

TECHNOLOGY ENABLED CARE

**tec**

**CYMRU**

**NHS Wales  
Video Consulting Service**

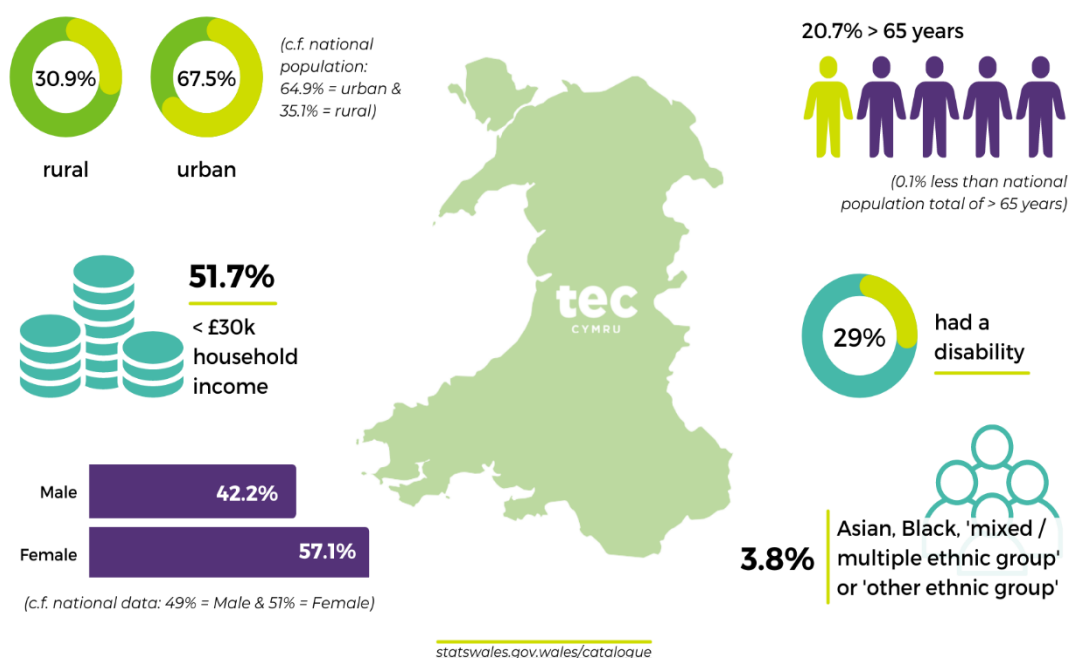
Comparing TEC Cymru Phase 2a Data with  
National Population Data

## Summary

In the Phase 2a evaluation report, sociodemographic, economic and geographic measures from patients suggested that, regardless of age, gender, ethnicity, household income, disability or place (rural vs. urban) video consulting was used and valued equally on an all-Wales basis.

See full Phase 2a report [here](#).

### Infographic 1: Phase 2a All-Wales Patient Data



The purpose of this current report is to present an in-depth analysis of the sociodemographic, economic and geographic measures from the Phase 2a data, with particular emphasis on individual local authorities in Wales, to deep dive further, and identify any gaps or areas of under or over representation of VC uptake or value when compared to the national population data.

## Aims & Methods

This report is part of the [Phase 2a data](#) capture interval, which consisted of a mixed methodology approach, and includes 'live' end of VC surveys, semi-structured interviews and follow-up focus groups. The phase 2a survey data collection went live on 1<sup>st</sup> September 2020 and closed 28<sup>th</sup> February 2021. The sampling approach used during Phase 2a was opportunity sampling (due to access of the intervention and ability to attach a survey, and access to clinicians contact information to invite for an interview). Snowballing sampling was also explored, such as the use of social media platforms (@teccymru Twitter) and through personal or professional networks to recruit for additional retrospective surveys, and recruitment of interviews.

For the data discussed in this report, a total of 14,384 patient responses were extracted for analysis.

### Measures

Due to the free-choice nature of the survey, not all patients answered each question and thus response numbers varied. Although further discussed below, the number of patients in each demographic group are summarised.

**Age:** There were 2318 patients Under 12, 770 patients were 13-17, 780 were 18-24, 2983 were 25-44, 4115 were 45-64, 2500 were 65-80, and 362 were Over 80 (Table 1). This means that a total of 13,848 patients gave their age.

**Gender:** There were 4738 males, 6423 females, 39 non-binary patients, 29 responded prefer not to say, and 10 stated other (Table 2). There was a total of 11,239 responses in total.

**Ethnicity:** There were 3145 patients from White ethnic backgrounds, 46 Mixed/Multiple Ethnicities, 49 Asian/Asian British, 13 Black/Black British, and 14

Other Ethnic Groups (Table 3). Only 3267 patients provided a response to this question.

*Income:* The number of patients in each income group is displayed in Table 4.

### **Design of Survey**

Patients were asked a series of questions to capture their experience with video consultations for their healthcare appointment. Questions captured patients' ratings of their video call (Excellent, Very Good, Good, Okay, or Poor) and whether or not face-to-face was prevented (Yes, No, or Unsure). They were also asked about their previous use of VC and how many times they had used it before, with the response options "Only today", "Once before today", "Twice before today", and "Three times or more". To capture whether or not they would use VC again in the future, respondents stated "Yes" (they would use it again), "No" (they would not), or "Maybe" (if they were uncertain). Additionally, the types of appointments that were being conducted virtually were captured, with patients stating one of the following types: first appointments, final appointments, reviews, therapy/treatments, or advice. Device usage was also reported, with patients stating the type and brand of device they used to complete their video appointment. These brands were groups, depending on device type, and patients were categorised as either a phone user, tablet user, laptop user, or multiple device user if they stated more than one type. Finally, patients were also given the Howie Patient Enablement Instrument [1] to measure outcomes of the appointment, where patients rate a series of items on a scale ranging from 1 ("Same or Less") to 3 ("Much More"). Responses across the questions were added for each patient, and a total score was given (max score = 12).

## Analysis

The analysis was carried out using both excel and SPSS for descriptive statistics and then exported for its main analysis and tests of significance (this full dataset is reported in the [Quantitative Section](#) of the Phase 2a report). Other data can be found in other sections of the Phase 2a report (this is regularly updated as new data becomes available). For this paper, TEC Cymru Phase 2a data was extracted and compared with national population data captured by the Welsh Government. There are some inconsistencies across TEC Cymru and Welsh Government measures, e.g., age range, however efforts were made to match this as close as possible.

Data was explored for each demographic groups (age, gender, ethnicity, income, and local authority), and compared with Welsh Government National Statistics to see how the current findings of population represent the national average. The findings from the current research, for each demographic group, are demonstrated in the following sections. That is, a breakdown of each demographic groups' experiences with VC in healthcare. Data is presented in terms of percentages and frequencies.

## Key Findings/Pointers

### Welsh Government and TEC Cymru Data Comparisons:

- There are inconsistencies between the percentage of patients aged 0-17 years (0-15 years according to WG) 18-64 years (16-64 years according to WG) in the current TEC Cymru data compared with WG national averages.
- There are more Females than Males captured by the current TEC Cymru data, and although Females are overrepresented in certain areas of Wales, Males are shown to be overrepresented in some.
- BAME populations are slightly underrepresented in the TEC Cymru data, in that some regions of Wales, no data from BAME populations was collected. However, small numbers in BAME groups are also evident in WG data.

- Income data is similar to that of WG averages, although comparisons are difficult due to the nature of the data collected (categorical/income groups versus median).
- There are some local authorities that are either under- or over-represented using VC when compared to national population data.

### Findings from Phase 2a Data:

- **Age:** All age groups rated VC quality similarly, although ages 13-17 years were the least positive. This group of patients (or their parents completing on their behalf) were also more uncertain on whether they would use VC again in the future. Furthermore, younger patients tended to use laptops and phones to conduct their VC, whereas older patients used laptops and tablets.
- **Gender:** There were no differences between males and females for quality ratings given, nor for the prevention of face-to-face. The most common types of appointments conducted using VC for males were reviews, and therapy/treatments for females.
- **Ethnicity:** There were very small numbers of responses from BAME groups, making comparisons difficult, however, this is consistent with WG data too, as BAME residents are a significantly smaller group in Wales compared to White residents.
- **Income:** There were no obvious differences that emerged from the findings regarding income groups. VC quality ratings were positive, as well as the prevention of face-to-face. The proportion of patients that would not use VC again in the future ranged only from 0 to 2.3% (£30,000-39,999; although there were only five respondents).

## Comparing TEC Cymru's Video Consultation User Data with the National Population of Wales (Welsh Government Data).

**Age:** As displayed in Table 1, most of the video consultation (VC) users in Wales are between the ages of 25 and 44, and 45 and 54. There was, however, a large number of respondents who were over the age of 65 (20.7%), which suggests that older individuals are common users of VC.

*Table 1. The number and percentage of respondents in each age group.*

	Number (Freq)	Percentage (%)
Under 12	2318	16.7
13-17	790	5.7
<b>0-17</b>	<b>3108</b>	<b>22.4</b>
18-24	780	5.6
25-44	2983	21.5
45-64	4115	29.7
<b>18-64</b>	<b>7878</b>	<b>56.9</b>
65-80	2500	18.1
Over 80	362	2.6
<b>Over 65</b>	<b>2862</b>	<b>20.7</b>
Total Responses	13848	

In comparison to Welsh Government (WG) data (Mid-Year Population Estimates, Office for National Statistics, 2019), the TEC Cymru data demonstrates that 22.4% of users are aged 0 to 17, whereas the national population estimates that 17.9% is between the ages of 0 and 15. Furthermore, 61.1% of the population are estimated to be between 16 and 64, and the current TEC Cymru data suggests 56.9% of VC users are aged 18 to 64, suggesting an underrepresentation of these ages (by 4.5% and 4.2%). Additionally, 21% of the national population are estimated to be over the age of 65, and the TEC Cymru data represents a similar proportion (20.7%).

It is important to note that the current TEC Cymru data collected categorical responses by asking respondents to state if they were Under 12, 13-17, 18-24, 25-44, 45-64, 65-80, or over 80. WG data simply states the number of people who are 0-15, 16-64, and 65 plus. Thus, to compare the data, under 12 and 13-17 were combined to make 0-17; 18-24, 25-44, and 45-64 became 18-64; and 65-80 and 80 plus were 65 plus. The inability to identify individuals who were 15-18 could explain the discrepancy of 5% between age groups 0-15 (WG) & 0-17 (TEC), and 16-64 (WG) & 18-64 (TEC).

**Gender:** VC users were asked to state their gender, with the options Male, Female, Non-Binary, Prefer Not to Say (PNTS), and Other. In the TEC Cymru data, 57.1% were Female and 42.2% were Male. There were smaller numbers of users who selected Non-binary, PNTS, or Other. This is displayed in Table 2.

*Table 2. The number and percentage of respondents of each gender.*

	Number (Freq)	Percentage (%)
Male	4738	42.2
Female	6423	57.1
Non-Binary	39	0.3
PNTS	29	0.3
Other	10	0.1
Total Responses	11239	

From WG figures (Mid-Year Population Estimates, Office for National Statistics, 2019), it is estimated that 49.3% of the population are Males, and 50.7% are Females. Compared with TEC Cymru VC users, it seems that there is a difference between the data and the population average, in that there are more Females (57.1%) than Males (42.2%), which cannot be accounted for by those who stated Non-Binary, PNTS, or Other (total of 0.7%).



**Ethnicity:** The data regarding VC users suggests that 96.2% are White, and 4.0% are Black, Asian, and Minority Ethnicities (BAME). It seems that the current TEC Cymru findings are slightly underrepresenting those from BAME populations by 1.4%, which is particularly evident for Asian / Asian British ethnicities (outlined in red below) (Annual Population Survey, Office for National Statistics, 2009). These figures are displayed in Table 3.

*Table 3. The number and percentage of respondents belonging to each ethnic group, according to the current TEC Cymru data (TEC) and Welsh Government (WG) estimates. Blue and Red represent a discrepancy of more than 1% between TEC and WG, and green demonstrates figures within 1%.*

	TEC Cymru		WG	
	Number (Freq)	Percentage (%)	Number (Freq)	Percentage (%)
White	3145	96.2	2941800	94.8%
Mixed / Multiple	46	1.6	26600	0.9%
Asian / Asian British	49	1.5	74500	2.4%
Black / Black British	13	0.4	29600	1.0%
Other Ethnic Group	14	0.5	29200	0.9%
Total	3267		3102900	

**Income:** In terms of Income, the majority of TEC Cymru VC users have an income of £30,000 or less (51.7%), with the most having less than £15,000 (22.0%) (Table 4). WG (Regional Accounts, Office for National Statistics, 2019) suggest that residents of Wales have a mean income of £17,205.91 (pound per head), a similar finding to the current data. However, they cannot be fully compared due to the differences in the types of data collected (categorical for the current data, average income for WG).

Table 4. The number and percentage of patients in each income group according to the TEC Cymru data.

	Number (Freq)	Percentage (%)
Less than 15,000	431	22
15,000-19,999	227	11.6
20,000-29,999	355	18.1
30,000-39,999	260	13.2
40,000-49,999	222	11.3
50,000-59,999	164	8.4
60,000-69,999	99	5
70,000-99,999	142	7.3
100,000-149,999	46	2.3
More than 150,000	16	0.8
Total Responses	1963	

**Local Authority:** TEC Cymru VC users were common in the more populated areas of Wales, such as Cardiff and Swansea. However, there were some inconsistencies between the current data and the national population, such as over-representing some areas of Wales (e.g., Cardiff, Swansea, Neath Port Talbot, Pembrokeshire) and underrepresenting others (e.g., Isle of Anglesey, Conwy, Gwynedd, Wrexham). These figures are displayed in Table 5 below.

Table 5. The percentage and frequency of VC users (TEC) and the national population (WG; Mid-Year Population Estimates, Office for National Statistics, 2019) living in each local authority in Wales. Note: Red represents figures that are 1% or more below the national average, blue 1% or more greater than the national average, and green 1% within the national average.

	TEC		WG	
	Number (Freq)	Percentage (%)	Number (Freq)	Percentage (%)
Blaenau Gwent	53	1.9	69862	2.2
Bridgend	90	3.2	147049	4.7
Caerphilly	162	5.7	181075	5.7
Cardiff	374	13.2	366903	11.6
Carmarthenshire	180	6.3	188771	6.0
Ceredigion	84	3	72695	2.3
Swansea	392	13.8	246993	7.8
Conwy	38	1.3	117203	3.7
Denbighshire	40	1.4	95696	3.0
Flintshire	64	2.3	156100	5.0
Gwynedd	49	1.7	124560	4.0
Isle of Anglesey	23	0.8	70043	2.2
Merthyr Tydfil	29	1	60326	1.9
Monmouthshire	145	5.1	94590	3.0
Neath Port Talbot	181	6.4	143315	4.5
Newport	151	5.3	154676	4.9
Pembrokeshire	177	6.2	125818	4.0
Powys	166	5.8	132435	4.2
Rhondda CT	161	5.7	241264	7.7
Glamorgan	138	4.9	133587	4.2
Torfaen	73	2.6	93961	3.0
Wrexham	69	2.4	135957	4.3
Total Responses	2839		3152879	

## Breakdown of the Population by Local Authority

### Gender by Local Authority

Figures 1 to 4 below demonstrate the percentage of Males and Females captured within the current TEC Cymru data, and how these compare with WG data (Mid-Year Population Estimates, Office for National Statistics, 2019).

Note: a small percentage of people (0.7%) who stated non-binary, prefer not to say, and other were excluded as WG did not have data on these individuals.

As stated in the section above, there seems to be a discrepancy between the number of Females and Males when compared with that of the national average, specifically that there are more Females. This is also supported and reflected when numbers are looked at in the individual regions, Females are overrepresented by the data for the following local authorities:

- Blaenau Gwent, Caerphilly, Cardiff, Carmarthenshire, Ceredigion, Swansea, Flintshire, Gwynedd, Neath Port Talbot, Newport, Pembrokeshire, Powys, Rhondda Cynon Taf, Glamorgan, Torfaen, and Wrexham.

On the other hand, the evidence suggests that Males are overrepresented in Bridgend, Anglesey, and Merthyr Tydfil, whereby there are larger numbers of Males in the data than Females. The percentage of Males and Females in the areas of Conwy and Denbighshire are close to the national population.

Figure 1 (top) and Figure 2 (bottom) display the percentage of Males in each Local Authority in the current TEC Cymru data (TEC) and Welsh Government's estimates of the national population (WG).

