



Analysis of Methadone Prescribing in Wales Case Study July 2024

Thomas Sellwood

Amina Meah

Jonathan Lesmond

Introduction



Geodemographics are consumer segmentation models that group people based on demographic attributes within specific geographic areas. Factors like age, gender, education level, and income help reveal lifestyle segments that can be used for marketing, retail planning, and site selection.

These profiles are valuable because they identify and locate lifestyle groups that are not easily captured by traditional demographic data alone. While traditional data provides basic census counts, geodemographic profiles offer deeper lifestyle insights, making them especially useful for targeted analysis and decision-making.

Case Study Overview

The case study is a review of Methadone Hydrochloride oral liquid prescribing for the year 2023, measured against the socioeconomic and long-term health of the areas, compared within each health board in Wales.



The objective of the analysis is to compare the volumes of Methadone prescribing across Wales in comparison to long term health and socioeconomic status of the areas.



The key questions from this are do areas with higher long-term health have high Methadone prescribing and do areas with lower socioeconomic status have higher volume of Methadone prescribing.

Datasets Gathered

Datasets	Source	File Type	Type of Data	Applicable
Wales maps	UK data service	Shape file	Geographic data	y
Health board map	UK data service	Shape file	Geographic data	y
Prescribing data in Wales 2023	NHS data	CSV file	Health Data	y
Addresses for GP surgeries in Wales	NHS data	CSV file	Geographic data	y
Postcode data	UK data service	Shape file	Geographic Data	y
Gp main sites	NHS data	Shape file	Geographic Data	n
Socioeconomic Data	UK data service	CSV	socioeconomic data	y
Long Term Health Data	UK data service	CSV	Health Data	y

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	IB	Locality	PracticeID	BNFCode	BNFName	Items	NIC	ActCost	Quantity	DDD	ADQ	Period		
2	7A6	6A1	W00118	0101021B	Peptac_Li	2	3.98	3.7314	1000	0	0	202301		
3	7A6	6A1	W00118	0101030B	Gppe_Liq.	8	12.34	11.5916	3100	0	0	202301		
4	7A6	6A1	W00118	0101030B	Gppe_Liq.	6	30.72	28.6842	3000	0	0	202301		
5	7A6	6A1	W00118	0101030B	Gavison_C	2	7.68	7.1773	750	0	0	202301		
