

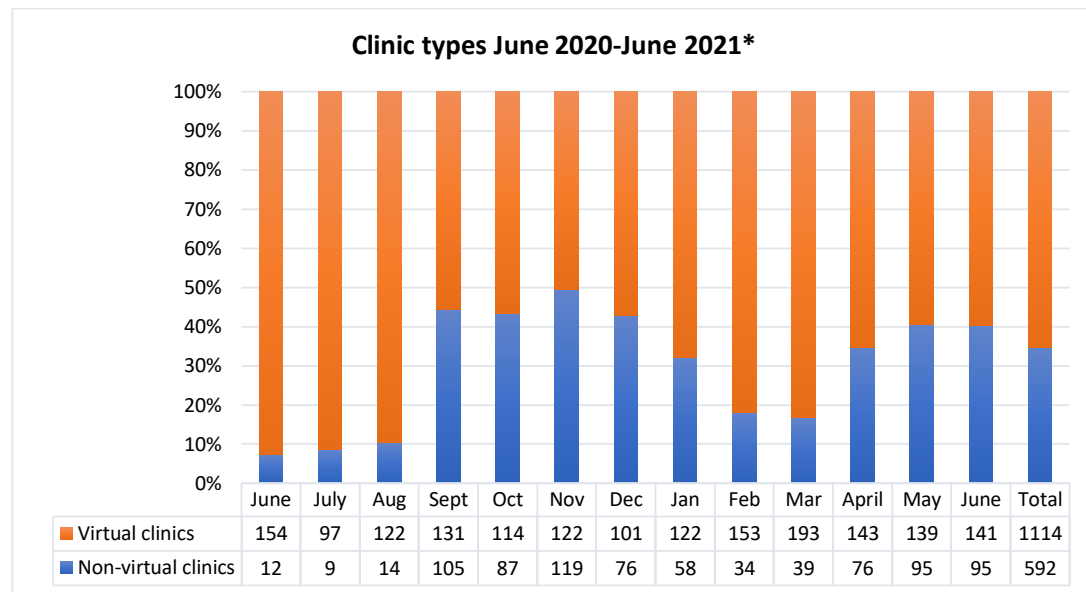
## Supplemental Material

Supplemental Table 1: Number of new neurological consultations

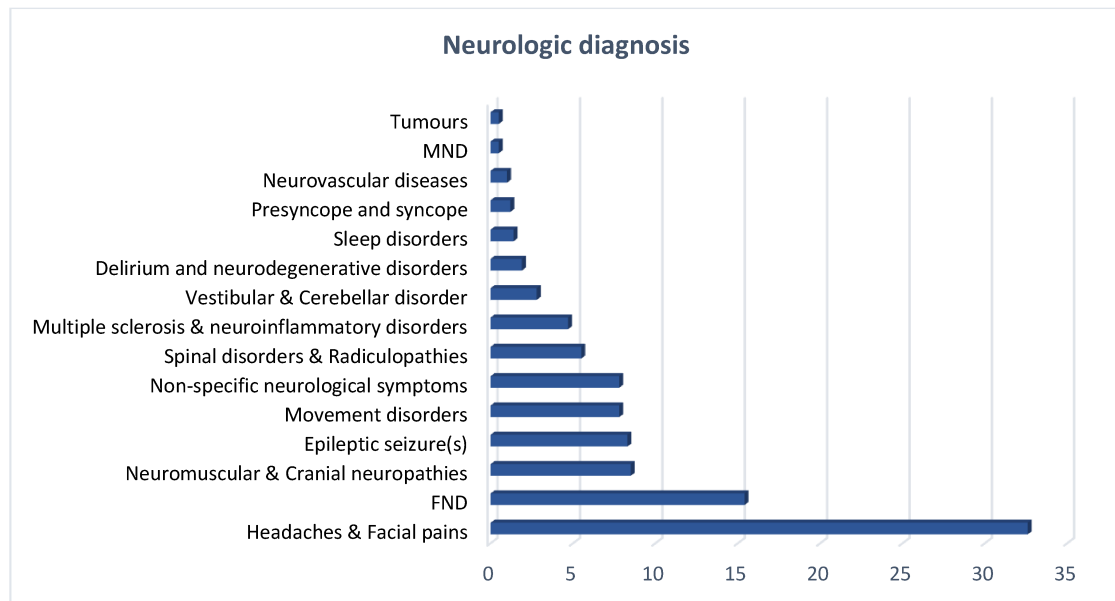
	YEAR 2019	YEAR 2020	Total	P-value
<b>Total Number (%)</b>	<b>1,110 (56.8)</b>	<b>845 (43.2)</b>	<b>1,955</b>	
June <sup>#</sup>	216 (19.5)	166 (19.6)	382 (19.5)	
July <sup>#</sup>	179 (16.1)	106 (12.5)	285 (14.6)	
August	254 (22.1)	136 (16.1)	381 (19.5)	
September	229 (20.6)	236 (27.9)	465 (23.8)	
October	241 (21.7)	201 (23.8)	442 (22.6)	
<b>Clinic Type</b>				
Non-virtual	1109 (99.9)	227 (26.9)		<0.001
Virtual	1 (0.1)	618 (73.1)		
<b>Mean age (±SD)</b>				
(years)	50.7±17.0	49.7±17.1	50.3±17.0	0.176
<b>Gender</b>				
Female	661 (59.6)	488 (57.8)	1,149 (58.8)	0.424
Male	449 (40.4)	357 (42.2)	806 (41.2)	