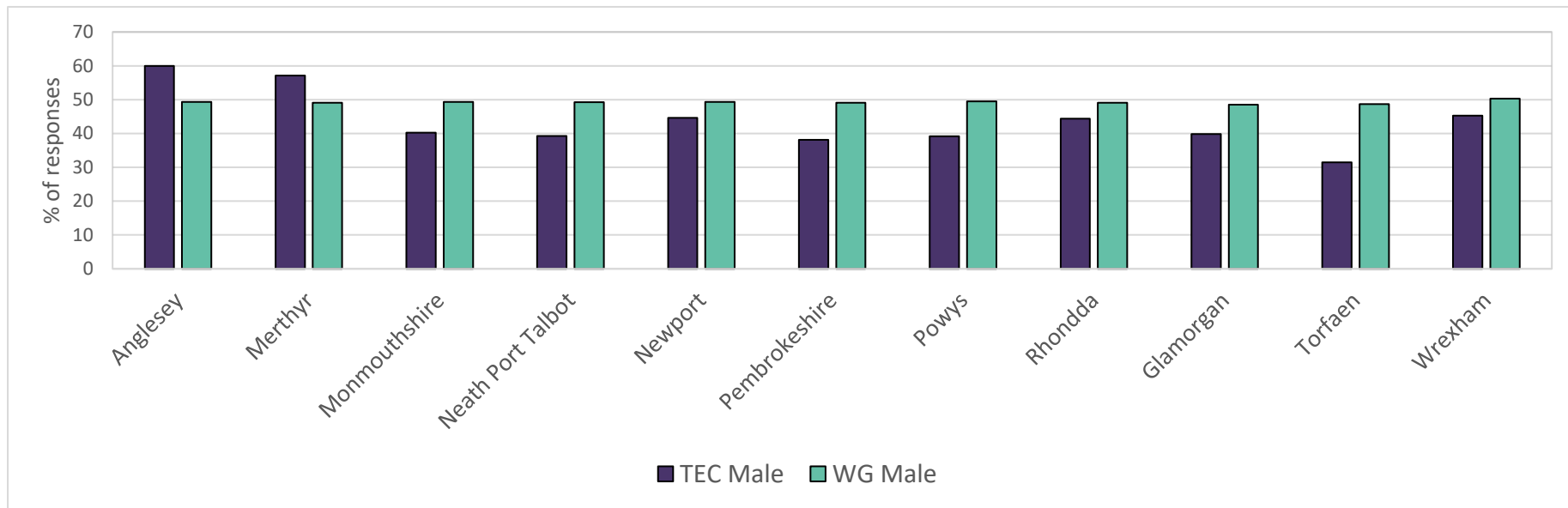
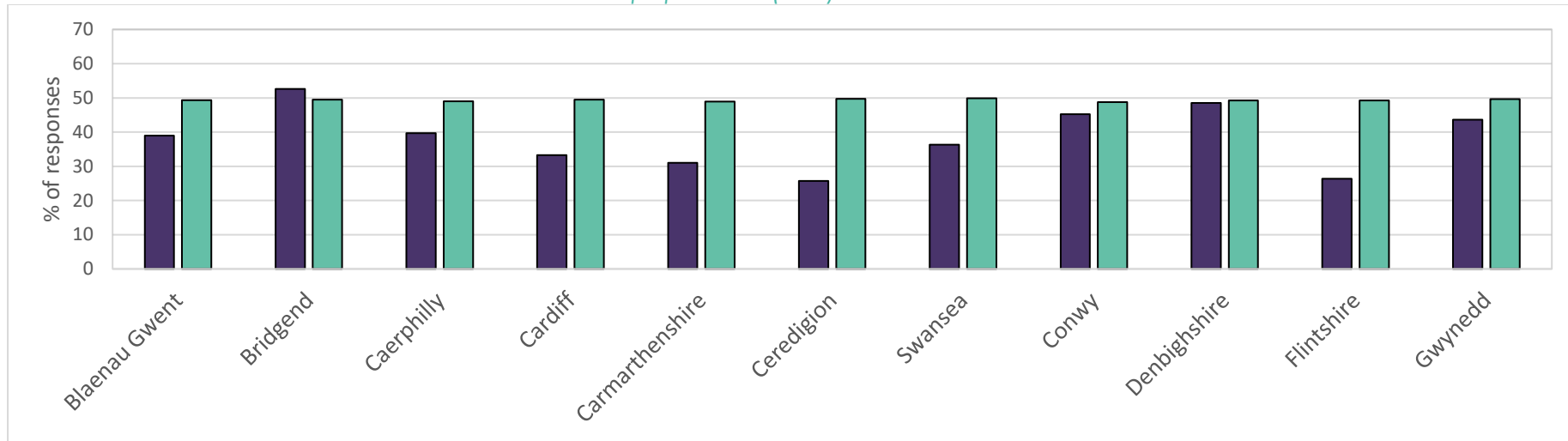
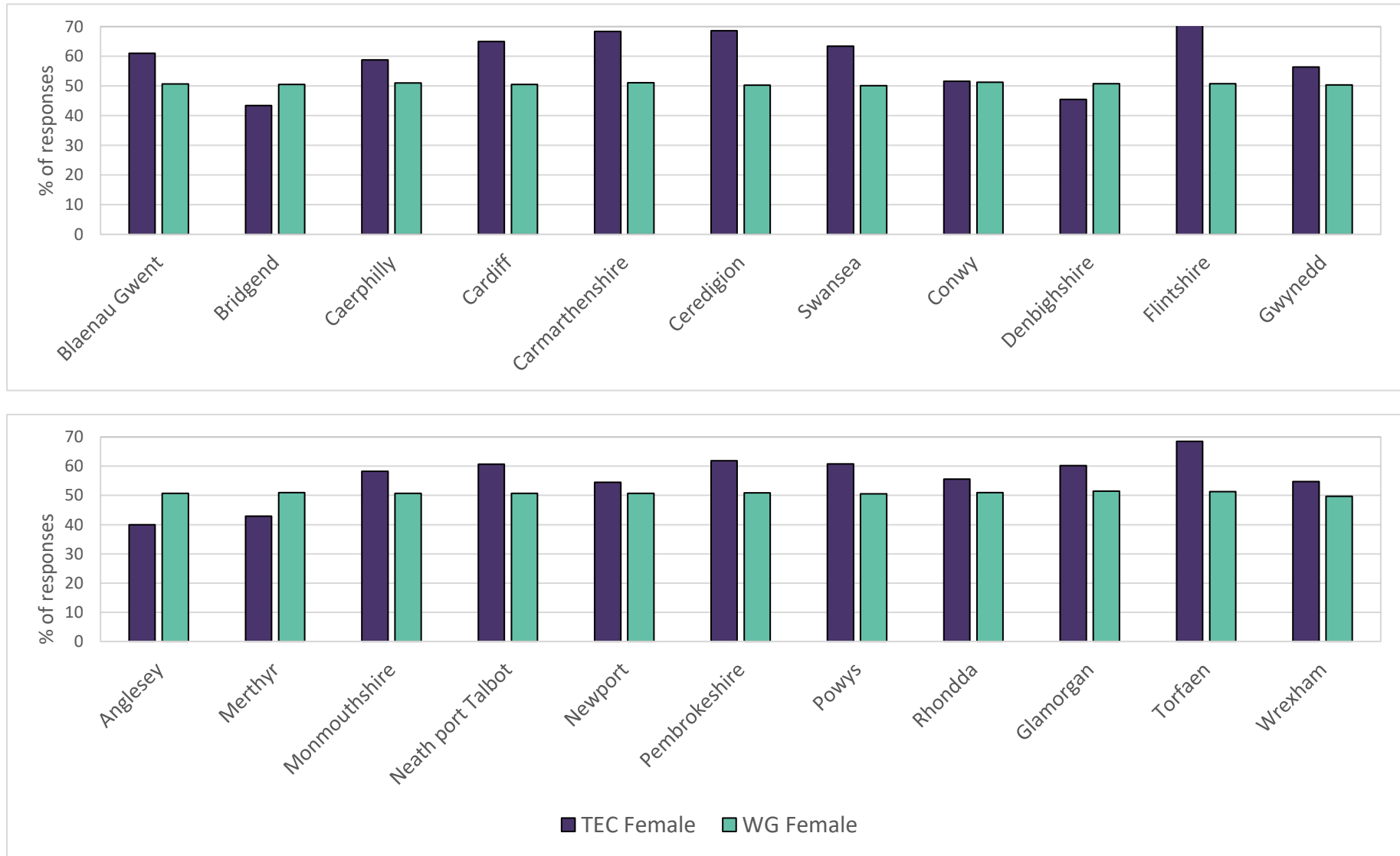


Figure 3 (top) and Figure 4 (bottom) display the percentage of Females in each Local Authority in the current TEC Cymru data (TEC) and Welsh Government's estimates of the national population (WG).



### **Age by Local Authority:**

To further explore the population, age was also analysed for each local authority and compared with the national averages (Mid-Year Population Estimates, Office for National Statistics, 2019). The comparisons are displayed in Figures 5 to 10.

**0 to 15/17 Years:** Due to the difference in category cut-offs (i.e., aged 15 for WG and 17 for TEC Cymru), it is difficult to say whether this age category is overrepresented or underrepresented by the current TEC Cymru data where the percentages are similar. However, the local authorities that were evidenced to have the largest differences (10% or more) were:

- Conwy
- Carmarthenshire
- Denbighshire
- Monmouthshire
- Newport
- Rhondda Cynon Taf
- And Torfaen.

**16/18 to 64 Years:** Once again, the cut-off differences create difficulties in identifying which regions of Wales are over or underrepresented by the data, when compared with WG. It seems that the majority of regions had a lower percentage of people compared with the national average. This was particularly evident for, where differences were greater than 10%: Bridgend, Carmarthenshire, Ceredigion, Merthyr Tydfil, Monmouthshire, Newport, Torfaen, and Wrexham (Carmarthenshire, Anglesey, and Ceredigion represent an overrepresentation of 10% or more, the remainder are underrepresented)

**Over 65 Years:** The regions that had a difference of more than 10% less or greater than WG estimates were: Ceredigion, Conwy, Denbighshire, Flintshire, and Anglesey

All regions above were underrepresented by the current TEC Cymru data, except for Flintshire, which was overrepresented.

Figure 5 (top) and Figure 6 (bottom) display the percentage of people aged 0-17 (TEC) in the current TEC Cymru data and 0-15 (WG) according to the WG's population estimates in each Local Authority

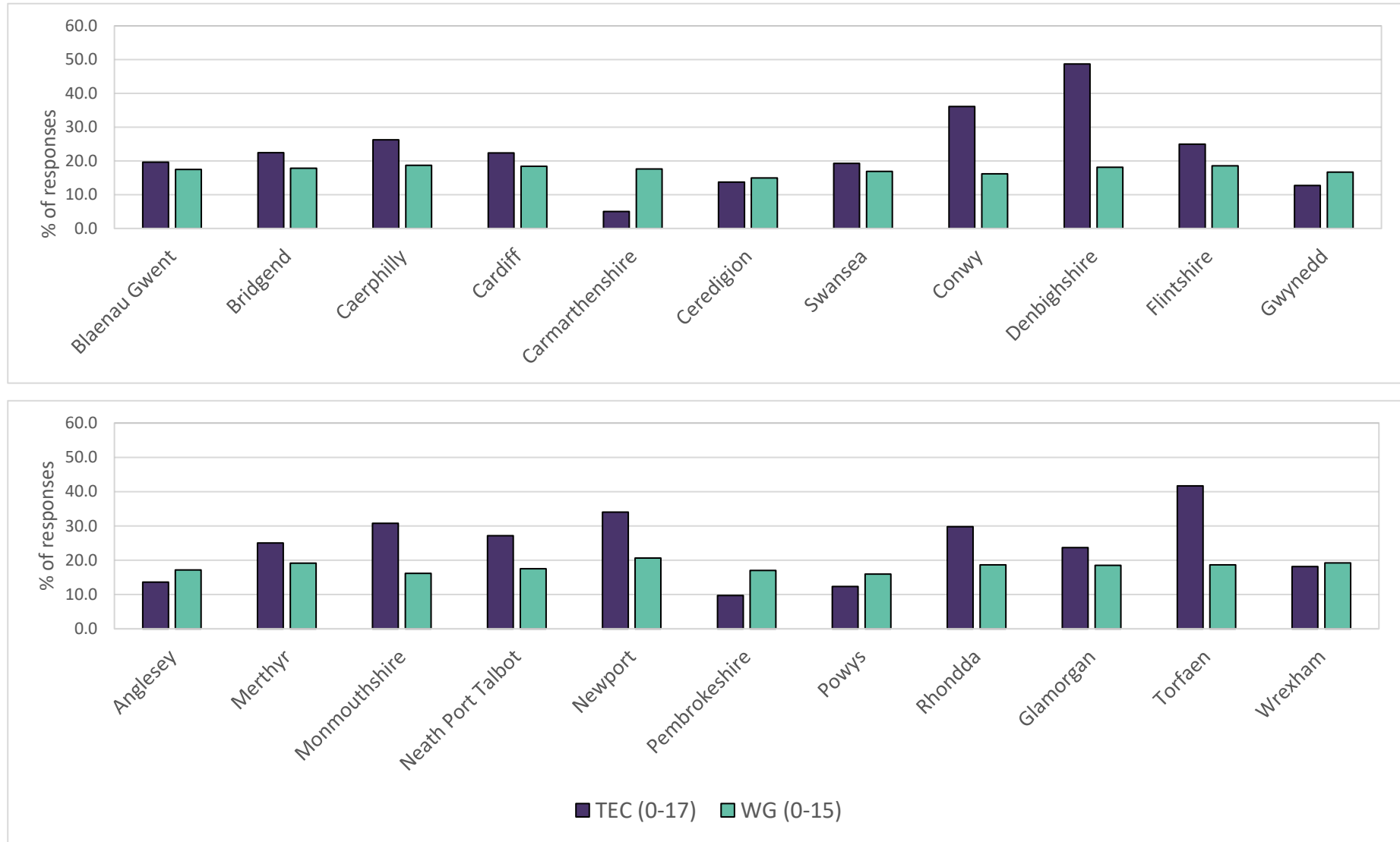




Figure 7 (top) and Figure 8 (bottom) display the percentage of people aged 18-64 (TEC) in the current TEC Cymru data and 16-64 (WG) according to the WG's population estimates in each Local Authority.