6	7A6	6A1	W00118	0102000N	Hioscine_I	3	18.33	17.208	248	44.6667	33.5	202301		
7	7A6	6A1	W00118	0102000P	Mebeverin	1	6.39	5.9635	100	45	33.3333	202301		
8	7A6	6A1	W00118	0102000T	Peppermir	1	7.04	6.5688	84	0	28	202301		
9	7A6	6A1	W00118	0103010H	Famotidin	1	22.4	20.8736	28	14	14	202301		
10	7A6	6A1	W00118	0103010H	Famotidin	1	34.9	32.5148	28	28	28	202301		
11	7A6	6A1	W00118	0103010N	Nizatidine	1	44.24	41.3132	56	28	28	202301		
12	7A6	6A1	W00118	0103050E	Esomepra	2	12.88	12.02	56	74.6666	112	202301		
13	7A6	6A1	W00118	0103050L	Lansopraz	55	63.46	61.1866	1532	1532	2298	202301		
14	7A6	6A1	W00118	0103050L	Lansopraz	48	30.77	31.6522	954	477	715.5	202301		
15	7A6	6A1	W00118	0103050P	Omeprazo	13	34.79	32.8616	336	336	336	202301		
16	7A6	6A1	W00118	0103050P	Omeprazo	2	2.7	2.5394	56	28	28	202301		
17	7A6	6A1	W00118	0103050P	Omeprazo	3	20.49	19.1196	21	42	42	202301		
18	7A6	6A1	W00118	0103050R	Pantopraz	1	1.01	0.9531	28	14	18.6667	202301		
19	7A6	6A1	W00118	0104020L	Loperamic	1	5.21	4.9645	168	33.6	42	202301		
20	7A6	6A1	W00118	0105000H	Mesalazin	1	70.92	66.0602	28	0.1867	17.5	202301		
21	7A6	6A1	W00118	0105000H	Pentasa_E	1	70.92	66.0602	28	0.1867	17.5	202301		
22	7A6	6A1	W00118	0105000H	Mezavant	1	40.09	37.4483	56	44.8	42	202301		
23	7A6	6A1	W00118	0105010B	Isalofalk_C	2	91.18	85.1408	56	112	105	202301		
24	7A6	6A1	W00118	0106010E	Loplag_Hud	1	3.73	3.5862	28	14	14	202301		
25	7A6	6A1	W00118	0106010N	Normacol	1	6.67	6.2242	60	4.65	3.72	202301		
26	7A6	6A1	W00118	0106010N	Normacol	1	8.45	7.8819	500	0	35.7143	202301		
27	7A6	6A1	W00118	0106020U	Senna_Taf	5	3.69	3.9986	112	0	56	202301		
28	7A6	6A1	W00118	0106040U	Macrogol	4	16.69	15.8932	106	0	0	202301		
29	7A6	6A1	W00118	0106040U	Laxido_O	5	18.99	18.1474	132	0	0	202301		
30	7A6	6A1	W00118	0106050B	Moviprep	1	10.36	9.6607	4	0	0	202301		
31	7A6	6A1	W00118	0106060B	Moventig	1	51.52	48.093	28	28	0	202301		
32	7A6	6A1	W00118	0109040N	Creon_250	1	113	105.2493	400	0	0	202301		
33	7A6	6A1	W00118	0201010F	Digoxin_6	9	14.51	14.4225	84	21	0	202301		
34	7A6	6A1	W00118	0201010F	Digoxin_1	7	11.89	11.7603	70	35	0	202301		
35	7A6	6A1	W00118	0202010B	Bendroflu	1	0.71	0.6737	28	28	28	202301		
36	7A6	6A1	W00118	0202010P	Indapamid	5	5	4.7185	140	140	140	202301		
37	7A6	6A1	W00118	0207010P	Indanamid	5	15.85	15.3335	140	84	84	202301		

