

# Data Science Essentials: Resource Sheet

Unit	Resource Description	Link	
1.1	RWD and RWE definitions	<a href="https://www.newswise.com/articles/what-is-real-world-data-a-review-of-definitions">https://www.newswise.com/articles/what-is-real-world-data-a-review-of-definitions</a> <a href="http://www.abpi.org.uk/our-work/library/industry/documents/vision-for-real-world-data.pdf">http://www.abpi.org.uk/our-work/library/industry/documents/vision-for-real-world-data.pdf</a>	Required
1.1	The ISPOR article on The Increasing Role of Real-World Evidence contains definitions and scope of RWE, as well as strengths and pitfalls (in tabular format).	<a href="https://www.ispor.org/research_pdfs/48/pdffiles/PHP280.pdf">https://www.ispor.org/research_pdfs/48/pdffiles/PHP280.pdf</a>	Recommended
1.1	Blog -The Use of Real World Evidence in the European Context	<a href="http://blogs.lse.ac.uk/lseenterprise/files/2016/12/RWE_in_Europe_Paper1.pdf?utm_content=buffer82172&amp;utm_medium=social&amp;utm_source=linkedin.com&amp;utm_campaign=buffer">http://blogs.lse.ac.uk/lseenterprise/files/2016/12/RWE_in_Europe_Paper1.pdf?utm_content=buffer82172&amp;utm_medium=social&amp;utm_source=linkedin.com&amp;utm_campaign=buffer</a>	Recommended
1.2	The ABPI Real Word Data Practical Guide provides further context for using real world data but also examples the advantages of RW data vs. RCT data, the possibilities in terms of RWE (e.g. Research vs. Audit vs. Service evaluation)	<a href="http://www.abpi.org.uk/our-work/library/guidelines/Documents/2011-06-13%20ABPI%20guidance%20-%20Demonstrating%20value%20with%20real%20world%20data.pdf">http://www.abpi.org.uk/our-work/library/guidelines/Documents/2011-06-13%20ABPI%20guidance%20-%20Demonstrating%20value%20with%20real%20world%20data.pdf</a>	Required

1.2	Criteria for Distinguishing Effectiveness From Efficacy Trials in Systematic Reviews is a paper which highlights the difference between efficacy (ideal conditions in RCTs as required by regulators) and effectiveness (real world conditions as required by healthcare professionals).	<a href="https://www.ncbi.nlm.nih.gov/books/NBK44029/">https://www.ncbi.nlm.nih.gov/books/NBK44029/</a>	Required
1.2	How we should look to evidence beyond RCTs	<a href="http://www.nejm.org/doi/full/10.1056/NEJMra1614394">http://www.nejm.org/doi/full/10.1056/NEJMra1614394</a>	Required
1.2	Paper in which researchers assess the evidence on the clinical effects of drug for hepatitis C (findings show that the RCTs have a high risk of bias which overestimate beneficial effects of DAAs and underestimate any potential harmful effects)	<a href="http://www.cochrane.org/CD012143/LIVER_direct-acting-antivirals-chronic-hepatitis-c">http://www.cochrane.org/CD012143/LIVER_direct-acting-antivirals-chronic-hepatitis-c</a>	Required
1.2	GetReal project's RWE Navigator forumates how to use of RWE in effectiveness research, and provides recommendations to further advance evidence generation for innovative drugs.	<a href="https://rwe-navigator.eu/">https://rwe-navigator.eu/</a>	Required
1.2	If you want to look at the evidence for clinical guidelines you may also want to look at GRADE	<a href="http://www.gradeworkinggroup.org/">http://www.gradeworkinggroup.org/</a>	Recommended
1.2	Link to papers using GRADE approach to evaluate the quality of observational (and RWE) evidence in research and the strength of recommendations.	<a href="http://annals.org/article.aspx?articleid=1310557">http://annals.org/article.aspx?articleid=1310557</a> <a href="http://annals.org/aim/article/1657880/eradication-hepatitis-c-virus-infection-development-hepatocellular-carcinoma-meta-analysis">http://annals.org/aim/article/1657880/eradication-hepatitis-c-virus-infection-development-hepatocellular-carcinoma-meta-analysis</a> <a href="http://www.ncbi.nlm.nih.gov/pubmed/26827182">http://www.ncbi.nlm.nih.gov/pubmed/26827182</a>	Recommended
1.2	The ISPOR Real World Data Task Force Report describes the development of a framework using real	<a href="https://www.ispor.org/workpaper/RWD_TF/RWTFManuscript.pdf">https://www.ispor.org/workpaper/RWD_TF/RWTFManuscript.pdf</a>	Recommended

	world data to support healthcare coverage and payment decisions in the US -and is therefore an example of the potential of RWE to improve healthcare.		