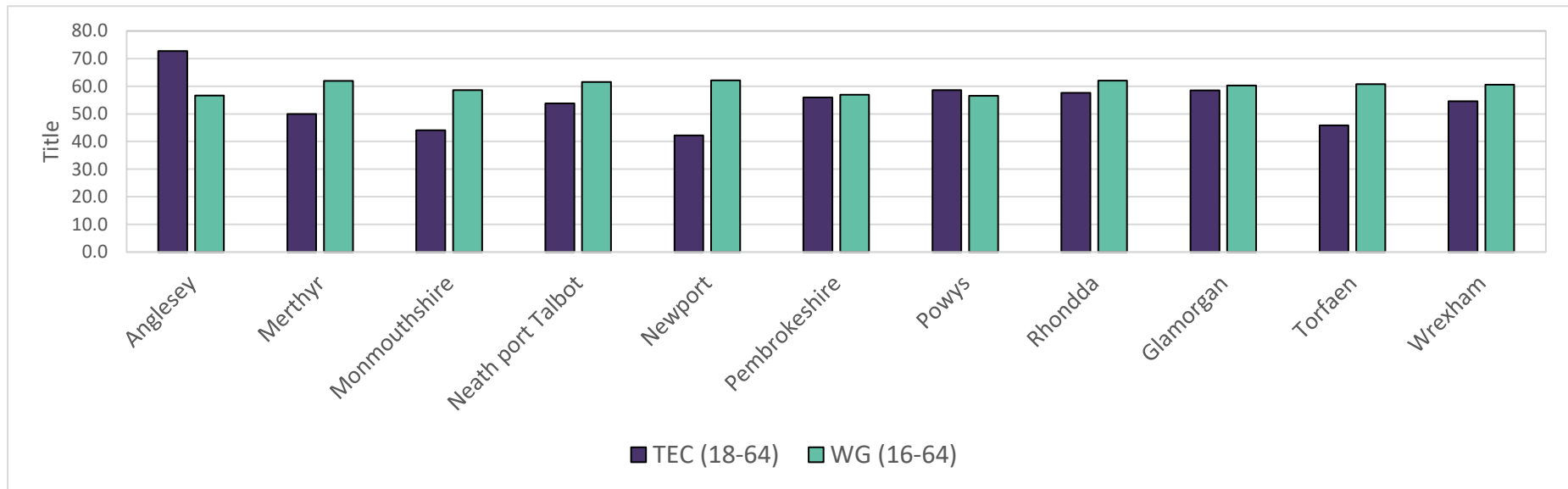
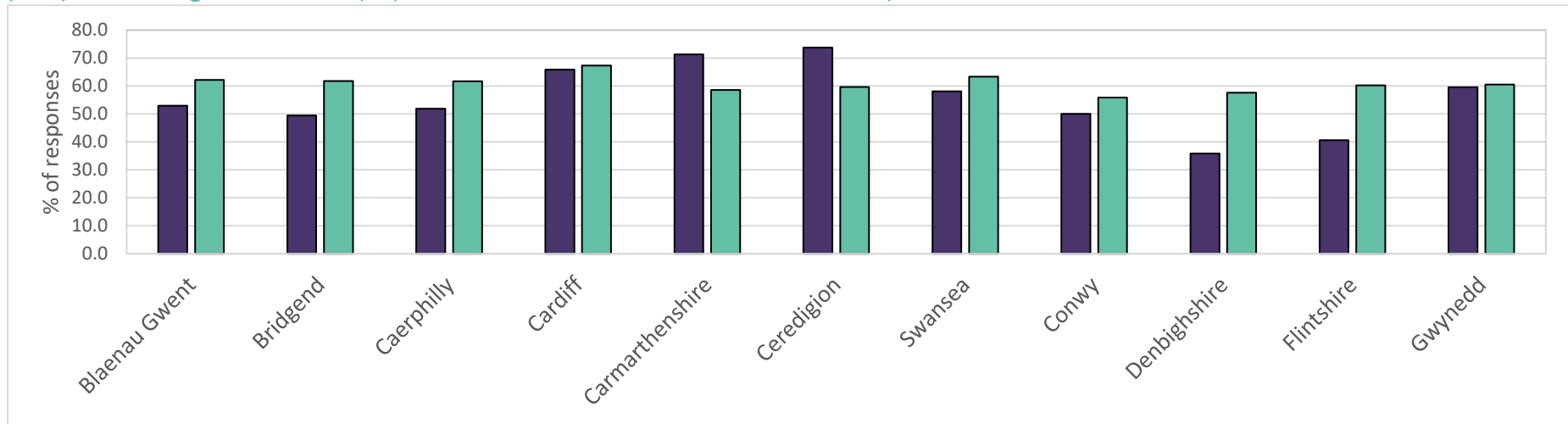
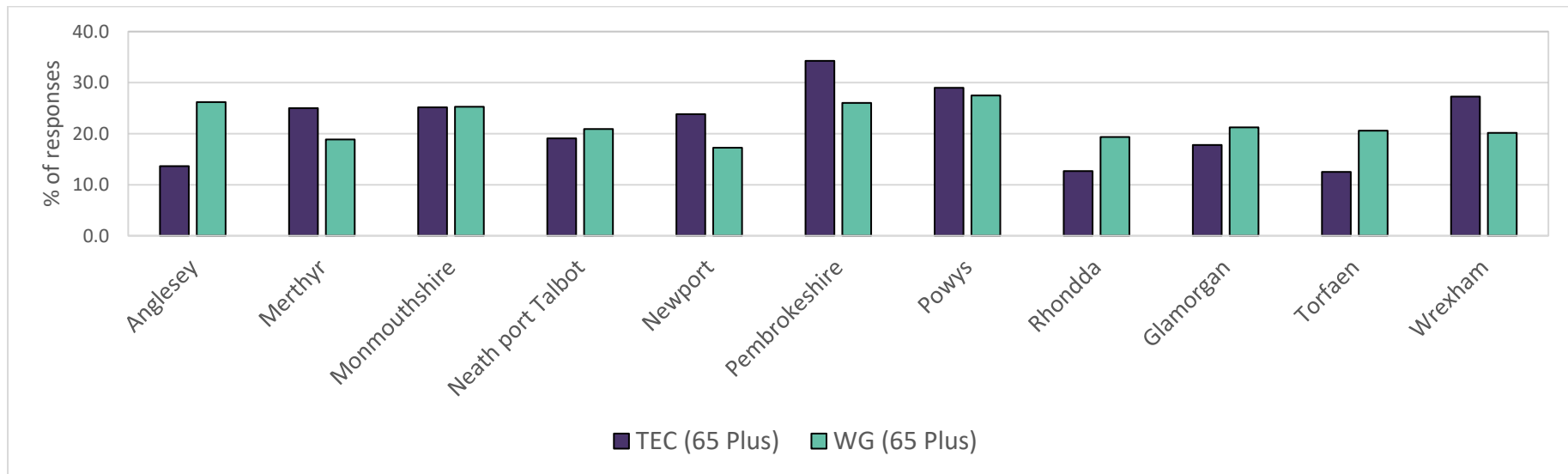
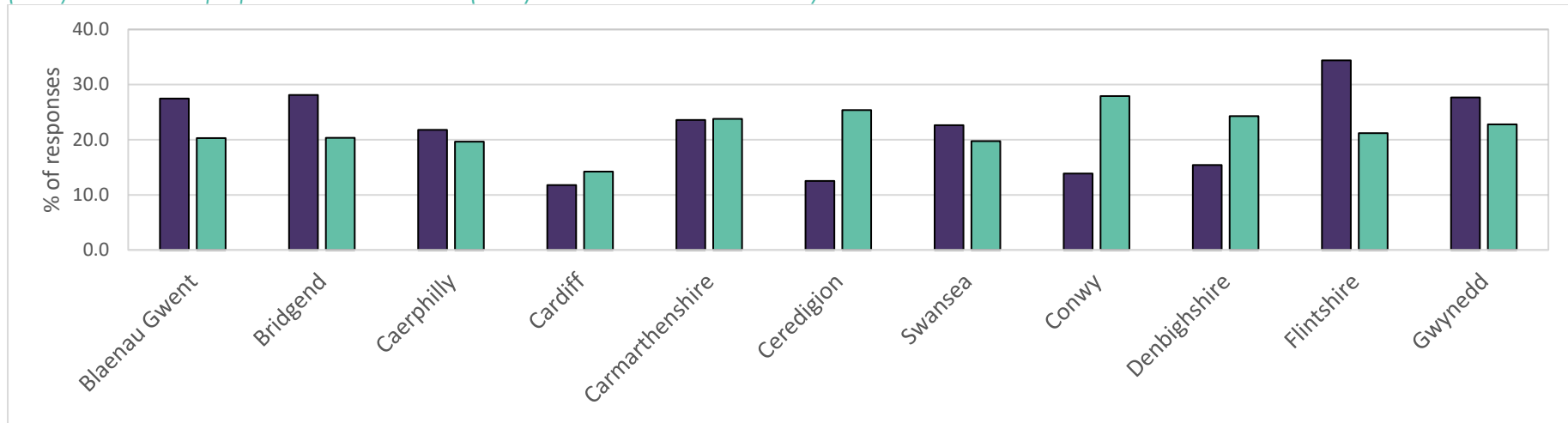


Figure 9 (top) and Figure 10 (bottom) display the percentage of people aged 65 and over according to the current TEC Cymru data (TEC) and WG's population estimates (WG) in each Local Authority.



### **Ethnicity by Local Authority:**

Ethnicity was investigated for each local authority to explore the representation of BAME groups in the current TEC Cymru data when compared with WG population averages (Knowledge and Analytical Services, Welsh Government, 2009). Highlighted (yellow) in Table 6 below, there were certain regions in which no data was captured from BAME groups. This has implications as it suggests the data does not fully represent all regions across Wales, and thus does not represent the general population, specifically when considering ethnicity.

Table 6. The percentage of individuals in each region belonging to the different ethnic groups, according to national population estimates (WG) and the current TEC Cymru data (TEC). Figures highlighted in yellow demonstrate the regions in which there were no responses from specific ethnic groups in the current TEC Cymru findings.

	White		Mixed / Multiple		Asian / Asian British		Black / Black British		Other Ethnic Group	
	WG	TEC	WG	TEC	WG	TEC	WG	TEC	WG	TEC
Anglesey	97.7	100	0.6	0	0.9	0	0.3	0	0.4	0
Blaenau Gwent	98.0	100	0.6	0	0.7	0	0.4	0	0.3	0
Bridgend	96.9	98.6	0.8	1.4	1.2	0	0.4	0	0.7	0
Caerphilly	97.6	98.4	0.8	0.8	0.9	0.8	0.3	0	0.4	0
Cardiff	88.8	88.5	2.1	3.9	5.6	5	1.7	1.4	1.8	1.5
Carmarthenshire	97.2	96	0.7	0.7	1.0	2	0.5	0	0.7	1.4
Ceredigion	96.1	92.3	0.9	4.6	1.8	1.5	0.5	1.5	0.7	0
Conwy	96.9	100	0.7	0	1.3	0	0.5	0	0.5	0
Denbighshire	96.3	100	0.8	0	1.8	0	0.5	0	0.4	0
Flintshire	98.0	100	0.7	0	0.7	0	0.2	0	0.4	0
Gwynedd	96.9	97.4	0.8	0	1.3	0	0.4	0	0.5	2.6
Merthyr Tydfil	97.1	100	0.5	0	0.9	0	0.2	0	1.1	0
Monmouthshire	96.7	97.6	0.9	0.8	1.1	0	0.6	0	0.6	0.8
Neath Port Talbot	97.5	97.7	0.7	1.5	0.9	0	0.4	0	0.4	0.7
Newport	93.8	90.9	1.5	1.8	3.1	3.6	0.9	2.7	0.7	0
Pembrokeshire	96.6	98.6	0.8	0	1.4	0.7	0.9	0	0.6	0.7
Powys	97.2	97.1	0.7	0.7	1.1	1.4	0.7	0	0.5	0.7
Rhondda Cynon Taf	97.4	98	0.7	1.9	1.0	0	0.3	0	0.6	0
Swansea	95.2	96.6	1.0	1.2	1.9	0.9	0.6	0.9	1.2	0.3
The Vale of Glamorgan	95.2	100	1.4	0	1.8	0	0.6	0	1.0	0
Torfaen	97.8	98.1	0.7	1.9	0.8	0	0.3	0	0.3	0
Wrexham	97.4	98.1	0.8	1.9	0.9	0	0.3	0	0.5	0

### **Disability by Local Authority**

Overall, of those who gave a response to the question regarding disability status, 29.37% of respondents had a disability.

There were very small numbers of responses in each local authority, as only those of working age were considered, so that comparisons with WG were possible, as well as including only those who gave a response to this question (those who left it blank were excluded). Responses ranged from as low as 1 respondent in Denbighshire and Merthyr Tydfil to 62 respondents in Cardiff. These small numbers make it difficult to compare to WG figures, as the low sample sizes create skewed percentages of disabilities across Wales. For instance, there were only 5 responses from the Isle of Anglesey, and 3 of these stated they had a disability. This means that 60% of patients in Anglesey had a disability, which is not an accurate representation of this region. The current TEC Cymru figures compared with WG (Annual Population Survey, Office for National Statistics, 2013) per local area are displayed in Table 7.

Table 7. The percentage and frequency of patients of working age (18-64) that have a disability per region in Wales in the current TEC Cymru data (TEC) compared with WG. TEC figures do not include those who did not provide a response to the question.

	TEC			WG		
	Percentage	Frequency	Total Responses	Percentage	Frequency	Total Responses
Anglesey	60.0	3	5	20.4	7900	38900
Blaenau Gwent	66.7	4	6	25.4	10700	42100
Bridgend	12.5	1	8	26.1	21500	82300
Caerphilly	21.1	4	19	26	28000	107400
Cardiff	24.2	15	62	19.7	45000	227900
Carmarthenshire	15.0	3	20	23	24000	104700
Ceredigion	30.0	3	10	21.1	9600	45600
Conwy	25.0	1	4	20.3	12600	62200
Denbighshire	100.0	1	1	24.7	13000	52500
Flintshire	44.4	4	9	17.3	15600	90300
Gwynedd	25.0	1	4	17.5	12300	70200
Merthyr Tydfil	100.0	1	1	27.5	9800	35700
Monmouthshire	33.3	2	6	21.4	11000	51400
Neath Port Talbot	35.3	6	17	27.1	22600	83400
Newport	57.1	4	7	23.7	20800	87800
Pembrokeshire	22.2	4	18	20.4	13800	67700
Powys	7.7	1	13	23.4	17100	72800
Rhondda Cynon Taf	14.3	3	21	25.6	36300	141800
Swansea	35.1	13	37	23.7	34600	145600
The Vale of Glamorgan	20.0	3	15	22.8	16700	73400
Torfaen	30.8	4	13	23.3	12600	54100
Wrexham	57.1	4	7	17.6	14300	81000

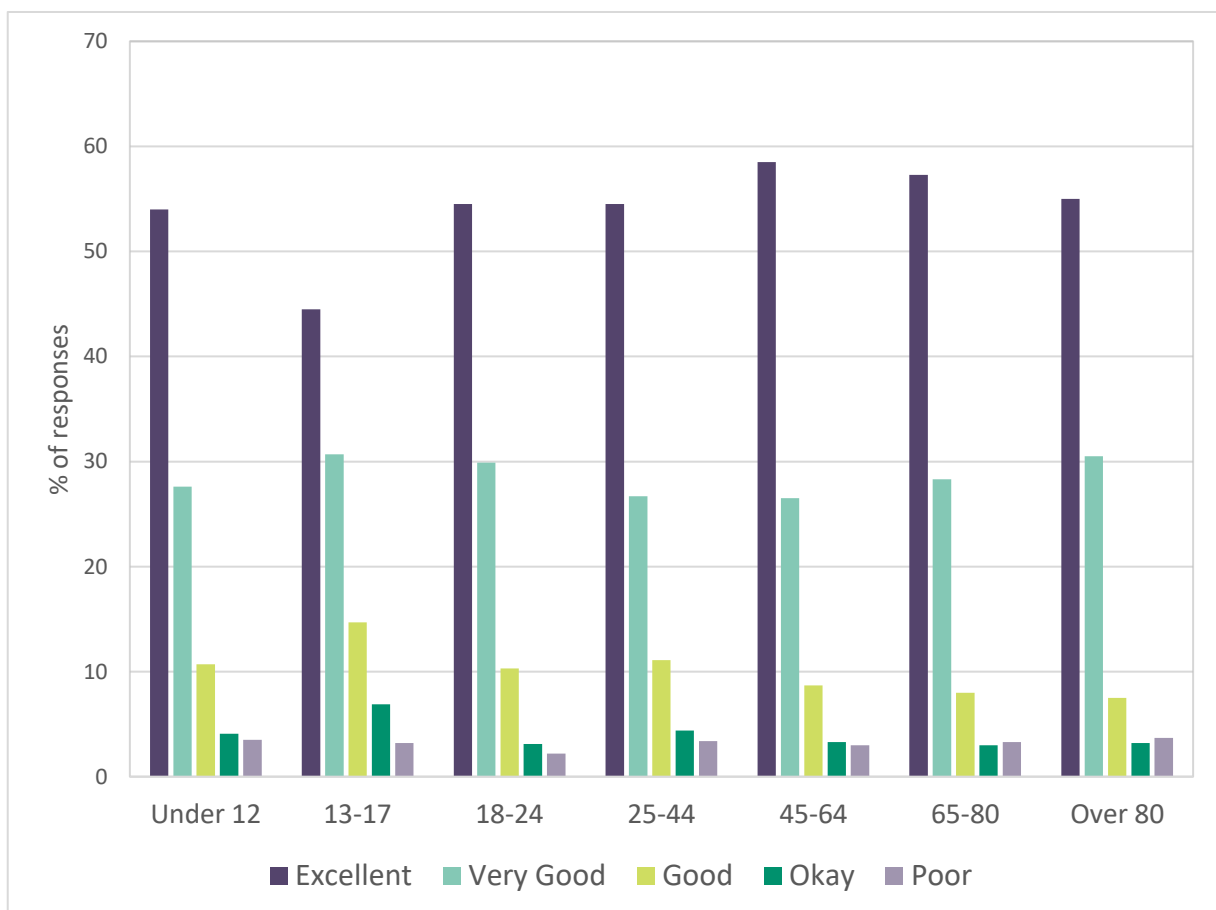
## Phase 2 Findings Based on Demographic Groups

### Age

#### Quality Ratings:

VC was rated positively amongst the different age groups (Figure 11). Specifically, ages 45-64 seemed to be the most positive regarding the quality of the VC, whereas 13-17 were the most negative. However, there were only small differences between the groups, and the percentage of “poor” ratings ranged from 2.2% to 3.7%.