CDU ID	REG_CODE	LA1REG	TY1REG	TY1R19	PK20	PK21	PK22	PK23	PK24	PK25	PK26	PK27	PK28	PK29	PK30	PK31	PK32	PK33	PK34	PK35	PK36	PK37	PK38	PK39	PK40	PK41	PK42	PK43	PK44	PK45	PK46	PK47	PK48	PK49	PK50	PK51	PK52	PK53	PK54	PK55	PK56	PK57	PK58	PK59	PK60	PK61	PK62	PK63	PK64	PK65	PK66	PK67	PK68	PK69	PK70	PK71	PK72	PK73	PK74	PK75	PK76	PK77	PK78	PK79	PK80	PK81	PK82	PK83	PK84	PK85	PK86	PK87	PK88	PK89	PK90	PK91	PK92	PK93	PK94	PK95	PK96	PK97	PK98	PK99	PK100	PK101	PK102	PK103	PK104	PK105	PK106	PK107	PK108	PK109	PK110	PK111	PK112	PK113	PK114	PK115	PK116	PK117	PK118	PK119	PK120	PK121	PK122	PK123	PK124	PK125	PK126	PK127	PK128	PK129	PK130	PK131	PK132	PK133	PK134	PK135	PK136	PK137	PK138	PK139	PK140	PK141	PK142	PK143	PK144	PK145	PK146	PK147	PK148	PK149	PK150	PK151	PK152	PK153	PK154	PK155	PK156	PK157	PK158	PK159	PK160	PK161	PK162	PK163	PK164	PK165	PK166	PK167	PK168	PK169	PK170	PK171	PK172	PK173	PK174	PK175	PK176	PK177	PK178	PK179	PK180	PK181	PK182	PK183	PK184	PK185	PK186	PK187	PK188	PK189	PK190	PK191	PK192	PK193	PK194	PK195	PK196	PK197	PK198	PK199	PK200	PK201	PK202	PK203	PK204	PK205	PK206	PK207	PK208	PK209	PK210	PK211	PK212	PK213	PK214	PK215	PK216	PK217	PK218	PK219	PK220	PK221	PK222	PK223	PK224	PK225	PK226	PK227	PK228	PK229	PK230	PK231	PK232	PK233	PK234	PK235	PK236	PK237	PK238	PK239	PK240	PK241	PK242	PK243	PK244	PK245	PK246	PK247	PK248	PK249	PK250	PK251	PK252	PK253	PK254	PK255	PK256	PK257	PK258	PK259	PK260	PK261	PK262	PK263	PK264	PK265	PK266	PK267	PK268	PK269	PK270	PK271	PK272	PK273	PK274	PK275	PK276	PK277	PK278	PK279	PK280	PK281	PK282	PK283	PK284	PK285	PK286	PK287	PK288	PK289	PK290	PK291	PK292	PK293	PK294	PK295	PK296	PK297	PK298	PK299	PK300	PK301	PK302	PK303	PK304	PK305	PK306	PK307	PK308	PK309	PK310	PK311	PK312	PK313	PK314	PK315	PK316	PK317	PK318	PK319	PK320	PK321	PK322	PK323	PK324	PK325	PK326	PK327	PK328	PK329	PK330	PK331	PK332	PK333	PK334	PK335	PK336	PK337	PK338	PK339	PK340	PK341	PK342	PK343	PK344	PK345	PK346	PK347	PK348	PK349	PK350	PK351	PK352	PK353	PK354	PK355	PK356	PK357	PK358	PK359	PK360	PK361	PK362	PK363	PK364	PK365	PK366	PK367	PK368	PK369	PK370	PK371	PK372	PK373	PK374	PK375	PK376	PK377	PK378	PK379	PK380	PK381	PK382	PK383	PK384	PK385	PK386	PK387	PK388	PK389	PK390	PK391	PK392	PK393	PK394	PK395	PK396	PK397	PK398	PK399	PK400	PK401	PK402	PK403	PK404	PK405	PK406	PK407	PK408	PK409	PK410	PK411	PK412	PK413	PK414	PK415	PK416	PK417	PK418	PK419	PK420	PK421	PK422	PK423	PK424	PK425	PK426	PK427	PK428	PK429	PK430	PK431	PK432	PK433	PK434	PK435	PK436	PK437	PK438	PK439	PK440	PK441	PK442	PK443	PK444	PK445	PK446	PK447	PK448	PK449	PK450	PK451	PK452	PK453	PK454	PK455	PK456	PK457	PK458	PK459	PK460	PK461	PK462	PK463	PK464	PK465	PK466	PK467	PK468	PK469	PK470	PK471	PK472	PK473	PK474	PK475	PK476	PK477	PK478	PK479	PK480	PK481	PK482	PK483	PK484	PK485	PK486	PK487	PK488	PK489	PK490	PK491	PK492	PK493	PK494	PK495	PK496	