1.2	The Academy of Medical Sciences also provides details of policy projects which have been carried out using real world data	<a href="https://acmedsci.ac.uk/policy/policy-projects/real-world-data">https://acmedsci.ac.uk/policy/policy-projects/real-world-data</a>	Recommended
1.3	Deloitte's Real-World Evidence Benchmark Survey 2017	<a href="https://www2.deloitte.com/content/dam/Deloitte/us/Documents/life-sciences-health-care/us-lshc-2017-real-world-evidence-survey.pdf">https://www2.deloitte.com/content/dam/Deloitte/us/Documents/life-sciences-health-care/us-lshc-2017-real-world-evidence-survey.pdf</a>	Required
1.3	BMJ Rapid Response for definition of comparative effectiveness research	<a href="http://www.bmj.com/rapid-response/2011/11/03/definition-comparative-effectiveness-research">http://www.bmj.com/rapid-response/2011/11/03/definition-comparative-effectiveness-research</a>	Required
1.5	Market Access Articles published by the Pharmaceutical Marketing Society: Industry and the NHS - can promotion and partnership co-exists?	<a href="http://pmsociety.org.uk/article/industry-and-the-nhs-promotion-and-partnership">1. http://pmsociety.org.uk/article/industry-and-the-nhs-promotion-and-partnership</a>	Required
1.5	Market Access Articles published by the Pharmaceutical Marketing Society: The Future of Market Access – Payers, Patients, Pharmas	<a href="http://pmsociety.org.uk/article/the-future-of-market-access-payers-patients-pharma-report">http://pmsociety.org.uk/article/the-future-of-market-access-payers-patients-pharma-report</a>	Required
1.5	Market Access Articles published by the Pharmaceutical Marketing Society: Market access: please no more talk of 'hurdles' and 'obstacles'	<a href="http://pmsociety.org.uk/article/market-access-please-no-more-talk-of-hurdles-and-obstacles">http://pmsociety.org.uk/article/market-access-please-no-more-talk-of-hurdles-and-obstacles</a>	Required
1.5	This article covers key points around Market Access' need for RWE and public trust.	<a href="https://invivo.pharmamedtechbi.com/IV004954/Real-World-Evidence-And-The-Quest-For-European-Market-Access">https://invivo.pharmamedtechbi.com/IV004954/Real-World-Evidence-And-The-Quest-For-European-Market-Access</a>	Required
1.5	The Pharmaceutical Marketing Society website provides further information on Market Access	<a href="https://pmsociety.org.uk/market-access">https://pmsociety.org.uk/market-access</a>	Recommended

	including current working definitions		
1.5	This article covers; how industry can optimise market access by analysing real world trends in different treatment spaces; industry factors encouraging R&D; issues facing industry	<a href="http://www.outsourcing-pharma.com/Commercial-Services/Real-world-data-studies-could-revitalize-productivity">http://www.outsourcing-pharma.com/Commercial-Services/Real-world-data-studies-could-revitalize-productivity</a>	Recommended
1.6	We recommend watching both Youtube videos posted by the IBD Registry Board in their entirety. They look at 1. Driving Excellence with the IBD Registry (e.g. producing clinical summaries useful to both patients and clinicians, providing better monitoring and outcomes data etc) 2. Audit & Registry – Where next? (e.g. what can be done in research/for patients by unified concerted efforts)	<a href="https://youtu.be/83wUieuol8g">https://youtu.be/83wUieuol8g</a> <a href="https://youtu.be/chA0_LVclAw">https://youtu.be/chA0_LVclAw</a>	Required
