time, end-user device (or Solution) identification information

PROFESSIONAL USERS - AUTHENTICATION

To ensure that the authentication of professional users of the system is in line with Gov.UK and NIST standards, the following assurances have been sought and confirmed;

- Most users use NHS Pathways credentials logging into the system.
- Professional user log in is multi-factor. The user logs in using a username and password and then uses a code received from an SMS/Email.

- For professional users, the password at least 8 characters long but does NOT set a maximum length.
- For professional users, when password is changed, the user receives an alert making them aware that their password has recently been changed?
- For professional users, the system explains the password constraints to professional users
- For professional users, the system gives professional users 5 attempts to enter their password correctly before locking their account or do any further security checks.
- For professional users, the system hides professional user passwords by default
- For professional users, the system allows the professional user to paste their password
- For professional users the Passwords of professional users stored salted and hashed, using algorithms and strengths recommended in NIST Cryptography Standards
- For professional users, when a professional user enters their account details incorrectly, the system conceals whether they got the username or password wrong.
- For professional users, when locked out or changing password, the professional user is sent a time-limited password-reset code to the phone number or email that they registered with that does not use password reset questions and does not use password reminders.
- For professional users, when a password is changed, the professional user receives an alert making them aware that their password has recently been changed.
- The software allows different privileges for different job roles
- For professional users, when a professional user is logged in, the organisation that they are logged in under presents itself on screen throughout their use of the system.
- For professional users, professional users have cannot have more than one role per login.

It has been confirmed that Prescribing Services would only ever access personal data in the following scenarios;

When a clinical customer requires technical support, or if they have put the format of a date of birth in incorrectly for example. The users will call the CCG and then the CCG will come to PSL. PSL does not deal with patients/customers direct under normal protocol.

INTERNATIONAL TRANSFERS

All data sets have UK regions selected.

Customer / patient data does not leave the UK.

DUE DILIGENCE

The stakeholders have achieved the following accreditations that assist to reduce the risk to the rights and freedoms of data subjects;

- PSL has completed a compliant NHS Data Protection and Security Toolkit for the current year available at PSL Toolkit
- PSL has achieved ISO27001 accreditation – certificate number 1412892
- The Bunker has submitted a compliant NHS Data Protection and Security Toolkit for the current year available at The Bunker Toolkit
- The Bunker has achieved ISO27001 accreditation as confirmed via The Bunker ISO27001
- Amazon Web Services have submitted a compliant NHS Data Protection and Security Toolkit for the current year available at AWS Toolkit
- Amazon Web Services has achieved ISO27001 accreditation as confirmed via AWS ISO27001

As part of the impact assessment, a review of media coverage was undertaken to determine whether there have been reports of breaches or complaints relating to suppliers or partners involve in the service delivery.

At the time of writing, aside from Amazon, no stakeholders had no media presence with regards to data breaches.

The ICO have not released any formal advice to indicate that AWS are not a suitable provider for services.

Checks have been undertaken with regards to the UK Information Commissioner and all parties, where relevant, are registered and their registrations are below

- PSL are registered with the ICO under the registration number Z2536678
- The Bunker are registered with the ICO under the registration number Z8856975
- Amazon Web Services are registered with the ICO under the registration number ZA481902

The stakeholders have identified the following leads for data protection matters;

- Prescribing Services Ltd - Emma Cooper - emma.cooper@kafico.co.uk
- The Bunker - Christopher.scott@thebunker.net
- UKCloud - dpo@ukcloud.com

PSL have policies that cover the following subjects;

- Information Governance
- Data Protection Impact Assessments
- Data Subject Rights
- Information Incidents
- Information Security
- Privacy / Confidentiality

- Risk and Audit

All employees of PSL have clauses within their contracts that include confidentiality and compliance with company Information Governance Policies.

All PSL employees that access personal data as part of their role have Data Protection and Security Training each year.