<sup>#</sup> Patient data were extracted for these two months for further analysis

### Supplemental Figure 1: Proportion of virtual to non-virtual clinics over 13 months (June 2020 – June 2021)



\*Overall, two-thirds (65.3%) were virtual clinics, out of which 252 (22.6%) were telephone consultations

**Supplemental Figure 2: Neurological diagnosis over the recruitment period**

**Supplemental Table 2: Comparing non-virtual (2019) and virtual clinics (2020)**

	<b>Non virtual (N=352)</b>	<b>Virtual (N=225)</b>	<b>RR (95%CI)/P-value</b>
June	191 (54.3)	129 (57.3)	0.469
July	161 (45.7)	96 (42.7)	
<b>Age</b>			
Mean	50.4±17.7	49.6±15.7	0.564
Range	16-94	16-88	
Median (IQR)	50 (37-64)	49 (39-60)	
<b>Age Group</b>			
16-24 years	32 (9.1)	14 (6.2)	0.027
25-39 years	73 (20.7)	46 (20.4)	
40-59 years	125 (35.5)	106 (47.1) <sup>#</sup>	
≥60 years	122 (34.7)	59 (26.2) <sup>#</sup>	
<b>Gender</b>			
Female	228 (64.8)	132 (58.7)	0.140
Male	124 (35.2)	93 (41.3)	
<b>Health Board</b>			
Grampian	340 (96.6)	211 (93.8)	0.112
Others*	12 (3.4)	14 (6.2)	
<b>Referral Source</b>			
GP	298 (84.7)	181 (80.4)	0.412
CATH <sup>a</sup>	52 (14.7)	42 (18.7)	
Other health professionals	2 (0.6)	2 (0.9)	
<b>Time to consultation (days)</b>			
Mean ± SD	102.9 ± 51.9	91.9 ± 70.0	
Median (IQR)	120 (51-136)	114 (11-154)	0.152
Range	0-336	1-223	
<b>Time to consultation (weeks)</b>			
< 1 week	11 (3.2)	38 (16.9)	<0.0001
>1 to 4 weeks	13 (3.8)	45 (20.0)	
>4 weeks to 12 weeks	106 (30.6)	10 (4.4)	
>12 to 24 weeks	198 (57.2)	93 (41.3)	
>24 weeks	18 (5.2)	39 (17.3)	
<b>Referral priority</b>			