1.7	Pharmaceutical Marketing Society's Market Access definitions survey (2017)	<a href="https://pmsociety.org.uk/article/the-pm-society-market-access-survey-2017-results">https://pmsociety.org.uk/article/the-pm-society-market-access-survey-2017-results</a>	Required
1.8	This Deloitte's article may be helpful to discussion as it look at how RWE can enable the life sciences / industry to transform patient care.	<a href="https://www2.deloitte.com/uk/en/pages/life-sciences-and-healthcare/articles/real-world-evidence.html">https://www2.deloitte.com/uk/en/pages/life-sciences-and-healthcare/articles/real-world-evidence.html</a>	Required
1.8	Imperial College Health Partners' initiative to improve the current rehabilitation care pathway for acquired brain injury (ABI)	<a href="http://atlas.ahsnnetwork.com/neurorehabilitation/">http://atlas.ahsnnetwork.com/neurorehabilitation/</a>	Recommended
1.8	Adaptive Licensing Definition	<a href="http://www.abpi.org.uk/our-work/library/industry/Documents/onestopshop_adaptive_licensing.pdf">http://www.abpi.org.uk/our-work/library/industry/Documents/onestopshop_adaptive_licensing.pdf</a>	Recommended
1.8	Early Access to Medicines Scheme Principles	<a href="https://www.gov.uk/government/publications/early-access-to-medicines-scheme-eams-how-the-scheme-works/early-access-to-medicines-scheme-eams-task-group-and-principle">https://www.gov.uk/government/publications/early-access-to-medicines-scheme-eams-how-the-scheme-works/early-access-to-medicines-scheme-eams-task-group-and-principle</a>	

2.1	<p>This link includes essential reading regarding data security awareness and covers:</p> <p>1 The principles and terminology of information governance (IG).</p> <p>2 Basic data security / cyber security terminology.</p> <p>3 The importance of data security to patient/service user care.</p> <p>4 That law and national guidance requires personal information to be protected</p>	<p><a href="https://www.igt.hscic.gov.uk/">https://www.igt.hscic.gov.uk/</a> (powerpoint)</p>	Required
2.1	<p>This report specifically looks a data governance arrangements in relation to RWE and looks at policy/law globally/EU and country level.</p>	<p><a href="https://www.ohe.org/publications/data-governance-arrangements-real-world-evidence">https://www.ohe.org/publications/data-governance-arrangements-real-world-evidence</a></p>	Recommended
2.2	<p>These links include essential reading regarding data protection and data security awareness, GDPR and Caldicott which should be read in their entirety</p>	<p><a href="https://ico.org.uk/for-organisations/guide-to-data-protection/">https://ico.org.uk/for-organisations/guide-to-data-protection/</a></p> <p><a href="https://ico.org.uk/for-organisations/guide-to-data-protection/conditions-for-processing/">https://ico.org.uk/for-organisations/guide-to-data-protection/conditions-for-processing/</a></p> <p><a href="https://ico.org.uk/for-organisations/guide-to-data-protection/principle-6-rights/subject-access-request/">https://ico.org.uk/for-organisations/guide-to-data-protection/principle-6-rights/subject-access-request/</a></p> <p><a href="https://ico.org.uk/for-organisations/guide-to-data-protection/principle-6-rights/damage-or-distress/">https://ico.org.uk/for-organisations/guide-to-data-protection/principle-6-rights/damage-or-distress/</a></p> <p><a href="https://ico.org.uk/for-organisations/guide-to-data-protection/principle-6-rights/preventing-direct-marketing/">https://ico.org.uk/for-organisations/guide-to-data-protection/principle-6-rights/preventing-direct-marketing/</a></p> <p><a