PK497	PK498	PK499	PK500	PK501	PK502	PK503	PK504	PK505	PK506	PK507	PK508	PK509	PK510	PK511	PK512	PK513	PK514	PK515	PK516	PK517	PK518	PK519	PK520	PK521	PK522	PK523	PK524	PK525	PK526	PK527	PK528	PK529	PK530	PK531	PK532	PK533	PK534	PK535	PK536	PK537	PK538	PK539	PK540	PK541	PK542	PK543	PK544	PK545	PK546	PK547	PK548	PK549	PK550	PK551	PK552	PK553	PK554	PK555	PK556	PK557	PK558	PK559	PK560	PK561	PK562	PK563	PK564	PK565	PK566	PK567	PK568	PK569	PK570	PK571	PK572	PK573	PK574	PK575	PK576	PK577	PK578	PK579	PK580	PK581	PK582	PK583	PK584	PK585	PK586	PK587	PK588	PK589	PK590	PK591	PK592	PK593	PK594	PK595	PK596	PK597	PK598	PK599	PK600	PK601	PK602	PK603	PK604	PK605	PK606	PK607	PK608	PK609	PK610	PK611	PK612	PK613	PK614	PK615	PK616	PK617	PK618	PK619	PK620	PK621	PK622	PK623	PK624	PK625	PK626	PK627	PK628	PK629	PK630	PK631	PK632	PK633	PK634	PK635	PK636	PK637	PK638	PK639	PK640	PK641	PK642	PK643	PK644	PK645	PK646	PK647	PK648	PK649	PK650	PK651	PK652	PK653	PK654	PK655	PK656	PK657	PK658	PK659	PK660	PK661	PK662	PK663	PK664	PK665	PK666	PK667	PK668	PK669	PK670	PK671	PK672	PK673	PK674	PK675	PK676	PK677	PK678	PK679	PK680	PK681	PK682	PK683	PK684	PK685	PK686	PK687	PK688	PK689	PK690	PK691	PK692	PK693	PK694	PK695	PK696	PK697	PK698	PK699	PK700	PK701	PK702	PK703	PK704	PK705	PK706	PK707	PK708	PK709	PK710	PK711	PK712	PK713	PK714	PK715	PK716	PK717	PK718	PK719	PK720	PK721	PK722	PK723	PK724	PK725	PK726	PK727	PK728	PK729	PK730	PK731	PK732	PK733	PK734	PK735	PK736	PK737	PK738	PK739	PK740	PK741	PK742	PK743	PK744	PK745	PK746	PK747	PK748	PK749	PK750	PK751	PK752	PK753	PK754	PK755	PK756	PK757	PK758	PK759	PK760	PK761	PK762	PK763	PK764	PK765	PK766	PK767	PK768	PK769	PK770	PK771	PK772	PK773	PK774	PK775	PK776	PK777	PK778	PK779	PK780	PK781	PK782	PK783	PK784	PK785	PK786	PK787	PK788	PK789	PK790	PK791	PK792	PK793	PK794	PK795	PK796	PK797	PK798	PK799	PK800	PK801	PK802	PK803	PK804	PK805	PK806	PK807	PK808	PK809	PK810	PK811	PK812	PK813	PK814	PK815	PK816	PK817	PK818	PK819	PK820	PK821	PK822	PK823	PK824	PK825	PK826	PK827	PK828	PK829	PK830	PK831	PK832	PK833	PK834	PK835	PK836	PK837	PK838	PK839	PK840	PK841	PK842	PK843	PK844	PK845	PK846	PK847	PK848	PK849	PK850	PK851	PK852	PK853	PK854	PK855	PK856	PK857	PK858	PK859	PK860	PK861	PK862	PK863	PK864	PK865	PK866	PK867	PK868	PK869	PK870	PK871	PK872	PK873	PK874	PK875	PK876	PK877	PK878	PK879	PK880	PK881	PK882	PK883	PK884	PK885	PK886	PK887	PK888	PK889	PK890	PK891	PK892	PK893	PK894	PK895	PK896	PK897	PK898	PK899	PK900	PK901	PK902	PK903	PK904	PK905	PK906	PK907	PK908	PK909	PK910	PK911	PK912	PK913	PK914	PK915	PK916	PK917	PK918	PK919	PK920	PK921	PK922	PK923	PK924	PK925	PK926	PK927	PK928	PK929	PK930	PK931	PK932	PK933	PK934	PK935	PK936	PK937	PK938	PK939	PK940	PK941	PK942	PK943	PK944	PK945	PK946	PK947	PK948	PK949	PK950	PK951	PK952	PK953	PK954	PK955	PK956	PK957	PK958	PK959	PK960	PK961	PK962	PK963	PK964	PK965	PK966	PK967	