Figure 11. The distribution of quality ratings for each age group.



### Prevention of face-to-face:

VC was adequate in preventing the need for a face-to-face appointment for all age groups, this information is displayed in Table 8. As with the general findings of Phase 2a, there were a high number of “No” (did not prevent) responses across patients. The reason for this is unknown, as clinicians do not have the same perception of face-to-face prevention, with higher responses for “Yes” (prevented) (Johns et al., 2020).

*Table 8. The percentage of patients where face-to-face was prevented or not prevented for Under 12 (n = 2307), 13-17 (n = 789), 18-24 (n = 779), 25-44 (n = 2972), 45-64 (n = 4099), 65-80 (n = 2475) and Over 80 (n = 357).*

	Prevented	Did not prevent	Unable to Say
Under 12	62.4	26.6	11.0
13-17	58.4	26.2	15.3
18-24	57.0	27.9	15.1
25-44	62.2	23.8	14.0
45-64	60.4	28.0	11.6
65-80	61.5	29.7	8.8
Over 80	60.2	33.3	6.4



### Previous and Future use of VC:

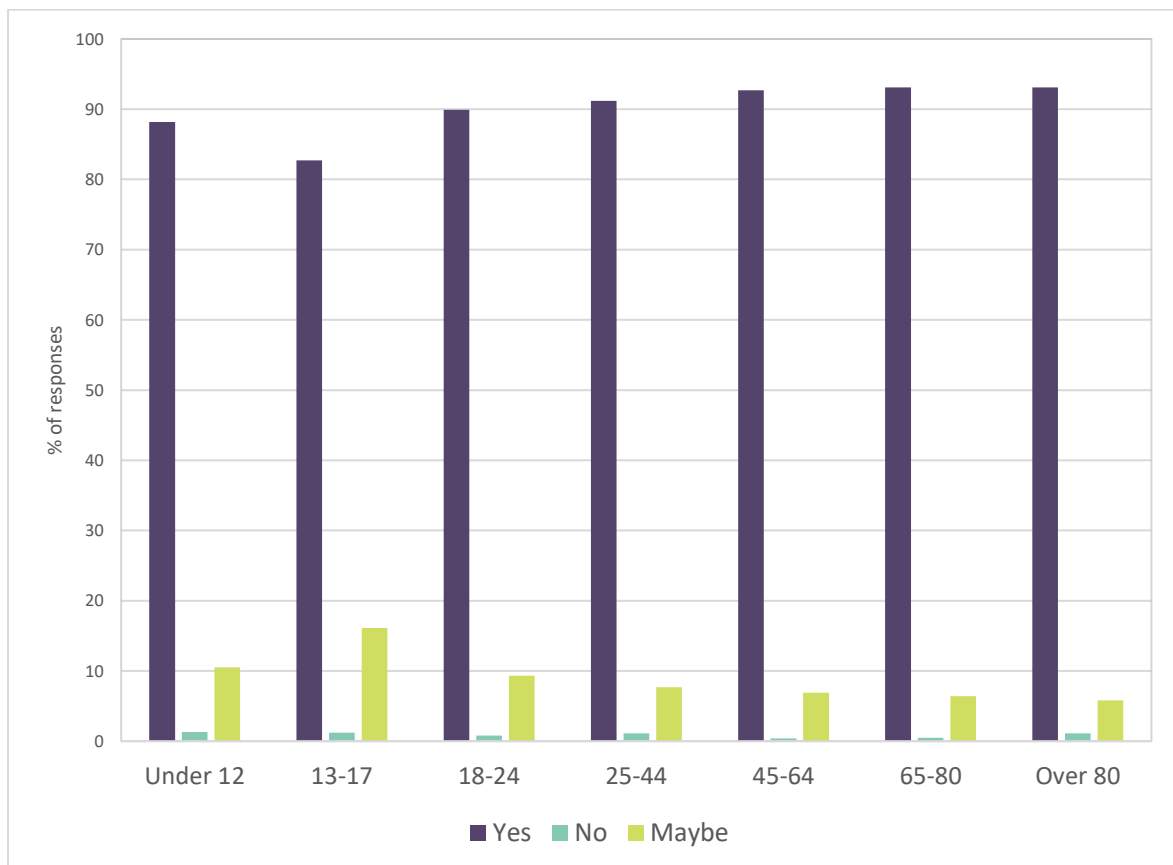
The majority of patients in each age group had only used VC on the day of their consultation. According to the responses to having used it previously (once, twice, or three times before), it seems that ages 13-17, 45-64 and 65-80 had used VC most, although the differences between the age groups are once again small, as displayed in Figure 12.

Figure 12. The proportion of responses for how many times patients had used VC prior to their appointment, per age group.



Patients who were most uncertain about whether they would use VC again in the future were aged 13-17, such that 16.1% stated they would “maybe” use VC again. However, the percentage of patients who would not use VC again were low, ranging from 0.4% (45-64) to 1.3% (Under 12). These findings are demonstrated in Figure 13.

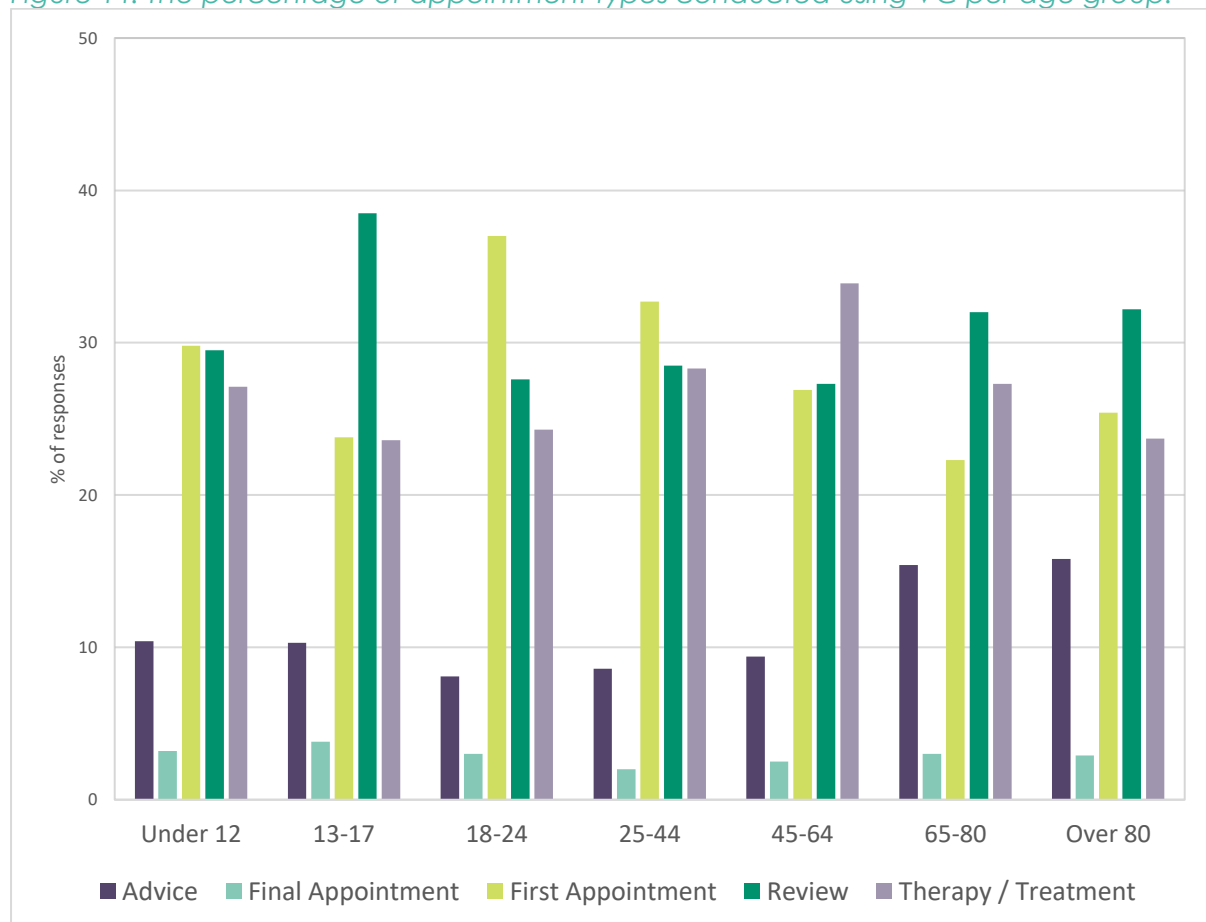
Figure 13. The percentage of patients who stated they would (yes), would not (no), or would maybe use VC again in the future, for each age group.



### Appointment Type:

Final appointments were the least likely to be conducted using VC amongst all age groups. For Under 12s, the most common type of appointments conducted using VC were first appointments (29.8%), reviews (29.5%), and therapy/treatment (27.1%). For patients aged 13-17, reviews (38.5%) were the most common, age 18-24 was first appointments (37.0%) as well as for 25-44 (32.7%). Therapy/treatment appointments were conducted most for 45-64s (33.9%), and reviews for 65-80 (32.0%). Finally, reviews were also most common for over 80s (32.3%). However, only small differences exist between groups (Figure 14).

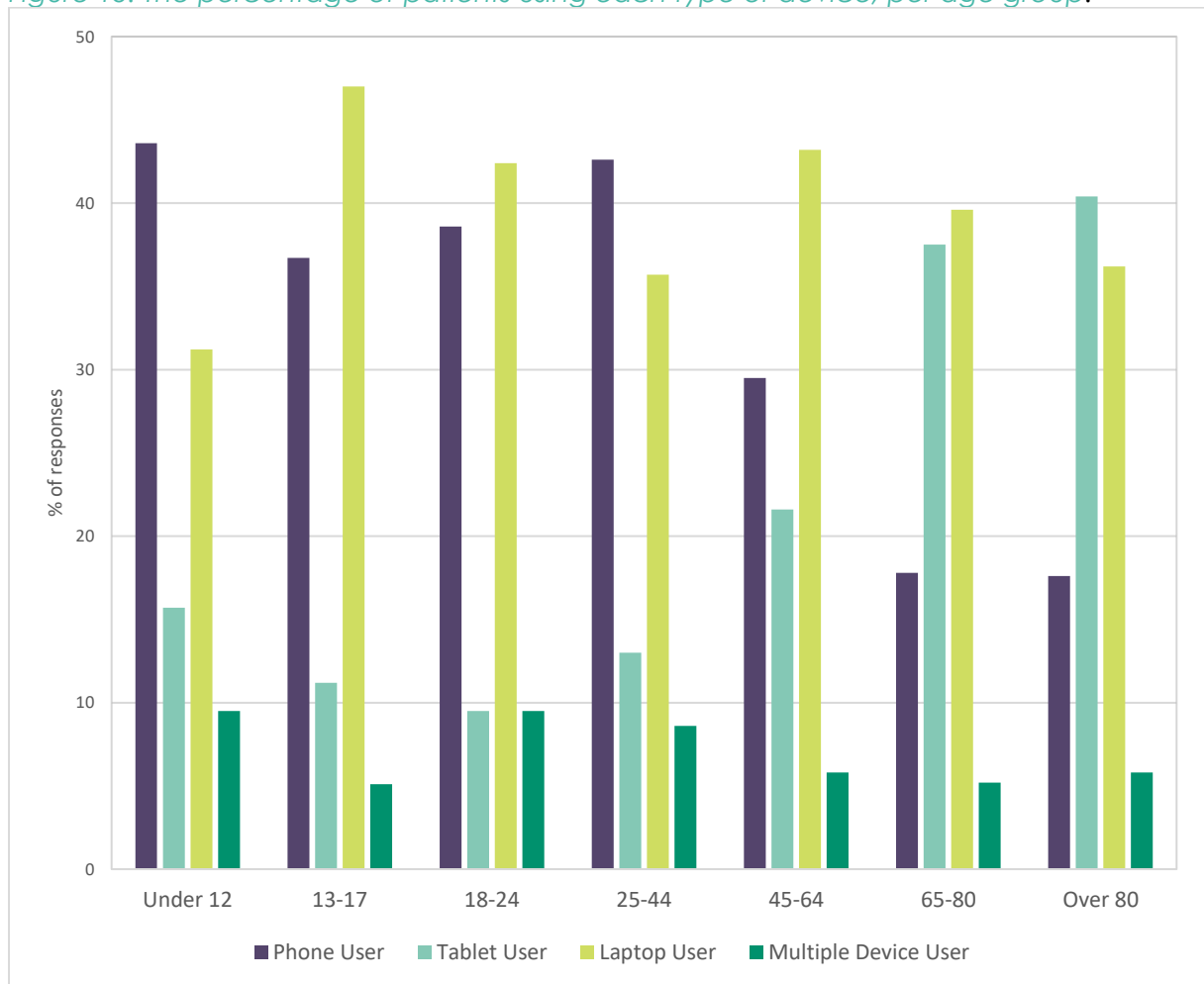
Figure 14. The percentage of appointment types conducted using VC per age group.



### Device Usage:

Interestingly, differences emerged between the age groups when considering the types of devices used to conduct VC. Younger age groups were most commonly using laptops or phones, compared with the older age groups who were using laptops and tablets (Figure 15).

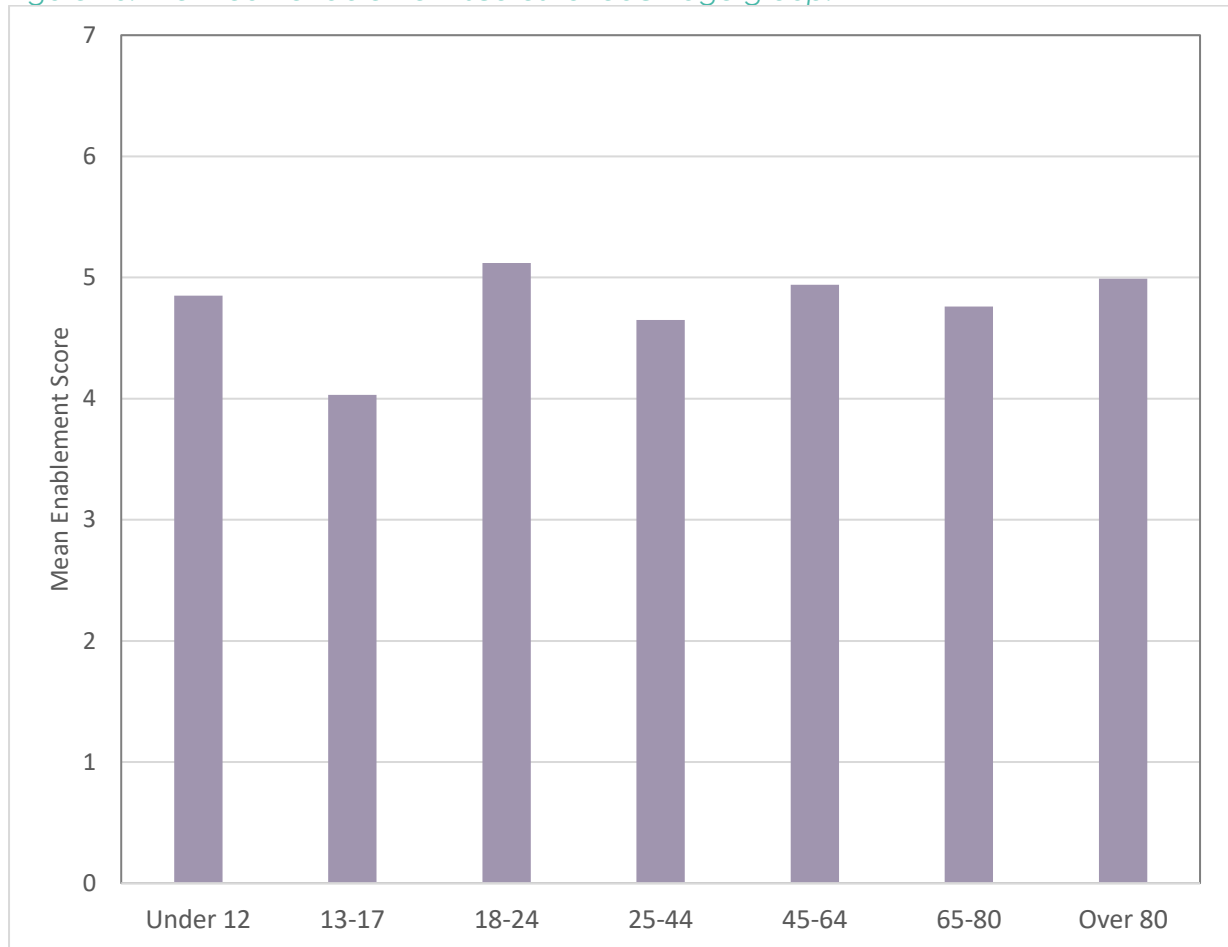
Figure 15. The percentage of patients using each type of device, per age group.