href="https://ico.org.uk/for-organisations/guide-to-data-protection/principle-6-rights/automated-decision-taking/">https://ico.org.uk/for-organisations/guide-to-data-protection/principle-6-rights/automated-decision-taking/</a></p> <p><a href="https://ico.org.uk/for-organisations/guide-to-data-protection/principle-6-rights/correcting-inaccurate-personal-data/">https://ico.org.uk/for-organisations/guide-to-data-protection/principle-6-rights/correcting-inaccurate-personal-data/</a></p>	Required

		<p><a href="https://ico.org.uk/for-organisations/guide-to-data-protection/principle-6-rights/compensation">https://ico.org.uk/for-organisations/guide-to-data-protection/principle-6-rights/compensation</a></p> <p><a href="https://ico.org.uk/media/for-organisations/documents/1546/data-controllers-and-data-processors-dp-guide.pdf">https://ico.org.uk/media/for-organisations/documents/1546/data-controllers-and-data-processors-dp-guide.pdf</a></p>	
2.2	These links include essential reading regarding GDPR	<p><a href="https://ico.org.uk/for-organisations/data-protection-reform/overview-of-the-gdpr/">https://ico.org.uk/for-organisations/data-protection-reform/overview-of-the-gdpr/</a></p> <p><a href="https://ico.org.uk/for-organisations/data-protection-reform/overview-of-the-gdpr/individuals-rights/the-right-to-be-informed">https://ico.org.uk/for-organisations/data-protection-reform/overview-of-the-gdpr/individuals-rights/the-right-to-be-informed</a></p> <p><a href="https://ico.org.uk/for-organisations/data-protection-reform/overview-of-the-gdpr/individuals-rights/the-right-to-rectification">https://ico.org.uk/for-organisations/data-protection-reform/overview-of-the-gdpr/individuals-rights/the-right-to-rectification</a></p> <p><a href="https://ico.org.uk/for-organisations/data-protection-reform/overview-of-the-gdpr/individuals-rights/the-right-to-erasure">https://ico.org.uk/for-organisations/data-protection-reform/overview-of-the-gdpr/individuals-rights/the-right-to-erasure</a></p> <p><a href="https://ico.org.uk/for-organisations/data-protection-reform/overview-of-the-gdpr/individuals-rights/the-right-to-restrict-processing/">https://ico.org.uk/for-organisations/data-protection-reform/overview-of-the-gdpr/individuals-rights/the-right-to-restrict-processing/</a></p> <p><a href="https://ico.org.uk/for-organisations/data-protection-reform/overview-of-the-gdpr/individuals-rights/the-right-to-data-portability/">https://ico.org.uk/for-organisations/data-protection-reform/overview-of-the-gdpr/individuals-rights/the-right-to-data-portability/</a></p> <p><a href="https://ico.org.uk/for-organisations/data-protection-reform/overview-of-the-gdpr/individuals-rights/the-right-to-">https://ico.org.uk/for-organisations/data-protection-reform/overview-of-the-gdpr/individuals-rights/the-right-to-</a></p>	Recommended

		<p><u>object/</u></p> <p><a href="https://ico.org.uk/for-organisations/data-protection-refo rm/overview-of-the-gdpr/individuals-rights/rights-relate d-to-automated-decision-making-and-profiling">https://ico.org.uk/for-organisations/data-protection-refo rm/overview-of-the-gdpr/individuals-rights/rights-relate d-to-automated-decision-making-and-profiling</a></p> <p><a href="http://ec.europa.eu/justice/data-protection/">http://ec.europa.eu/justice/data-protection/</a></p> <p><a href="http://amberhawk.typepad.com/amberhawk/2017/01/w hy-the-uk-is-unlikely-to-get-an-adequacy-determinatio n-post-brexit.html">http://amberhawk.typepad.com/amberhawk/2017/01/w hy-the-uk-is-unlikely-to-get-an-adequacy-determinatio n-post-brexit.html</a></p> <p><a href="http://www.eudataprotectionregulation.com/data-prote ction-design-by-default">http://www.eudataprotectionregulation.com/data-prote ction-design-by-default</a></p>	