PK968	PK969	PK970	PK971	PK972	PK973	PK974	PK975	PK976	PK977	PK978	PK979	PK980	PK981	PK982	PK983	PK984	PK985	PK986	PK987	PK988	PK989	PK990	PK991	PK992	PK993	PK994	PK995	PK996	PK997	PK998	PK999	PK1000	PK1001	PK1002	PK1003	PK1004	PK1005	PK1006	PK1007	PK1008	PK1009	PK1010	PK1011	PK1012	PK1013	PK1014	PK1015	PK1016	PK1017	PK1018	PK1019	PK1020	PK1021	PK1022	PK1023	PK1024	PK1025	PK1026	PK1027	PK1028	PK1029	PK1030	PK1031	PK1032	PK1033	PK1034	PK1035	PK1036	PK1037	PK1038	PK1039	PK1040	PK1041	PK1042	PK1043	PK1044	PK1045	PK1046	PK1047	PK1048	PK1049	PK1050	PK1051	PK1052	PK1053	PK1054	PK1055	PK1056	PK1057	PK1058	PK1059	PK1060	PK1061	PK1062	PK1063	PK1064	PK1065	PK1066	PK1067	PK1068	PK1069	PK1070	PK1071	PK1072	PK1073	PK1074	PK1075	PK1076	PK1077	PK1078	PK1079	PK1080	PK1081	PK1082	PK1083	PK1084	PK1085	PK1086	PK1087	PK1088	PK1089	PK1090	PK1091	PK1092	PK1093	PK1094	PK1095	PK1096	PK1097	PK1098	PK1099	PK1100	PK1101	PK1102	PK1103	PK1104	PK1105	PK1106	PK1107	PK1108	PK1109	PK1110	PK1111	PK1112	PK1113	PK1114	PK1115	PK1116	PK1117	PK1118	PK1119	PK1120	PK1121	PK1122	PK1123	PK1124	PK1125	PK1126	PK1127	PK1128	PK1129	PK1130	PK1131	PK1132	PK1133	PK1134	PK1135	PK1136	PK1137	PK1138	PK1139	PK1140	PK1141	PK1142	PK1143	PK1144	PK1145	PK1146	PK1147	PK1148	PK1149	PK1150	PK1151	PK1152	PK1153	PK1154	PK1155	PK1156	PK1157	PK1158	PK1159	PK1160	PK1161	PK1162	PK1163	PK1164	PK1165	PK1166	PK1167	PK1168	PK1169	PK1170	PK1171	PK1172	PK1173	PK1174	PK1175	PK1176	PK1177	PK1178	PK1179	PK1180	PK1181	PK1182	PK1183	PK1184	PK1185	PK1186	PK1187	PK1188	PK1189	PK1190	PK1191	PK1192	PK1193	PK1194	PK1195	PK1196	PK1197	PK1198	PK1199	PK1200	PK1201	PK1202	PK1203	PK1204	PK1205	PK1206	PK1207	PK1208	PK1209	PK1210	PK1211	PK1212	PK1213	PK1214	PK1215	PK1216	PK1217	PK1218	PK1219	PK1220	PK1221	PK1222	PK1223	PK1224	PK1225	PK1226	PK1227	PK1228	PK1229	PK1230	PK1231	PK1232	PK1233	PK1234	PK1235	PK1236	PK1237	PK1238	PK1239	PK1240	PK1241	PK1242	PK1243	PK1244	PK1245	PK1246	PK1247	PK1248	PK1249	PK1250	PK1251	PK1252	PK1253	PK1254	PK1255	PK1256	PK1257	PK1258	PK1259	PK1260	PK1261	PK1262	PK1263	PK1264	PK1265	PK1266	PK1267	PK1268	PK1269	PK1270	PK1271	PK1272	PK1273	PK1274	PK1275	PK1276	PK1277	PK1278	PK1279	PK1280	PK1281	PK1282	PK1283	PK1284	PK1285	PK1286	PK1287	PK1288	PK1289	PK1290	PK1291	PK1292	PK1293	PK1294	PK1295	PK1296	PK1297	PK1298	PK1299	PK1300	PK1301	PK1302	PK1303	PK1304	PK1305	PK1306	PK1307	PK1308	PK1309	PK1310	PK1311	PK1312	PK1313	PK1314	PK1315	PK1316	PK1317	PK1318	PK1319	PK1320	PK1321	PK1322	PK1323	PK1324	PK1325	PK1326	PK1327	PK1328	PK1329	PK1330	PK1331	PK1332	PK1333	PK1334	PK1335	PK1336	PK1337	PK1338	PK1339	PK1340	PK1341	PK1342	PK1343	PK1344	PK1345	PK1346	PK1347	PK1348	PK1349	PK1350	PK1351	PK1352	PK1353	PK1354	PK1355	PK1356	PK1357	PK1358	PK1359
--------	----------	--------	--------	--------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------