### Enablement Scores:

Considering patients' enablement scores, the means are displayed in Figure 16. The age group 18-24 had the highest mean score, whereas 13-17 had the lowest. A Kruskal-Wallis test of difference revealed a significant difference between the groups,  $H = 22.95$ ,  $p < .001$ .

Figure 16. The mean enablement scores for each age group.

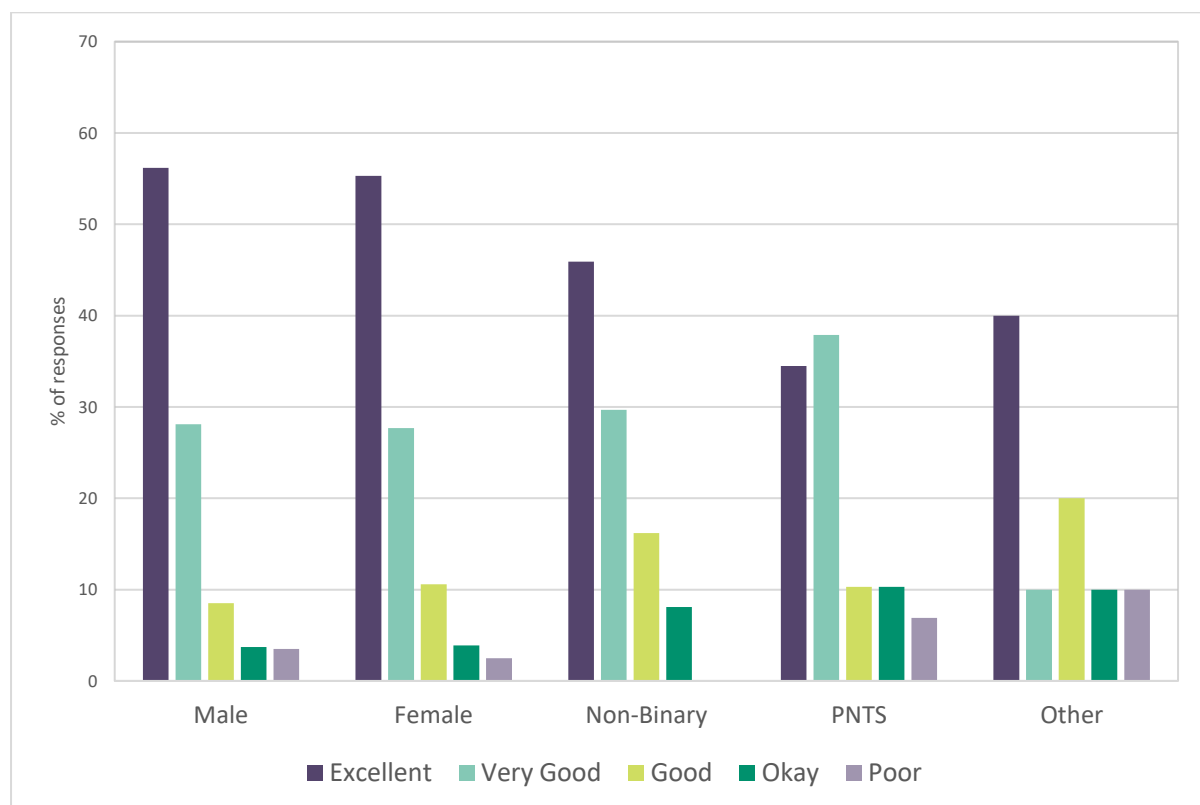


## Gender:

### Quality Ratings:

Males and females were similar in the quality rating of their VC. This was supported by a Mann-Whitney U test, which revealed no significant differences between males and females ( $U = 14658353.0$ ,  $p > .05$ ) (Figure 17). Quality ratings seemed to decrease for individuals who were Non-Binary ( $n = 37$ ), Preferred not to say (PNTS) ( $n = 29$ ), or stated Other ( $n = 10$ ), although statistical tests were not possible due to small sample sizes.

Figure 17. The distribution of quality ratings for each gender.



*Prevention of face-to-face:*

Information regarding the prevention of face-to-face is demonstrated in Table 9. Face-to-face prevention for males and females was similar. For the other gender groups, it seems less individuals stated that face-to-face had been prevented, although small group sizes (non-binary n = 39; PNTS n = 29; Other n = 10) may have skewed the distributions of responses.

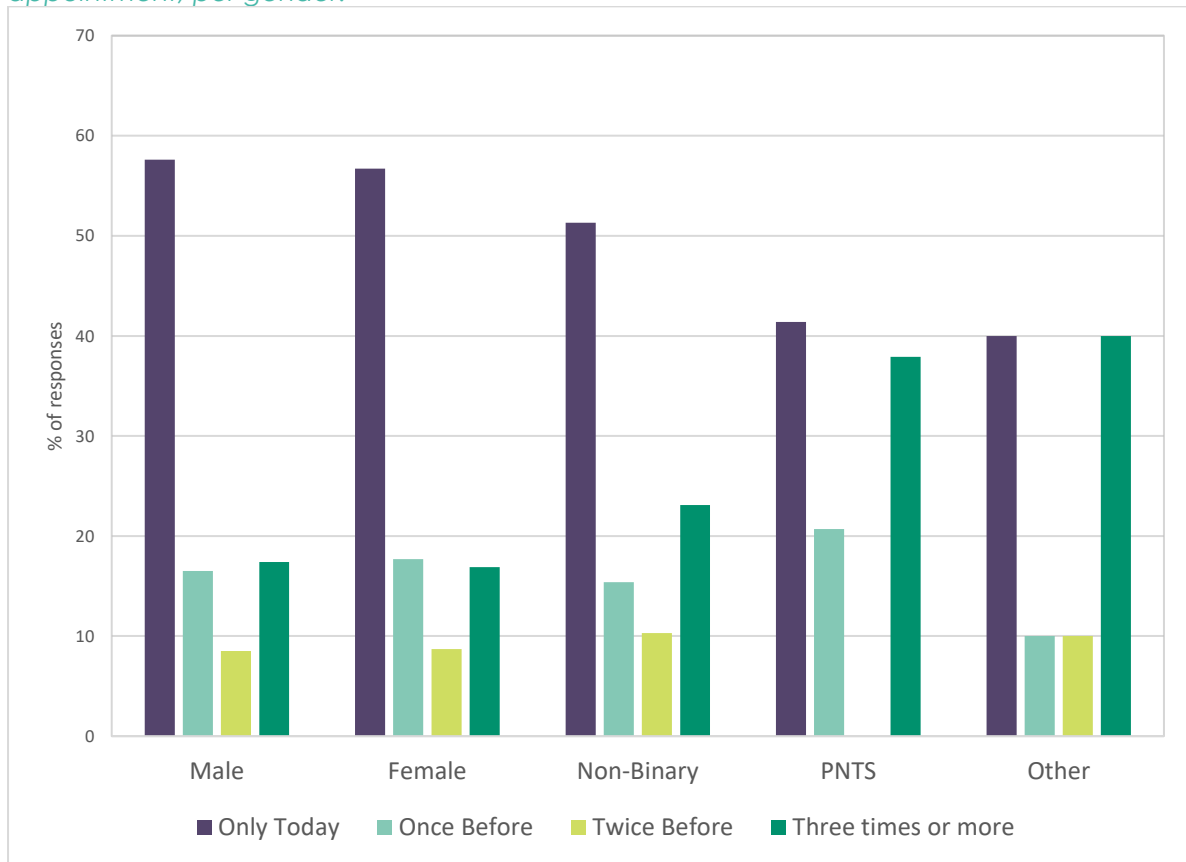
*Table 9. The percentage of patients of each gender that stated face-to-face was prevented or not prevented by the VC.*

	Prevented	Did not prevent	Unable to Say
Male	60.3	27.9	11.8
Female	62.1	26.4	11.5
Non-Binary	53.8	15.4	30.8
Prefer not to say	41.4	24.1	34.5
Other	50.0	40.0	10.0

*Previous and Future use of VC:*

Once again, there were no differences between males and females for how many times they had used VC prior to their appointment, displayed in Figure 18. Those who stated PNTS or Other seemed to have used it more, with more responses for “three times or more”, however the small sample sizes may have caused these differences to emerge.

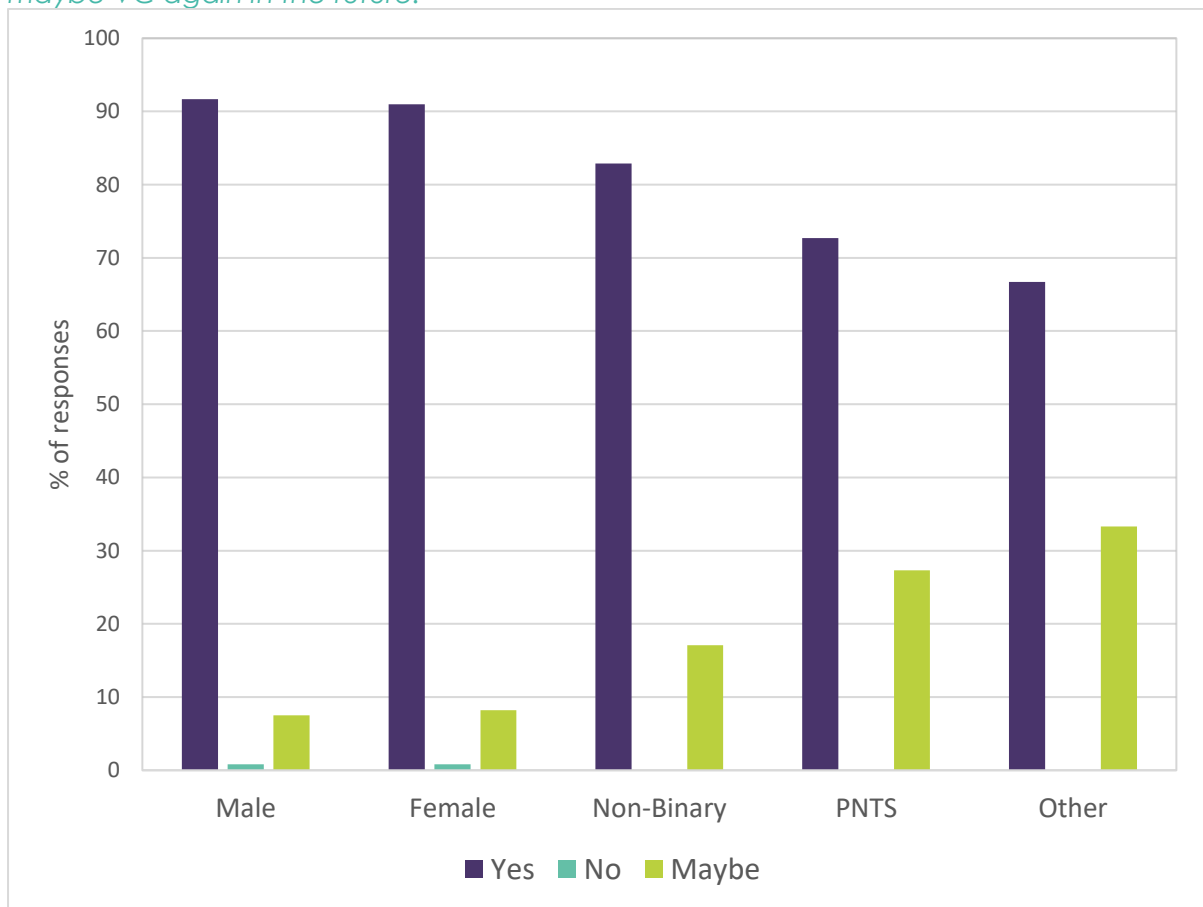
*Figure 18. The proportion of responses for how many times patients had used VC prior to their appointment, per gender.*





All patients, except for 0.8% of males and 0,8% of females would use or consider using VC again in the future. Males and females were similar in their responses, however, non-binary patients, as well as those who stated PNTS or Other were more uncertain, with higher percentages of “Maybe” responses (Figure 19).

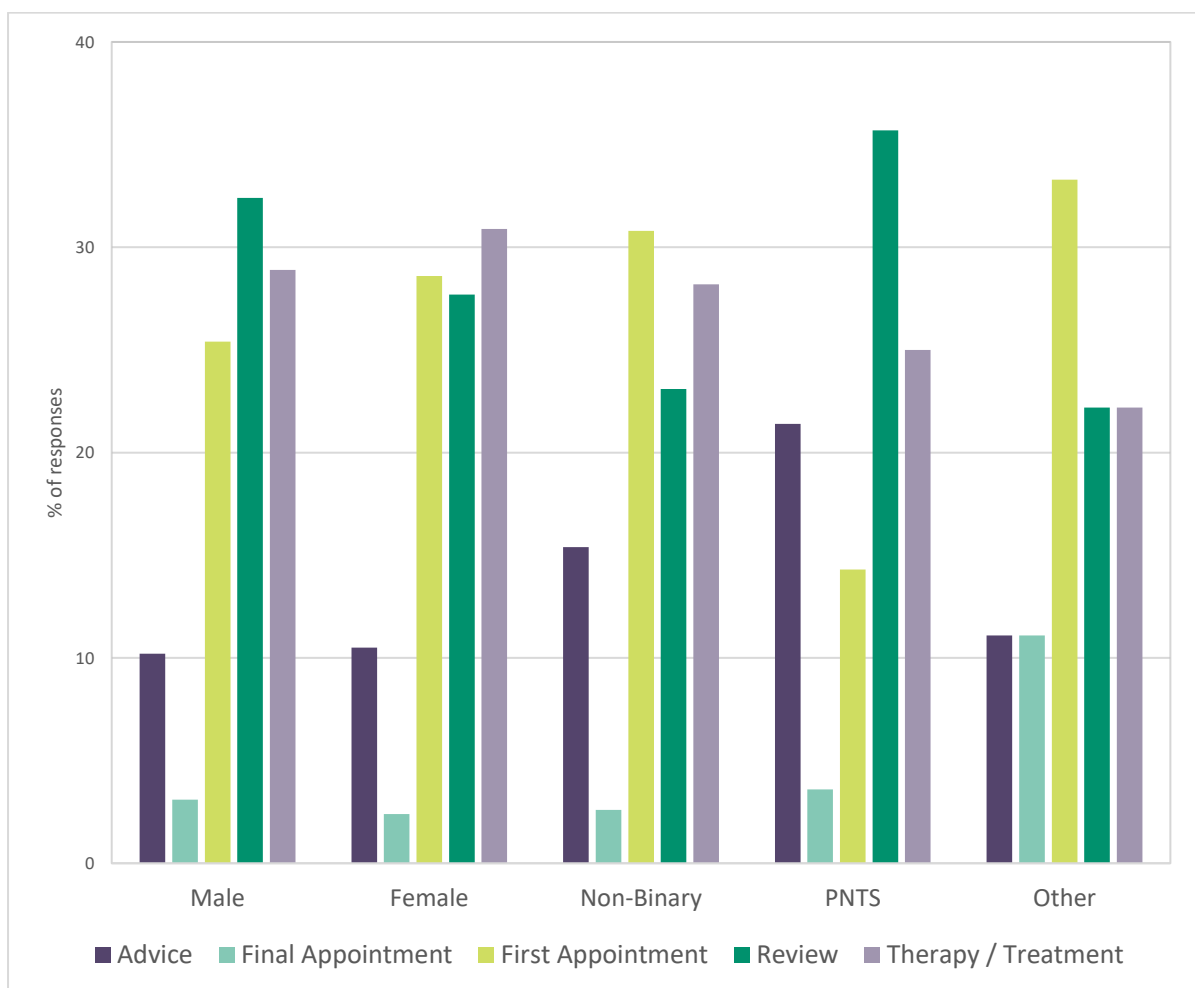
Figure 19. The percentage of patients who would use (yes), would not use (no), or would maybe VC again in the future.