2.2	These links include essential reading regarding Caldicott	<p><a href="https://www.igt.hscic.gov.uk/Caldicott2Principles.aspx ?tk=429286257340365&amp;Inv=18&amp;cb=1540aa1f-3697-4 f9d-9865-c9304b732cc1">https://www.igt.hscic.gov.uk/Caldicott2Principles.aspx ?tk=429286257340365&amp;Inv=18&amp;cb=1540aa1f-3697-4 f9d-9865-c9304b732cc1</a></p> <p><a href="https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/535024/data-security-review.PD">https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/535024/data-security-review.PD</a></p> <p><a href="https://www.igt.hscic.gov.uk/">https://www.igt.hscic.gov.uk/</a> (powerpoint)</p> <p><a href="https://pharmaphorum.com/views-and-analysis/health care-innovation-needs-block-chain/#">https://pharmaphorum.com/views-and-analysis/health care-innovation-needs-block-chain/#</a></p>	Required
2.2	Article on Brexit: Data protection and cyber security law implications	<a href="https://www.twobirds.com/en/news/articles/2016/uk/br exit-data-protection-and-cyber-security-law-implications">https://www.twobirds.com/en/news/articles/2016/uk/br exit-data-protection-and-cyber-security-law-implications</a>	Recommended
2.2	Allen & Overy's General Data Protection Regulation	<a href="http://www.allenovery.com/SiteCollectionDocuments/">http://www.allenovery.com/SiteCollectionDocuments/</a>	Recommended

	Guide	<a href="https://www.digitalhealth.net/2017/03/deepmind-health-royal-frees-criticised-lack-patient-involvement/">https://www.digitalhealth.net/2017/03/deepmind-health-royal-frees-criticised-lack-patient-involvement/</a>	
2.2	Article on the Queen's Speech and the promised "Data Protection (Exemptions from GDPR) Bill	<a href="http://amberhawk.typepad.com/amberhawk/2017/06/queens-speech-and-the-promised-data-protection-exemptions-from-gdpr-bill.html">http://amberhawk.typepad.com/amberhawk/2017/06/queens-speech-and-the-promised-data-protection-exemptions-from-gdpr-bill.html</a>	Recommended
2.2	NHS Digital's Disclosure Control Procedure of personal data	<a href="http://content.digital.nhs.uk/media/23395/Disclosure-Contro-Procedure/pdf/Disclosure_Control_Procedure.pdf">http://content.digital.nhs.uk/media/23395/Disclosure-Contro-Procedure/pdf/Disclosure_Control_Procedure.pdf</a>	Recommended
2.2	Article on Drawing the Line between Identifying and Non-identifying Data	<a href="http://webarchive.nationalarchives.gov.uk/+/http://www.isb.nhs.uk/documents/isp-1523/amp-20-2010/1523202010guid.pdf">http://webarchive.nationalarchives.gov.uk/+/http://www.isb.nhs.uk/documents/isp-1523/amp-20-2010/1523202010guid.pdf</a>	Recommended
2.3	Article on Google DeepMind and the Royal Free: A Cautionary Tale	<a href="https://phys.org/news/2017-03-deepmind-royal-free-cautionary-tale-health.html">https://phys.org/news/2017-03-deepmind-royal-free-cautionary-tale-health.html</a>	Required
2.3	This is an article focused on RWE and the (patient) privacy predicament	<a href="http://www.ey.com/Publication/vwLUAssets/ey-real-world-evidence-the-privacy-predicament/\$FILE/ey-real-world-evidence-the-privacy-predicament.pdf">http://www.ey.com/Publication/vwLUAssets/ey-real-world-evidence-the-privacy-predicament/\$FILE/ey-real-world-evidence-the-privacy-predicament.pdf</a>	Recommended