Routine	278 (79.0)	161 (71.6)	1.27 (1.02-1.57); 0.042
Urgent	74 (21.0)	64 (28.4)	
<b>Time to diagnosis (days)</b>			
Mean ± SD	12.6 ± 39.5	22.1 ± 57.7	
Median (IQR)	0 (0-0)	0 (0-0)	0.019
Range	0-201	0-287	
<b>Time to diagnosis (weeks)</b>			
< 1 week	309 (87.8)	182 (81.6)	0.069
>1 to 4 weeks	7 (2.0)	5 (2.2)	
>4 weeks to 12 weeks	9 (2.6)	12 (5.4)	
>12 to 24 weeks	16 (4.6)	8 (3.6)	
>24 weeks	11 (3.1)	16 (7.2)	
<b>Number of investigations</b>			
Mean ± SD	1.17 ± 1.16	0.98 ± 0.97	
Median (IQR)	1 (0-2)	1 (0-2)	0.115
Range	0-5	0-4	
<b>Required reassessment</b>			
No	313 (88.9)	171 (76.0)	2.17 (1.49-3.16); <0.001
Yes	39 (11.1)	54 (24.0)	
<b>Required re-investigation</b>			
No	326 (92.6)	193 (88.9)	1.50 (0.88-2.54); 0.133
Yes	26 (7.4)	24 (11.1)	
<b>Treatment offered</b>			
No	181 (51.4)	113 (50.5)	1.02 (0.86-1.2); 0.820
Yes	171 (48.6)	111 (49.5)	
<b>Neurologic diagnosis</b>			
Headaches & facial pains	114 (32.4)	74 (32.9)	0.295
FND	60 (17.1)	29 (12.9)	
Neuromuscular & cranial neuropathies	29 (8.2)	20 (8.9)	
Epileptic seizures	22 (6.5)	26 (11.6)	
Movement disorders	28 (8.0)	17 (7.6)	
Non-specific neurological symptoms	25 (7.1)	20 (8.9)	
Spinal disorders & radiculopathies	23 (6.5)	9 (4.0)	

Multiple sclerosis & neuroinflammatory disorders	18 (5.1)	9 (4.0)
Vestibular & cerebellar disorder	9 (2.6)	7 (3.1)
Delirium & neurodegenerative disorders	8 (2.3)	3 (1.3)
Sleep disorders	4 (1.1)	4 (1.8)
Presyncope & syncope	2 (0.6)	5 (2.2)
Neurovascular diseases	5 (1.4)	1 (0.4)
Motor neuron disease	3 (0.9)	0 (0.0)
Tumours	2 (0.6)	1 (0.4)

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#Significant difference in a post-hoc analysis; \*Fife, Shetland, Orkney, Fort valley, Highland, Lanarkshire & Tayside; <sup>c</sup>Consultant at this Health Board; <sup>β</sup>Six missing in 2019 and one missing in 2019

**Supplemental Table 3: Factors associated with reassessment**

	Required reassessment		Relative risk (RR)	P-value
	No (n=484)	Yes (n=93)		
<b>Clinic type</b>				
Non-virtual (2019)	313 (64.7)	39 (42.4)	2.17 (1.49-3.16)	P<0.001
Virtual	171 (35.3)	53 (57.6)		
<b>Virtual clinic type</b>				
Near-Me	158 (92.4)	49 (90.7)	1.17 (0.54-2.57)	0.696
Telephone	13 (7.6)	5 (9.3)		
<b>Gender</b>				
Male	303 (62.6)	56 (60.9)	0.95 (0.65-1.40)	0.704
Female	181 (37.4)	36 (39.1)		
<b>Age</b>				
Mean ± SD	49.6 ± 17.2	52.7 ± 14.7		0.102
Median (IQR)	49 (37-62)	53 (43-64)		
Range	16 – 94	18 – 82		
<b>Referral priority</b>				
Routine	372 (76.9)	67 (72.0)	1.23 (0.82-1.86)	0.319
Urgent	112 (23.1)	26 (28.0)		
<b>Required re-investigation</b>				
No	472 (97.7)	47 (54.7)	8.61 (6.32-11.74)	<0.001
Yes	11 (2.3)	39 (45.3)		
<b>Treatment offered</b>				
No	252 (52.1)	42 (45.7)	1.24 (0.85-1.81)	0.259
Yes	232 (47.9)	50 (54.3)		
<b>Neurologic Diagnosis*</b>				
<b>Headaches &amp; Facial pains</b>				
No	305 (63.0)	84 (90.3)	0.22 (0.11-0.43)	<0.001
Yes	179 (37.0)	9 (9.7)		
<b>Functional Neurological Disorder</b>				
No	414 (85.5)	74 (79.6)	1.41 (0.90-2.21)	0.145
Yes	70 (14.5)	19 (20.4)		
<b>Neuromuscular &amp; cranial neuropathies</b>				
No	446 (92.8)	82 (88.2)	1.45 (0.83-2.52)	0.208