### Appointment Type:

Across all gender groups, final appointments were the least common. The most common for males was reviews (32.4%), and therapy/treatments for females (30.9%). For Non-binary patients, the most common appointment was first appointments (30.8%), and reviews for those who stated PNTS (35.7%). It is important to note that there were only 9 responses for "Other". The responses are displayed in Figure 20.

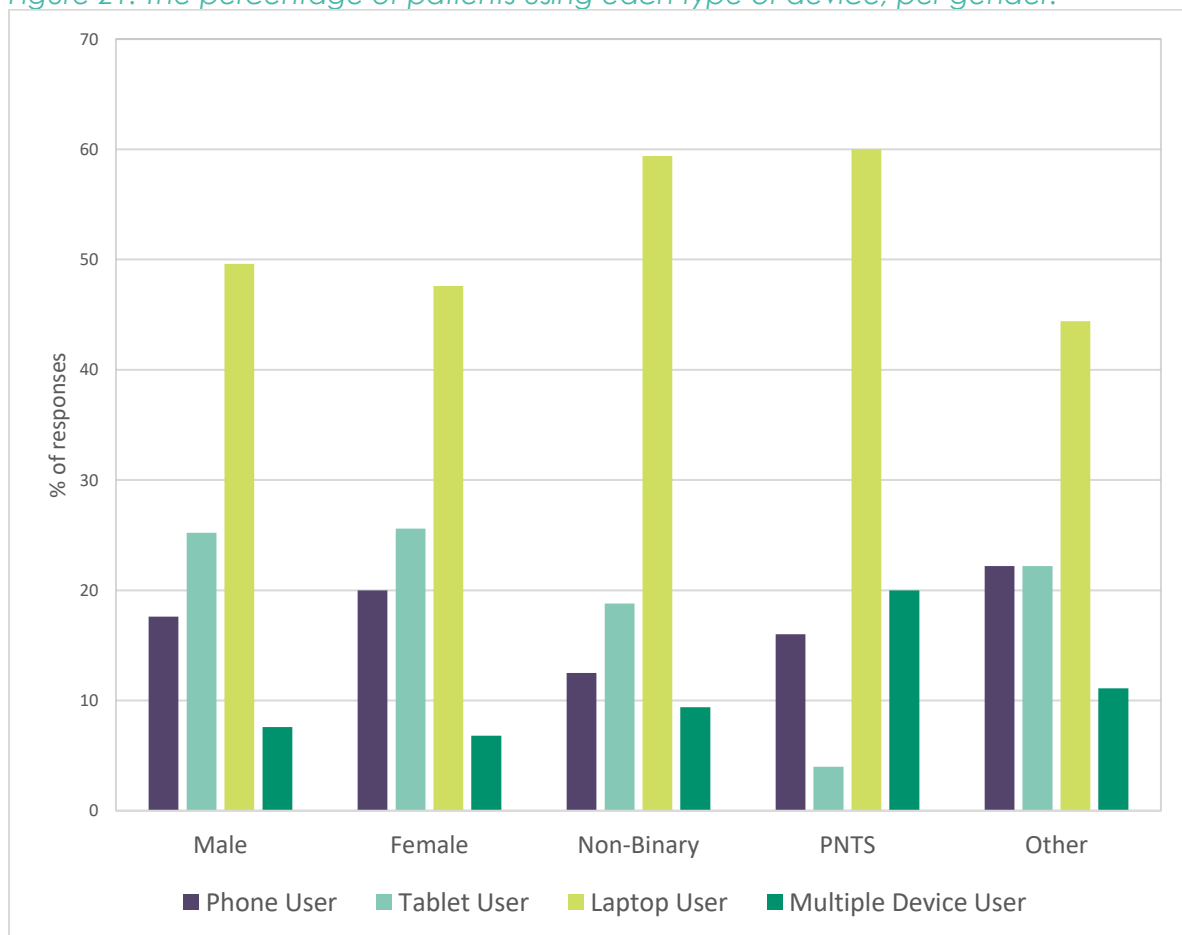
Figure 20. The percentage of appointment types conducted using VC per gender.



### Device Usage:

All gender groups were most commonly using laptops to conduct their VC. No evident differences in device usage emerged, which can be seen in Figure 21 below, except for PNTS and Other where the sample sizes were smaller.

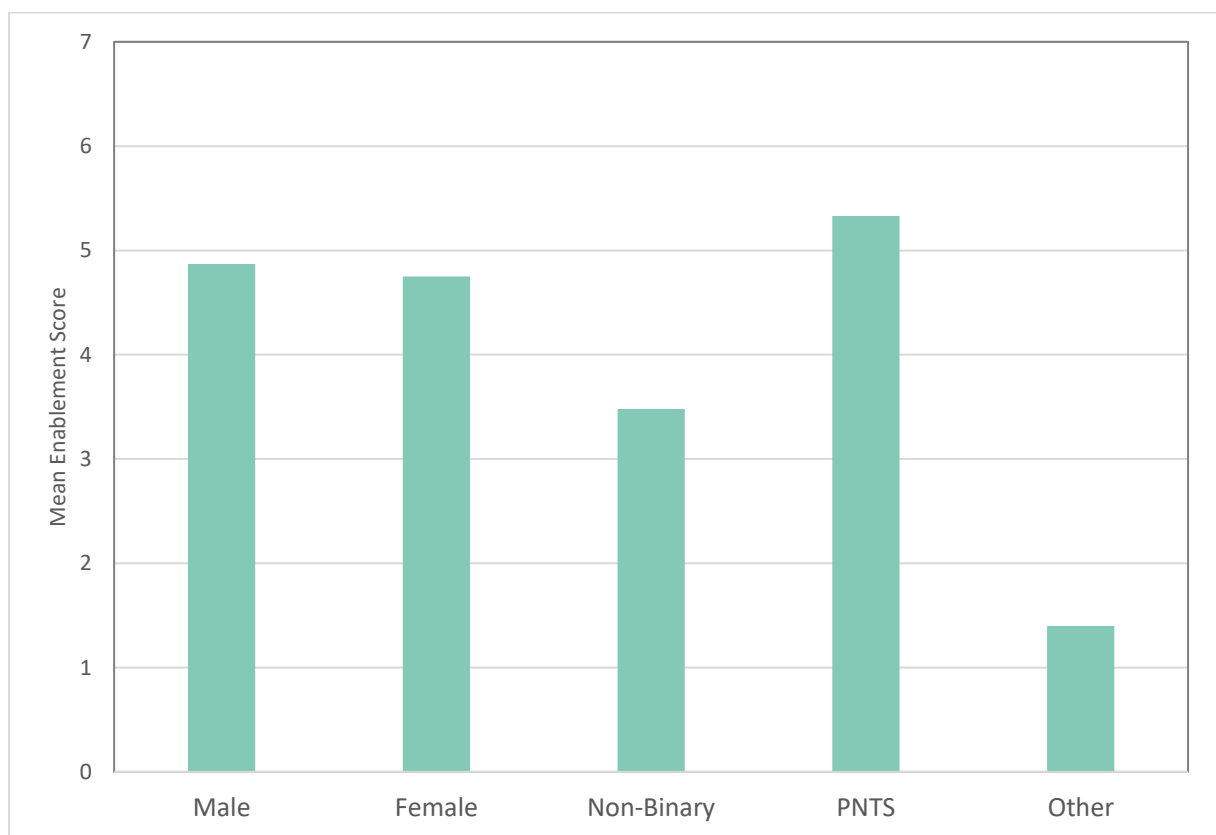
Figure 21. The percentage of patients using each type of device, per gender.



### Enablement Scores:

There were no significant differences between male (n = 2141) and females' (n = 2994) enablement scores ( $U = 3142645$ ,  $p > .05$ ). Statistical tests were not possible with the remaining gender groups due to smaller sample sizes. However, from the graph below, it seems that non-binary (n = 21) and other (n = 5) patients gave lower scores, on average, to the enablement questions, whereas PNTS (n = 12) gave higher (Figure 22).

Figure 22. The mean enablement scores calculated for each gender.

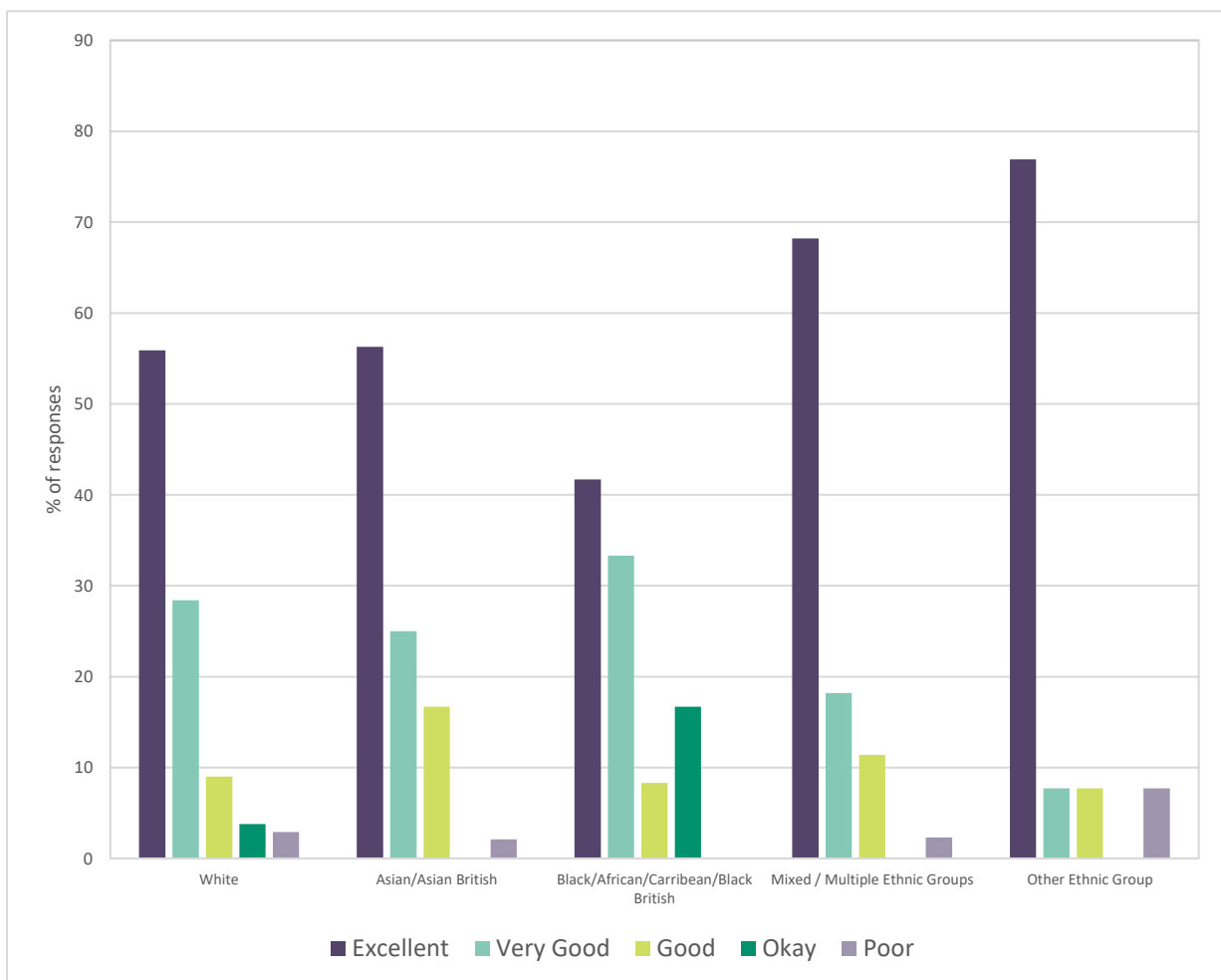


## Ethnicity

### Quality Ratings:

The quality ratings provided by patients in each ethnic group are displayed in Figure 23. Ratings were similar, although they seemed to be lowest for respondents of Black/African/Caribbean/Black British backgrounds. However, group sizes were very low for all except White (n = 3108), whereby there were only 12 responses for Black/African/Caribbean/Black British and 13 for Other Ethnic Group backgrounds. There were 48 responses for Asian/Asian British, and 44 for Mixed/Multiple Ethnic Groups.

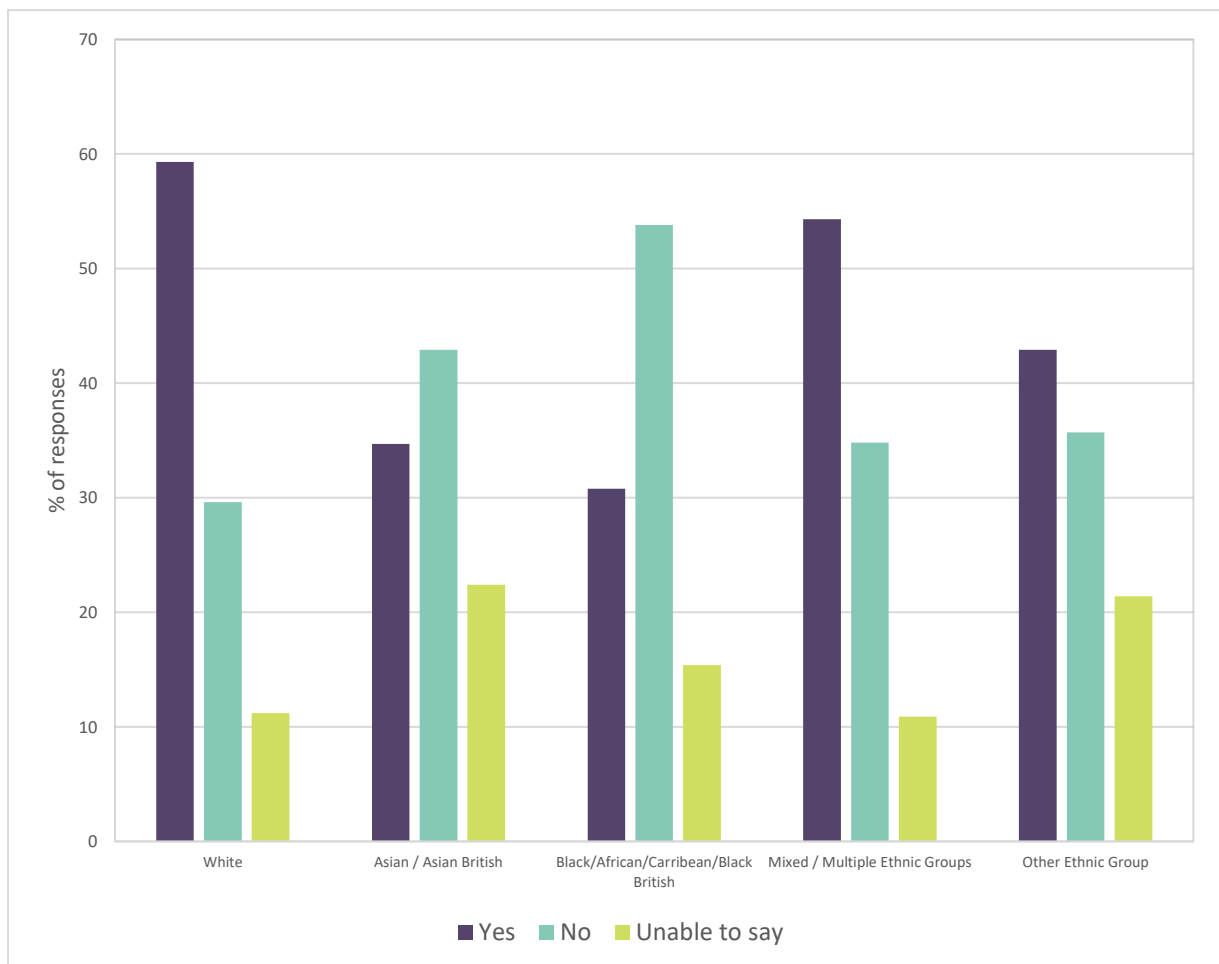
Figure 23. The distribution of quality ratings for each Ethnic Group.



### Prevention of face-to-face

Prevention of face-to-face seemed to differ amongst ethnic groups. For instance, it was highest amongst individuals of White Ethnic backgrounds, as well as Mixed/Multiple Ethnic Groups, but lowest for Asian/Asian British and Black/African/Caribbean/Black British. These findings are displayed in Figure 24. It is once again essential to reiterate the small number of respondents for all groups other than White, but especially Black/African/Caribbean/Black British and Other Ethnic Groups.