2.3	Patient and patient involvement in research using secondary-use data	<a href="https://simondenegri.com/2017/08/03/getting-a-grip-2-on-public-involvement-reporting-in-research-papers/amp/">https://simondenegri.com/2017/08/03/getting-a-grip-2-on-public-involvement-reporting-in-research-papers/amp/</a>  <a href="https://researchinvolvement.biomedcentral.com/articles/10.1186/s40900-017-0062-2">https://researchinvolvement.biomedcentral.com/articles/10.1186/s40900-017-0062-2</a>	Recommended
2.4	Article on "Inexcusable" mistakes made in Google DeepMind and Royal Free NHS data deal – Study	<a href="https://www.digitalhealth.net/2017/03/deepmind-health-royal-frees-criticised-lack-patient-involvement/">https://www.digitalhealth.net/2017/03/deepmind-health-royal-frees-criticised-lack-patient-involvement/</a>	Required

2.4	Real-world evidence: the privacy predicament. Implications of data privacy regulations and the management of associated risks	<a href="http://www.ey.com/Publication/vwLUAssets/ey-real-world-evidence-the-privacy-predicament/\$FILE/ey-real-world-evidence-the-privacy-predicament.pdf">http://www.ey.com/Publication/vwLUAssets/ey-real-world-evidence-the-privacy-predicament/\$FILE/ey-real-world-evidence-the-privacy-predicament.pdf</a>	Required
2.4	Article describing how Google DeepMind's first deal with the NHS has been torn apart in a new academic study	<a href="http://uk.businessinsider.com/deepmind-royal-free-london-nhs-deal-inexcusable-mistakes-2017-3">http://uk.businessinsider.com/deepmind-royal-free-london-nhs-deal-inexcusable-mistakes-2017-3</a>	Recommended
3.1	The Health Data Finder provides summary information about key NHS datasets such as context of data collected, extraction frequency, type of data, coverage, geography, volume, granularity, access, consent etc.	<a href="http://www.hdf.nihr.ac.uk/datasets">http://www.hdf.nihr.ac.uk/datasets</a>	Required
3.1	An index of where to find publicly available health and care data (links provided) and which organisations are responsible for the data.	<a href="https://digital.nhs.uk/media/31778/NHS-Digital-Guide-For-Journalists-2017/pdf/80477_NHSDigital_Guide_for_journo-2017_electronic_FINAL">https://digital.nhs.uk/media/31778/NHS-Digital-Guide-For-Journalists-2017/pdf/80477_NHSDigital_Guide_for_journo-2017_electronic_FINAL</a>	Required
3.1	Link to Understanding Patient Data website which provides information about the uses of health information and how and why data can be used for care and research whilst protecting privacy	<a href="https://understandingpatientdata.org.uk/about-us">https://understandingpatientdata.org.uk/about-us</a>	Required
3.1	NHS Digital's introduction to HES	<a href="http://content.digital.nhs.uk/hes">http://content.digital.nhs.uk/hes</a>	Recommended
3.1	NHS Digital's introduction to GP QoF data	<a href="http://qof.digital.nhs.uk/">http://qof.digital.nhs.uk/</a>	Recommended
3.1	NHS Digital's introduction to Prescribing data	<a href="http://content.digital.nhs.uk/prescribing">http://content.digital.nhs.uk/prescribing</a>	Recommended
3.1	Article profiling CPRD	<a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4521131/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4521131/</a>	Recommended