Yes	38 (7.8)	11 (1.8)		
<b>Epileptic seizures</b>				
No	439 (90.7)	90 (96.8)	0.37 (0.12-1.12)	0.052
Yes	45 (9.3)	3 (3.2)		
<b>Movement disorders</b>				
No	448 (92.6)	84 (90.3)	1.27 (0.68-2.35)	0.461
Yes	36 (7.4)	9 (9.7)		
<b>Non-specific neurological symptoms</b>				
No	451 (93.2)	81 (87.1)	1.75 (1.04-2.96)	0.045
Yes	33 (6.8)	12 (12.9)		
<b>Spinal disorders &amp; radiculopathies</b>				
No	463 (95.7)	82 (88.2)	2.28 (1.36-3.84)	0.004
Yes	21 (4.3)	11 (11.8)		
<b>Multiple sclerosis &amp; neuroinflammatory disorders</b>				
No	446 (96.3)	84 (90.3)	2.18 (1.24-3.85)	0.013
Yes	18 (3.7)	9 (9.7)		
<b>Vestibular &amp; cerebellar disorder</b>				
No	472 (97.5)	89 (95.7)	1.58 (0.66-3.76)	0.327
Yes	12 (2.5)	4 (4.3)		

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\*Other neurologic disorders listed have small sample sizes and not included in the analysis



**Supplemental Table 4: Factors associated with re-investigation**

	Required re-investigation		Relative risk (RR)	P-value
	No (n=519)	Yes (n=50)		
<b>Clinic type</b>				
Non-virtual (2019)	326 (62.8)	26 (52.0)	1.49 (0.88-2.54)	0.133
Virtual	193 (37.2)	24 (48.0)		
<b>Virtual clinic type</b>				
Near-Me	180 (93.3)	20 (83.3)	2.35 (0.91-6.10)	0.088
Telephone	13 (6.7)	4 (16.7)		
<b>Gender</b>				
Female	330 (63.6)	26 (52.0)	0.65 (0.38-1.10)	0.106
Male	189 (36.4)	24 (48.0)		
<b>Age</b>				
Mean ± SD	49.5 ± 17.2	56.5 ± 14.7		
Median (IQR)	49 (36-62)	56 (45-66)		0.006
Range	16 – 94	15 – 82		
<b>Referral priority</b>				
Routine	399 (76.9)	35 (70.0)	1.38 (0.78-2.44)	0.275
Urgent	120 (23.1)	15 (30.0)		
<b>Treatment offered</b>				
No	266 (51.2)	22 (44.0)	1.30 (0.76-2.22)	0.327
Yes	253 (48.8)	28 (56.0)		
<b>Neurologic Diagnosis*</b>				
<b>Headaches &amp; Facial pains</b>				
No	334 (64.4)	47 (94.0)	0.13 (0.04-0.41)	<0.001
Yes	185 (35.6)	3 (6.0)		
<b>Functional neurologic disorder</b>				
No	441 (85.0)	40 (80.0)	1.37 (0.71-2.63)	0.353
Yes	78 (15.0)	10 (20.0)		
<b>Neuromuscular &amp; cranial neuropathies</b>				
No	479 (92.3)	43 (86.0)	1.81 (0.86-3.79)	0.123
Yes	40 (7.7)	7 (14.0)		
<b>Epileptic seizures</b>				
No	472 (90.9)	49 (98.0)	0.22 (0.03-1.57)	0.086