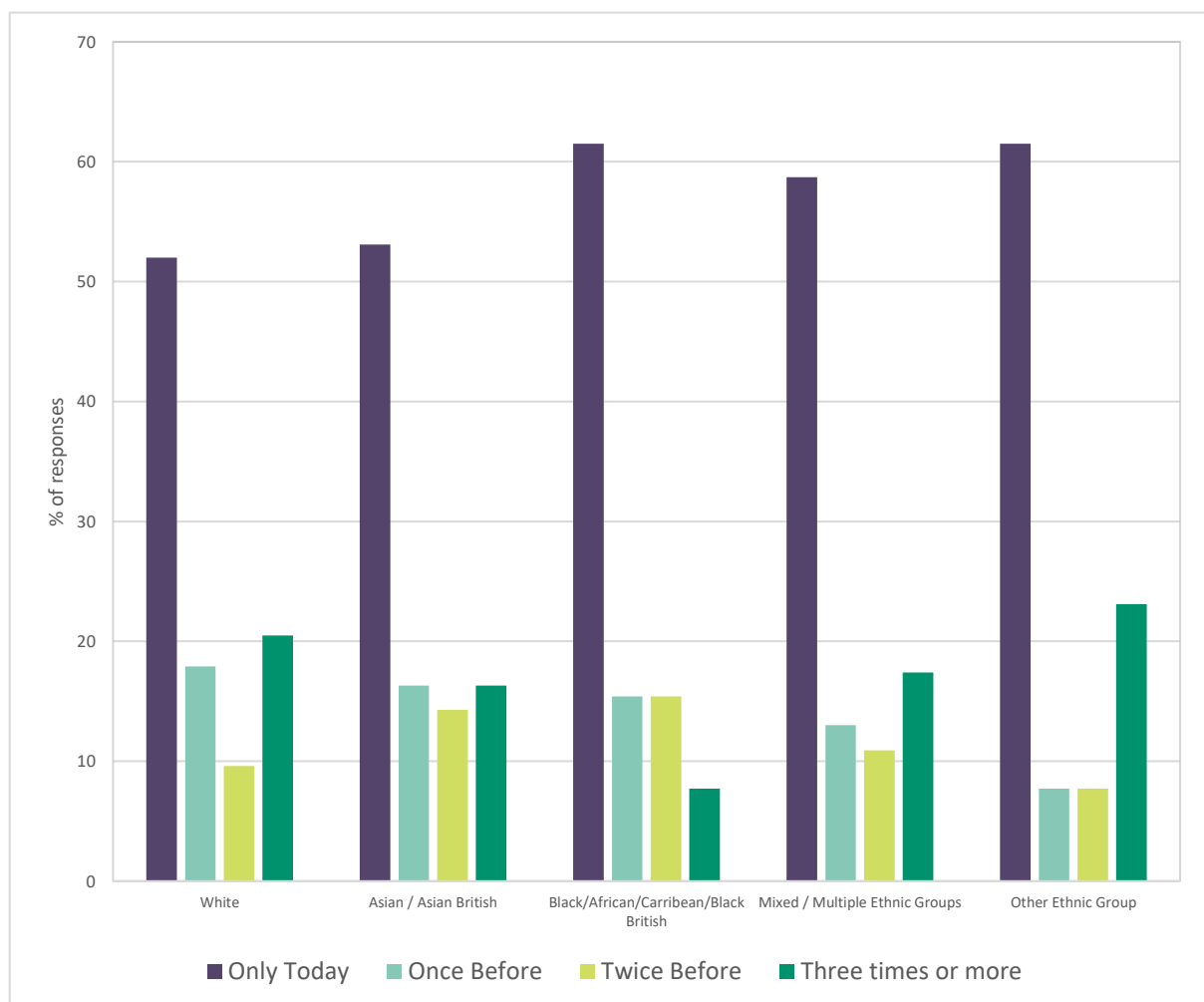
Figure 24. The percentage patients where face-to-face was prevented for per Ethnic Group (White n = 3130; Asian/Asian British n = 49; Black/African/Caribbean/Black British n = 13; Mixed/Multiple Ethnic Group n = 46; Other Ethnic Group n = 14).



### Previous and Future use of VC:

As demonstrated in Figure 25, across all ethnic groups, the majority of patients had only used VC the day of their appointment. In terms of future usage of VC, 91.9% of patients of White ethnic backgrounds stated they would use VC again, 85.7% of Asian/Asian British, 70.0% of Black/African/Caribbean/Black British, 85.3% Multiple Ethnic Groups, and 88.9% of Other Ethnic Groups. Only 0.9% of White background patients stated they would not use VC again, and the remainder of all patients responded “Maybe” across all groups.

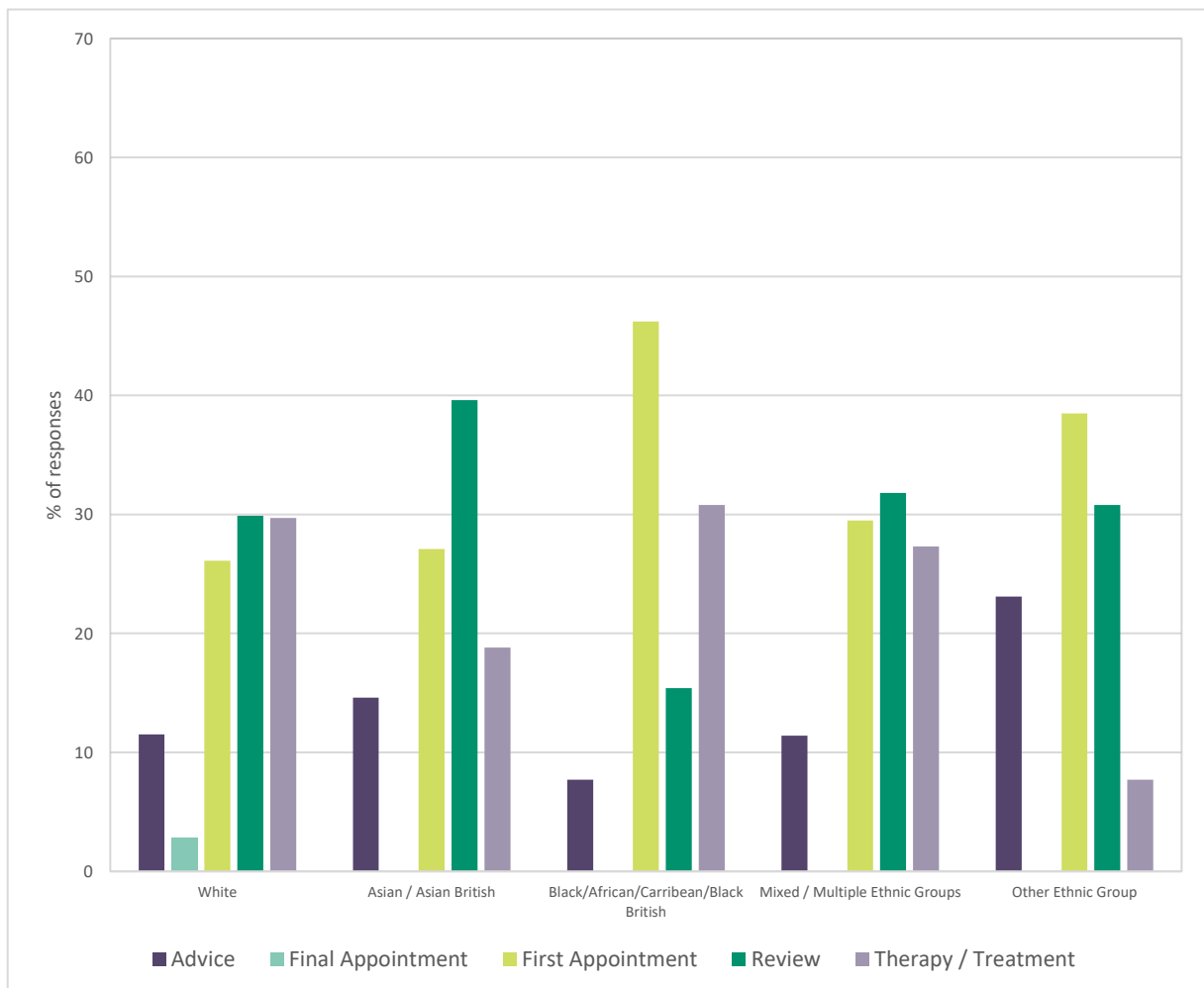
Figure 25. The proportion of responses for how many times patients had used VC prior to their appointment across all ethnic groups (White n = 3088; Asian/Asian British n = 49; Black/African/Caribbean/Black British n = 13; Mixed/Multiple Ethnic Group n = 46; Other Ethnic Group n = 14).



### Appointment Type:

The percentage of appointments conducted using VC are displayed in Figure 26. In particular, final appointments were least common amongst all ethnic groups, followed by advice for all except Other Ethnic Group, where this was therapy/treatment appointments. Most common for White background patients were therapy/treatment and reviews, reviews for Asian/Asian British and Mixed/Multiple Ethnic Groups, and first appointments for Black/African/Caribbean/Black British and Other Ethnic Groups.

Figure 26. The percentage of appointments conducted using VC for each ethnic group (White n = 3070; Asian/Asian British n = 48; Black/African/Caribbean/Black British n = 13; Mixed/Multiple Ethnic Group n = 44; Other Ethnic Group n = 13).

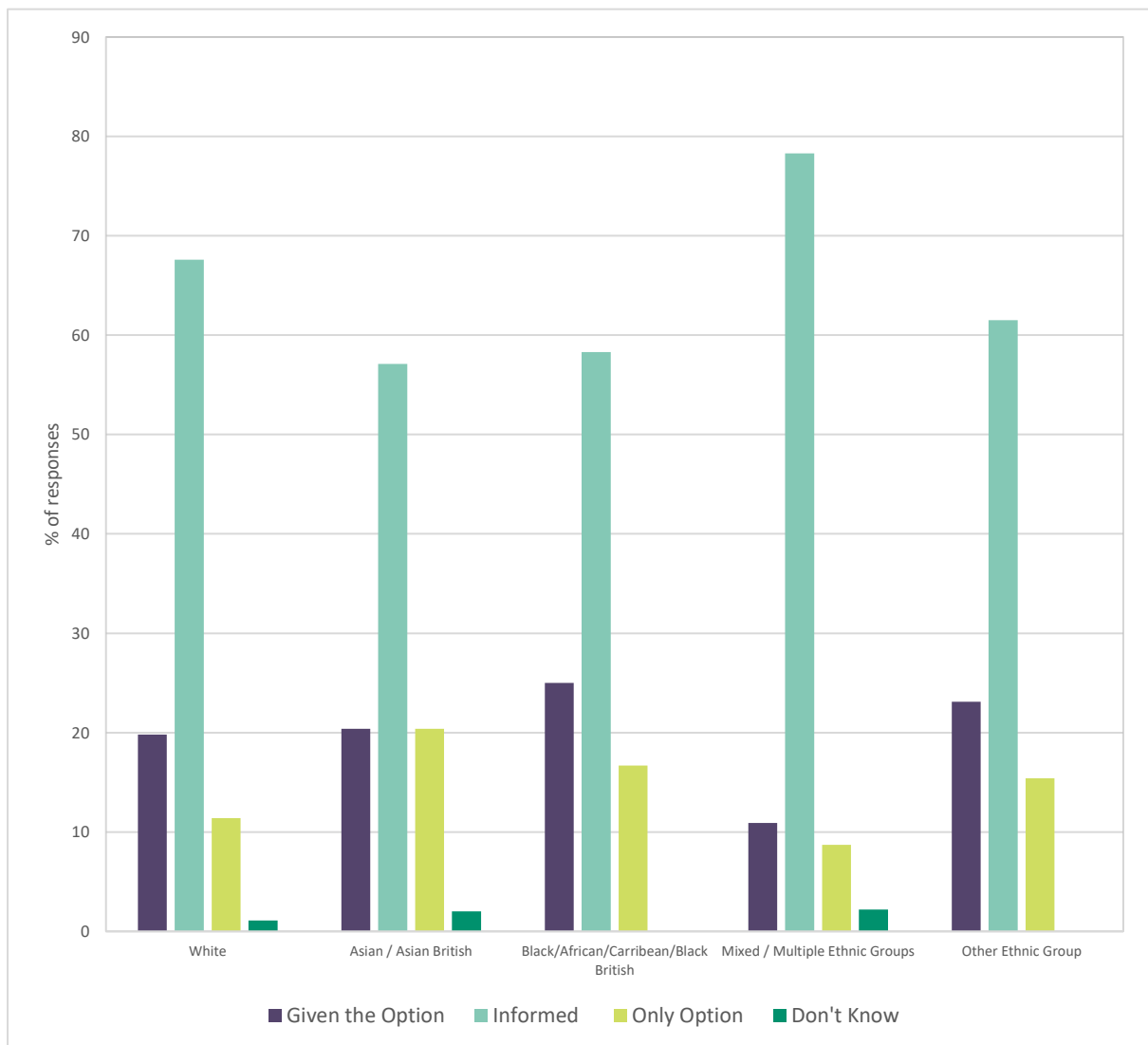




### Choice to Use VC:

For most respondents across all ethnic groups, they were informed of the choice to use VC by their service. Only small percentages of respondents were given the choice to use VC (ranging from 10.9% to 23.1%). These results are displayed in Figure 27.

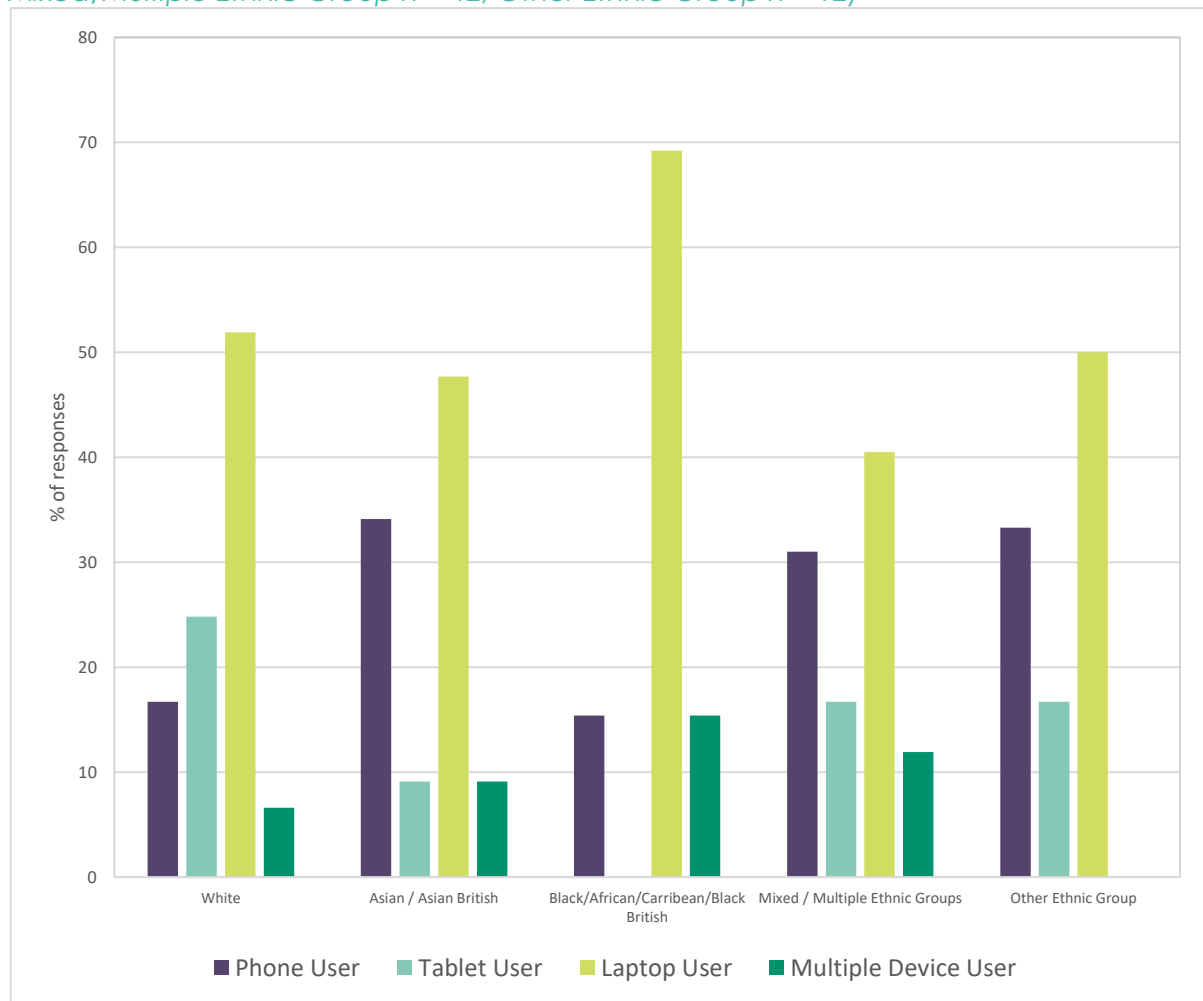
Figure 27. The percentage of patients in each ethnic group stating whose choice it was to use VC (White n = 3124; Asian/Asian British n = 49; Black/African/Caribbean/Black British n = 12; Mixed/Multiple Ethnic Group n = 46; Other Ethnic Group n = 13)



### Device Usage:

The most common type of device being used across all ethnic groups were laptops, followed by tablets for those belonging to White ethnic groups, and phones for the remaining groups (Figure 28).