3.3	<p>NHS Digital's HES Analysis Guide (all 22 pages are relevant). The guide:</p> <ol style="list-style-type: none"> <li>1 Presents an overview of the data available in HES</li> <li>2 Describes the sensitivities of some of this data</li> <li>3 Defines the limits up to which data can be released without risk of encountering problems with those sensitivities</li> <li>4 Gives rules for releasing HES data</li> <li>5 Outlines some of the data quality and integrity issues.</li> </ol>	<a href="http://content.digital.nhs.uk/media/1592/HES-analysis-guide/pdf/HES_Analysis_Guide_Jan_2014.pdf">http://content.digital.nhs.uk/media/1592/HES-analysis-guide/pdf/HES_Analysis_Guide_Jan_2014.pdf</a>	Required
3.4	<p>This is a consultation document which contains information regarding:</p> <ol style="list-style-type: none"> <li>1 Current Hospital Datasets</li> <li>2 Future Hospital Extracts</li> <li>3 International Context</li> <li>4 HES processing and outputs</li> <li>5 Example Data Set</li> <li>6 Uses of HES Data</li> <li>7 HES data quality</li> <li>8 International Case Studies</li> <li>9 Glossary of Terms</li> </ol>	<a href="http://content.digital.nhs.uk/media/1592/HES-analysis-guide/pdf/HES_Analysis_Guide_Jan_2014.pdf">http://content.digital.nhs.uk/media/1592/HES-analysis-guide/pdf/HES_Analysis_Guide_Jan_2014.pdf</a>	Recommended
3.5	Link to .Quality Outcomes Framework in the GP data hub	<a href="https://digital.nhs.uk/GP-data-hub/quality-outcomes-framework-in-GP-data-hub">https://digital.nhs.uk/GP-data-hub/quality-outcomes-framework-in-GP-data-hub</a>	Required
3.5	Link to Dementia 65+ Estimated Diagnosis Rate Indicator in the GP data hub	<a href="https://digital.nhs.uk/GP-data-hub/Dementia-65-Estimated-Diagnosis-Rate-Indicator">https://digital.nhs.uk/GP-data-hub/Dementia-65-Estimated-Diagnosis-Rate-Indicator</a>	Required
3.5	Hospital Estates and Facilities Statistics	<a href="http://hefs.hscic.gov.uk/ERIC.asp/">http://hefs.hscic.gov.uk/ERIC.asp/</a> <a href="http://hefs.hscic.gov.uk/PLACE.asp">http://hefs.hscic.gov.uk/PLACE.asp</a>	Required
3.5	Open Prescribing(BI Tool)	<a href="https://openprescribing.net">https://openprescribing.net</a>	Required

3.5	Link to NHS Digital's data and information strategy which aims for better data, better access. Key areas in report include: 1 Data content 2 Data access 3 Analysis 4 Data science	<a href="https://digital.nhs.uk/data-and-information/strategy">https://digital.nhs.uk/data-and-information/strategy</a>	Recommended
3.6	The whole article is relevant to the discussion point: Are Real-World Data and Evidence Good Enough to Inform Health Care and Health Policy Decision-Making?	<a href="https://link.springer.com/chapter/10.1007/978-981-10-3262-2_8">https://link.springer.com/chapter/10.1007/978-981-10-3262-2_8</a>	Recommended
3.7	Open Data Institute's definition of open data	<a href="http://theodi.org/what-is-open-data">http://theodi.org/what-is-open-data</a>	Required
3.7	Open Data Institute's definition of open data (in depth)	<a href="http://opendefinition.org/">http://opendefinition.org/</a>	Recommended
3.8	Open Data in the Health Sector Report (2017) to include open data recommendations to data publishers	<a href="http://openhealthcare.org.uk/open-data-in-the-health-sector/">http://openhealthcare.org.uk/open-data-in-the-health-sector/</a>	Required
3.8	UK Government's Open Standards Principles: a What open standards help to deliver b Open Standards Principles	<a href="https://www.gov.uk/government/publications/open-standards-principles/open-standards-principles">https://www.gov.uk/government/publications/open-standards-principles/open-standards-principles</a>	Recommended