Yes	47 (9.1)	1 (2.0)		
<b>Movement disorders</b>				
No	479 (92.3)	46 (92.0)	1.04 (0.39-2.75)	0.941
Yes	40 (7.7)	4 (8.0)		
<b>Non-specific neurological symptoms</b>				
No	483 (93.1)	43 (86.0)	1.99 (0.95-4.16)	0.071
Yes	36 (9.4)	7 (14.0)		
<b>Spinal disorders &amp; radiculopathies</b>				
No	492 (94.8)	47 (94.0)	1.14 (0.38-3.47)	0.810
Yes	27 (5.2)	3 (6.0)		
<b>Multiple sclerosis &amp; neuroinflammatory disorders</b>				
No	500 (96.3)	42 (84.0)	3.82 (2.00-7.32)	<0.0001
Yes	19 (3.7)	8 (16.0)		
<b>Vestibular &amp; cerebellar disorder</b>				
No	504 (97.1)	49 (98.0)	0.71 (0.10-4.79)	0.716
Yes	15 (2.9)	1 (2.0)		

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\*Other neurologic disorders listed have small sample sizes and not included in the analysis

**Supplemental Table 5: A univariate sub-analysis of factors associated with reassessment for virtual cases (2020) only**

	Required re-assessment			
	No (n=171)	Yes (n=54)	Risk ratio (RR)	P-value
<b>Gender</b>				
Male	101 (59.1)	31 (57.4)	0.95 (0.59-1.52)	0.829
Female	70 (40.9)	23 (42.6)		
<b>Age</b>				
Mean $\pm$ SD	48.3 $\pm$ 15.8	53.8 $\pm$ 14.4		
Median (IQR)	48 (37-60)	54 (46-63)		0.028
Range	16-88	23-82		
<b>Health Board</b>				
Grampian	159 (93.0)	52 (96.3)		0.380
Others	12 (7.0)	2 (3.7)		
<b>Referral priority</b>				
Routine	125 (73.1)	36 (66.7)	1.26 (0.77-2.05)	0.361
Urgent	46 (26.9)	18 (33.3)		
<b>Virtual clinic type</b>				
Near-Me	158 (92.4)	49 (90.7)	1.17 (0.54-2.57)	0.696
Telephone	13 (7.6)	5 (9.3)		
<b>Required re-investigation</b>				
No	167 (98.2)	26 (55.3)	6.50 (4.41-9.58)	<0.001
Yes	3 (1.8)	21 (44.7)		
<b>Treatment offered</b>				
No	87 (50.9)	26 (49.1)	1.05 (0.66-1.69)	0.817
Yes	84 (49.1)	27 (50.9)		
<b>Neurologic Diagnosis</b>				
Headaches & facial pains	69 (40.4)	5 (9.3)	0.21 (0.09-0.50)	<0.001

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Functional neurological diagnosis	19 (11.1)	10 (18.5)	1.54 (0.87-2.70)	0.157
Neuromuscular & cranial neuropathies	12 (7.0)	8 (14.8)	1.78 (0.98-3.23)	0.079
Epileptic seizures	23 (13.5)	3 (5.6)	0.45 (0.15-1.34)	0.114
Movement disorders	9 (5.3)	8 (14.8)	2.13 (1.21-3.74)	0.021
Non-specific neurological symptoms	11 (6.4)	9 (16.7)	2.05 (1.18-3.55)	0.021
Spinal disorders & radiculopathies	5 (2.9)	4 (7.4)	1.92 (0.89-4.15)	0.143
Multiple sclerosis & neuroinflammatory disorders	6 (3.5)	3 (5.6)	1.41 (0.54-3.67)	0.503

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