Data Acquisition Overview

Once the case study topic was agreed then our initial steps in the data acquisition are detailed below.

First step was to create a central repository to store the data, for our team we utilized Microsoft Teams to store all the data.

Next step was to identify the types of data pertinent to our case study e.g. geographic, health, socioeconomic.

Once the types of data were identified as required, we set out to obtain the data.

Utilized UK Data Services, NWSSP for prescribing data and health maps Wales to obtain GP data this gave us a diverse range of sources on which to obtain data.

Ensured data had appropriate geographical references so that we can appropriately link and utilize the data within the GIS environment (MapInfo).
Demonstrate your understanding of data acquisition

Types of Data Researched



Spatial Data: Geographic data such as maps, shapefiles, or raster data (e.g., satellite images, aerial photography).



Non-Spatial Data: Databases, spreadsheets, or data from sources like APIs that contain information related to the spatial entities but don't have inherent spatial characteristics.



External Data Sources: These can include web services, APIs, or real-time feeds (e.g., weather data, demographic information) that need to be integrated for dynamic updates.

Data Preparation

The spatial data was in a format ready to be loaded and utilized with in the GIS software whereas our prescribing figures data needed preparation before use.

- The data is spread out for each month in separate CSV files, utilizing Python with the Pandas library we can read in these files to create data frames to process the data programmatically.
- Once each of the files has been read in next the data needed to be filtered to our required drug Methadone HCL Mix.
- Then we have our filtered data sets for each month, these need to be combined into a one data frame.
- Once the data frames have been combined then the address data can be added by linking the practice ID between the prescribing data CSV and the GP address CSV.
- Now the final dataset is complete this can be written back to CSV and now it is ready for loading into our GIS software.

Now that our prescribing data has been prepared it was time to consider the other data we had acquired and whether we need to include that.

```
#Read data from CSV into data frame
itemData202301 = pd.read_csv("GPData202301/GPData202301.csv")
itemData202302 = pd.read_csv("GPData202302/GPData202302.csv")
itemData202303 = pd.read_csv("GPData202303/GPData202303.csv")
itemData202304 = pd.read_csv("GPData202304/GPData202304.csv")
itemData202305 = pd.read_csv("GPData202305/GPData202305.csv")
itemData202306 = pd.read_csv("GPData202306/GPData202306.csv")
itemData202307 = pd.read_csv("GPData202307/GPData202307.csv")
itemData202308 = pd.read_csv("GPData202308/GPData202308.csv")
itemData202309 = pd.read_csv("GPData202309/GPData202309.csv")
itemData202310 = pd.read_csv("GPData202310/GPData202310.csv")
itemData202311 = pd.read_csv("GPData202311/GPData202311.csv")
itemData202312 = pd.read_csv("GPData202312/GPData202312.csv")

#Define filter for dataset and then filter original dataframes
filter = 'BNFName.str.contains("Methadone Hcl_Mix")'

#Filter the data in the data frames down to the drugs that we want

filtereditemData202301 = itemData202301.query(filter)
filtereditemData202302 = itemData202302.query(filter)
filtereditemData202303 = itemData202303.query(filter)
filtereditemData202304 = itemData202304.query(filter)
filtereditemData202305 = itemData202305.query(filter)
filtereditemData202306 = itemData202306.query(filter)
filtereditemData202307 = itemData202307.query(filter)
filtereditemData202308 = itemData202308.query(filter)
filtereditemData202309 = itemData202309.query(filter)
filtereditemData202310 = itemData202310.query(filter)
filtereditemData202311 = itemData202311.query(filter)
filtereditemData202312 = itemData202312.query(filter)

#Concatenate the filtered dataframes into one dataframe

frames = (filtereditemData202301,
          filtereditemData202302,
          filtereditemData202303,
          filtereditemData202304,
          filtereditemData202305,
          filtereditemData202306,
          filtereditemData202307,
          filtereditemData202308,
          filtereditemData202309,
          filtereditemData202310,
          filtereditemData202311,
          filtereditemData202312
          )
```

Data Preparation Continued



Now that the prescribing data has been prepared for use within the GIS it was time for us to turn our attention towards our other data we have collected.



The data for the Wales map and the health board boundaries data were able to be used as our geographic references.



We needed to make sure that with the other data sets we had gathered that we had appropriate geographical references so that once it has been loaded into our GIS software that we can geocode the data (e.g. Longitude and Latitude).

The background of the slide is a dense field of 3D-rendered question marks. Most are dark grey and recede into the background, creating a sense of depth. In the center, a single, larger orange question mark stands out prominently. The lighting is dramatic, with highlights on the edges of the question marks.

The End

Any Questions?

A solid, bright orange horizontal bar spans the width of the slide, positioned at the bottom.