3.8	European Interoperability Framework (EU Commission)	<a href="https://ec.europa.eu/isa2/eif_en">https://ec.europa.eu/isa2/eif_en</a>	Recommended
3.8	Interoperability Toolkit (UK NHS)	<a href="https://digital.nhs.uk/interoperability-toolkit">https://digital.nhs.uk/interoperability-toolkit</a>	Recommended
3.8	ONC Standards and Interoperability Framework (US Government)	<a href="https://www.healthit.gov/sites/default/files/pdf/factsheets/standards-and-interoperability-framework.pdf">https://www.healthit.gov/sites/default/files/pdf/factsheets/standards-and-interoperability-framework.pdf</a>	Recommended

3.8	SNOMED CT (Clinical Coding)	<a href="http://www.snomed.org/snomed-ct/what-is-snomed-c">http://www.snomed.org/snomed-ct/what-is-snomed-c</a>	Recommended
3.8	ICD (International Statistical Classification of Diseases and Related Health Problems)	<a href="http://www.who.int/classifications/icd/en/">http://www.who.int/classifications/icd/en/</a>	Recommended
3.8	UK READ Codes (GP clinical coding)	<a href="https://digital.nhs.uk/article/1104/Read-Codes">https://digital.nhs.uk/article/1104/Read-Codes</a>	Recommended
3.8	HL7 Messaging (Healthcare Interoperability)	<a href="http://www.hl7.org/documentcenter/public_temp_F492D7D6-1C23-BA17-0C3158565321647B/calendariofevents/himss/2012/SNOMED%20CT%20and%20HL7%20--%20Bringing%20Standards%20Together.pdf">http://www.hl7.org/documentcenter/public_temp_F492D7D6-1C23-BA17-0C3158565321647B/calendariofevents/himss/2012/SNOMED%20CT%20and%20HL7%20--%20Bringing%20Standards%20Together.pdf</a>	Recommended
3.8	Open Data Handbook	<a href="http://opendatahandbook.org/guide/en/what-is-open-data/">http://opendatahandbook.org/guide/en/what-is-open-data/</a>	Recommended
3.8	Supporting open data and transparency (NHS)	<a href="http://content.digital.nhs.uk/transparency">http://content.digital.nhs.uk/transparency</a>	Recommended
3.8	UK National Statistician's Guidance (Open Data)	<a href="https://www.statisticsauthority.gov.uk/national-statistician/ns-reports-reviews-guidance-and-advisory-committees/national-statisticians-guidance/">https://www.statisticsauthority.gov.uk/national-statistician/ns-reports-reviews-guidance-and-advisory-committees/national-statisticians-guidance/</a>	Recommended
3.9	European Medicines Agency: Information Management Strategy	<a href="http://www.ema.europa.eu/ema/index.jsp?curl=pages/about_us/general/general_content_001702.jsp&amp;mid=WC0b01ac0580ae7752">http://www.ema.europa.eu/ema/index.jsp?curl=pages/about_us/general/general_content_001702.jsp&amp;mid=WC0b01ac0580ae7752</a>	Recommended
3.9	A-Z of NHS Digital Official and National Statistics Publications (multiple sources of open data)	<a href="http://content.digital.nhs.uk/statisticsa-z">http://content.digital.nhs.uk/statisticsa-z</a>	Recommended
4.0	GetReal project's newly released policy recommendations relating to real-world evidence.	<a href="http://www.imi-getreal.eu">www.imi-getreal.eu</a> <a href="http://www.imi-getreal.eu/Portals/1/Documents/01%20deliverables/2017-03-29%20WP1%20-%20Adva">http://www.imi-getreal.eu/Portals/1/Documents/01%20deliverables/2017-03-29%20WP1%20-%20Adva</a>	Recommended

		<p><a href="#"><u>ncing%20Evidence%20Generation%20for%20New%20Drugs.pdf</u></a></p> <p><a href="#"><u>http://www.imi-getreal.eu/News/ID/80/Policy-recommendations-from-WP1-Policy-Expert-Group-online</u></a></p>	
4.0	GetReal project's Directory or Resources	<a href="#"><u>https://rwe-navigator.eu/directoryofresources/</u></a>	Recommended