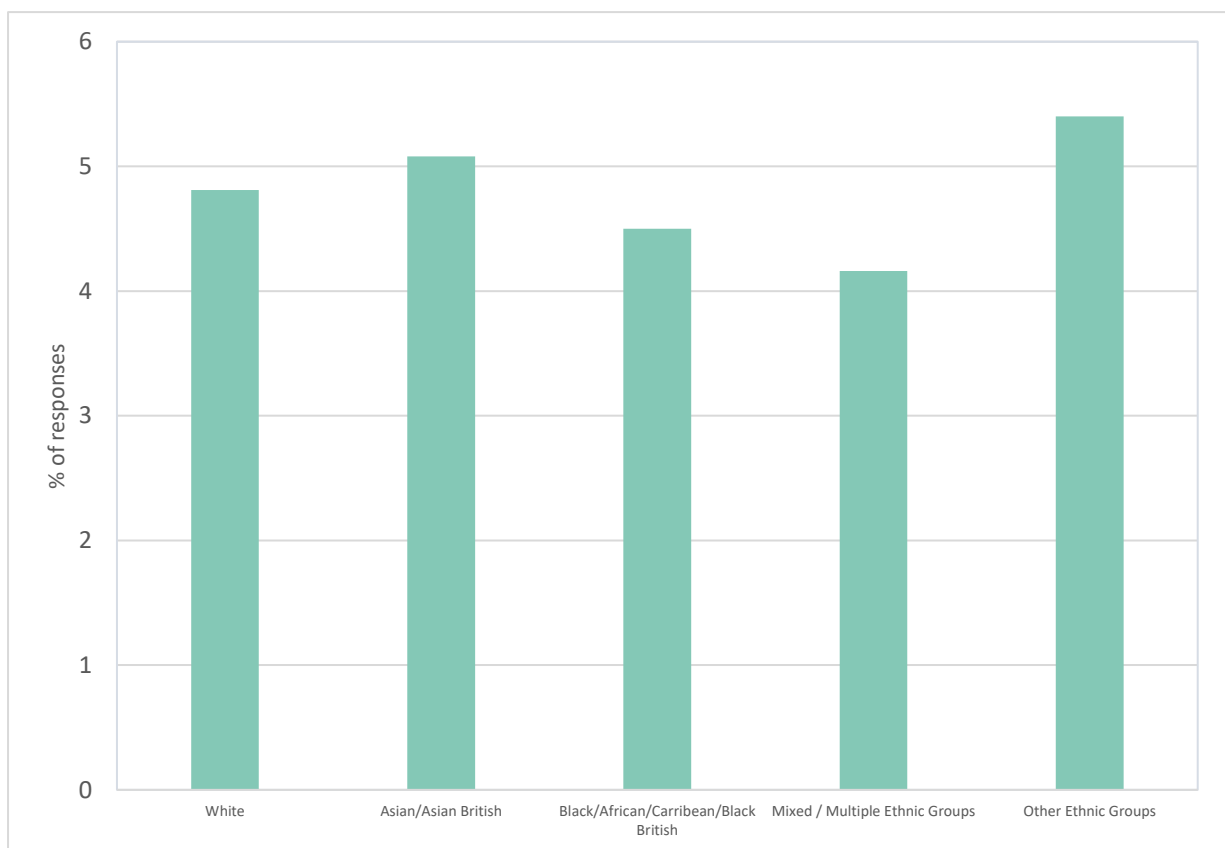
Figure 28. The percentage of patients using each type of device for each ethnic group (White n = 2768; Asian/Asian British n = 44; Black/African/Caribbean/Black British n = 13; Mixed/Multiple Ethnic Group n = 42; Other Ethnic Group n = 12)



### Enablement Scores:

Mean enablement scores ranged from 4.2 for patients of Mixed/Multiple Ethnic Groups to 5.4 for Other Ethnic Groups. Overall, scores were similar although comparisons are made difficult due to the differing sample sizes (e.g., White  $n = 2272$  and Black/African/Caribbean/Black British  $n = 6$ ). Mean scores are displayed in Figure 29.

Figure 29. The mean enablement scores for each ethnic group (White  $n = 2272$ ; Asian/Asian British  $n = 39$ ; Black/African/Caribbean/Black British  $n = 6$ ; Mixed/Multiple Ethnic Group  $n = 31$ ; Other Ethnic Group  $n = 10$ )

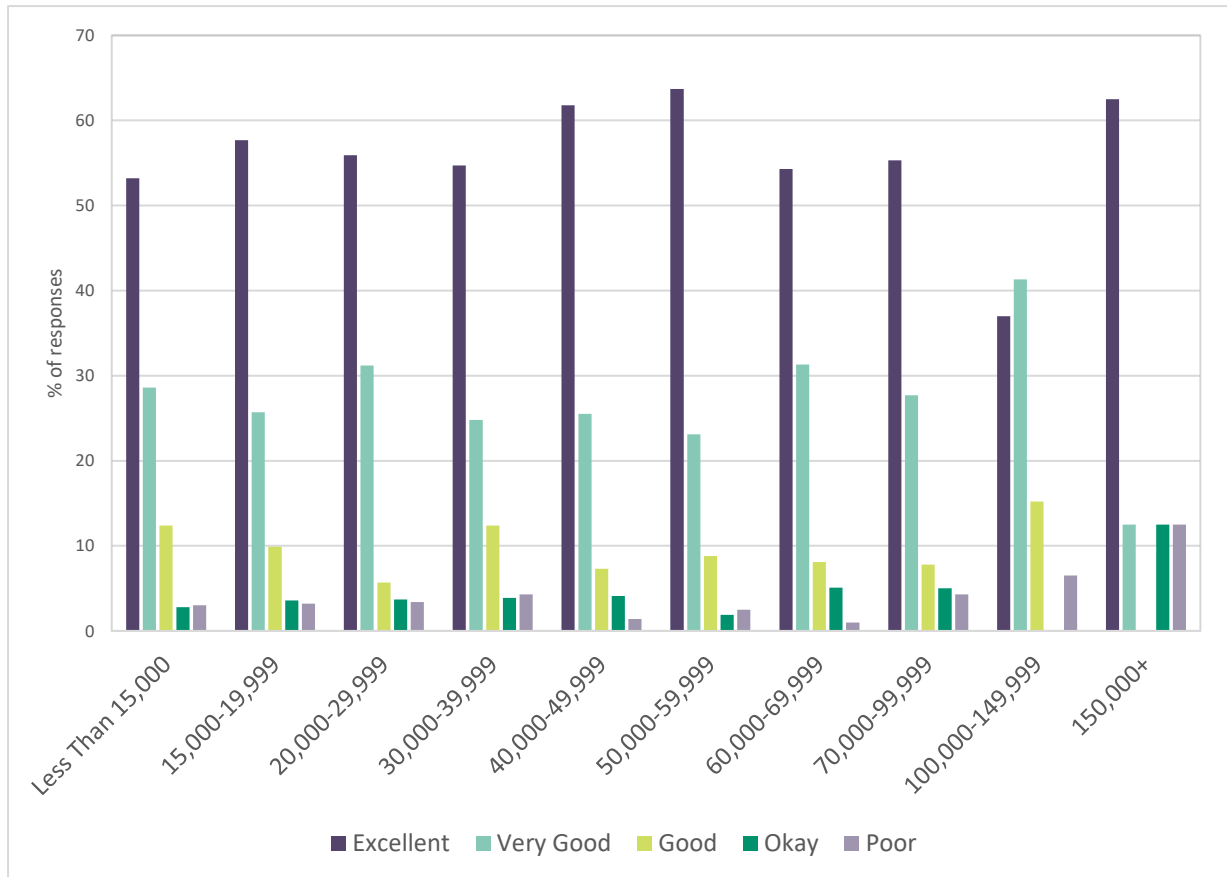


## Income.

### VC Quality:

The highest ratings came from individuals earning between £50,000 and £59,999 a year, whereas the most negative ratings were given by those earning between £100,000 and £149,999 (Figure 30).

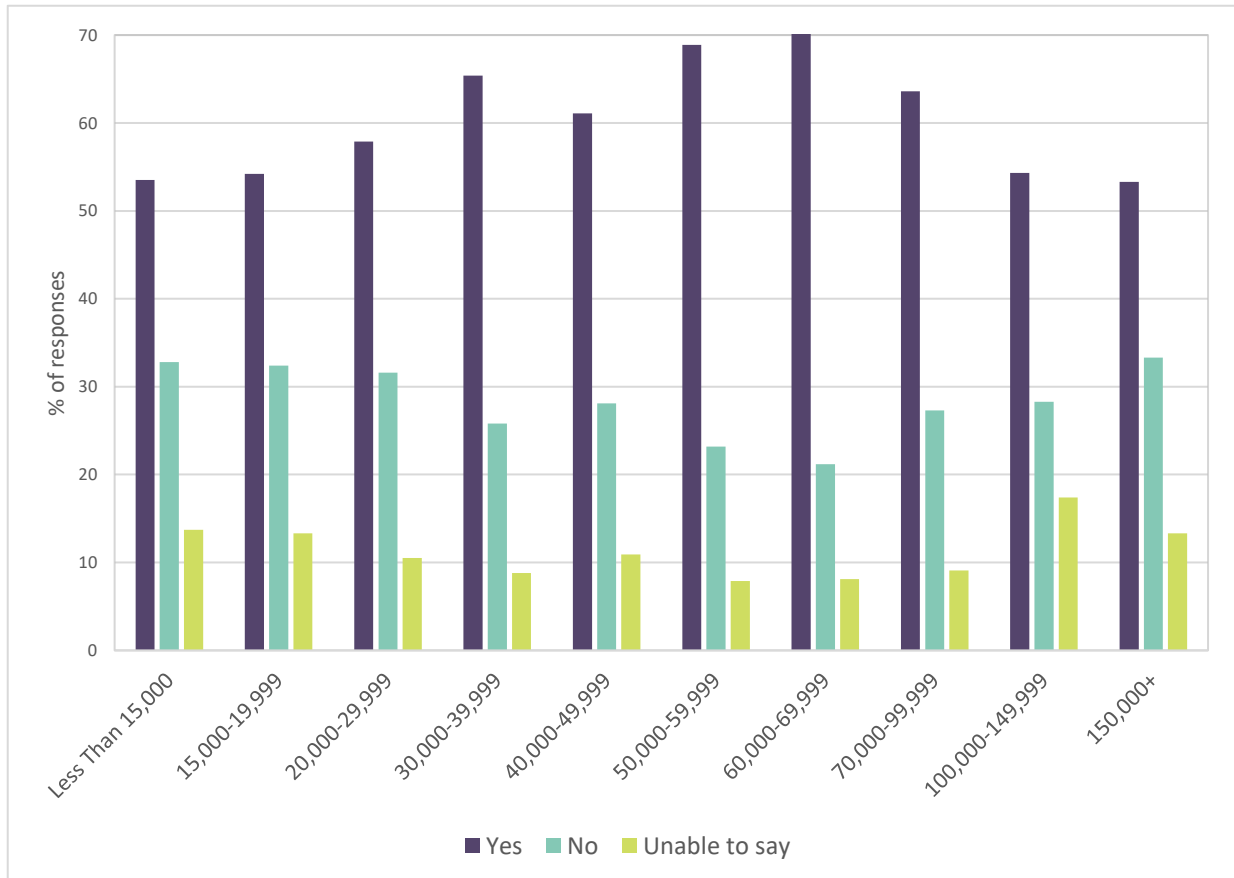
Figure 30. The distribution of quality ratings for each income group.



### Prevention of face-to-face:

The prevention of face-to-face ranged from 53.3% for £150,000+ to 70.7% for £60,000-£69,999 (Figure 31).

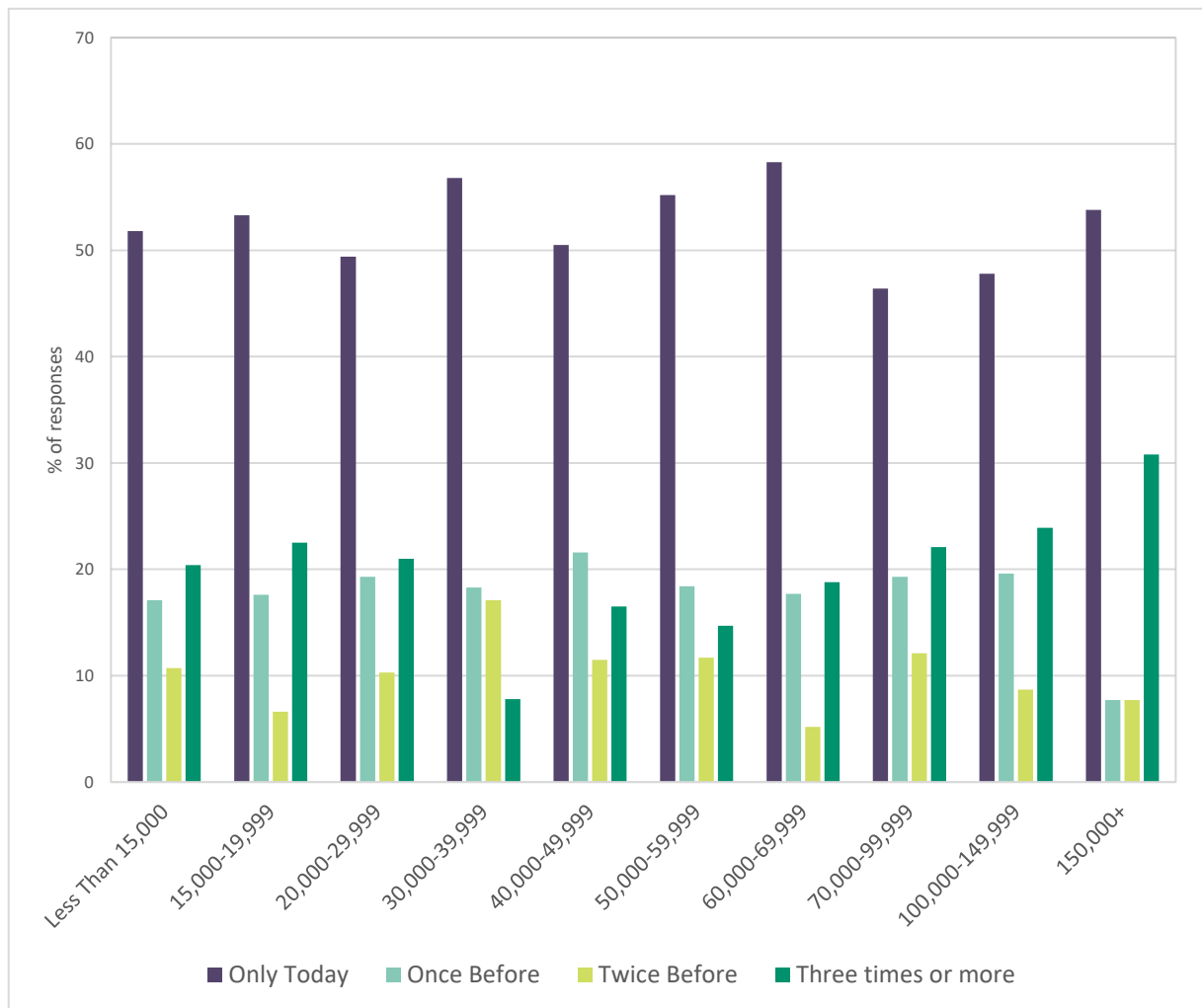
Figure 31. The percentage of patients where face-to-face was prevented (yes) or not prevented (no) across the income groups.



*Previous and Future Use of VC:*

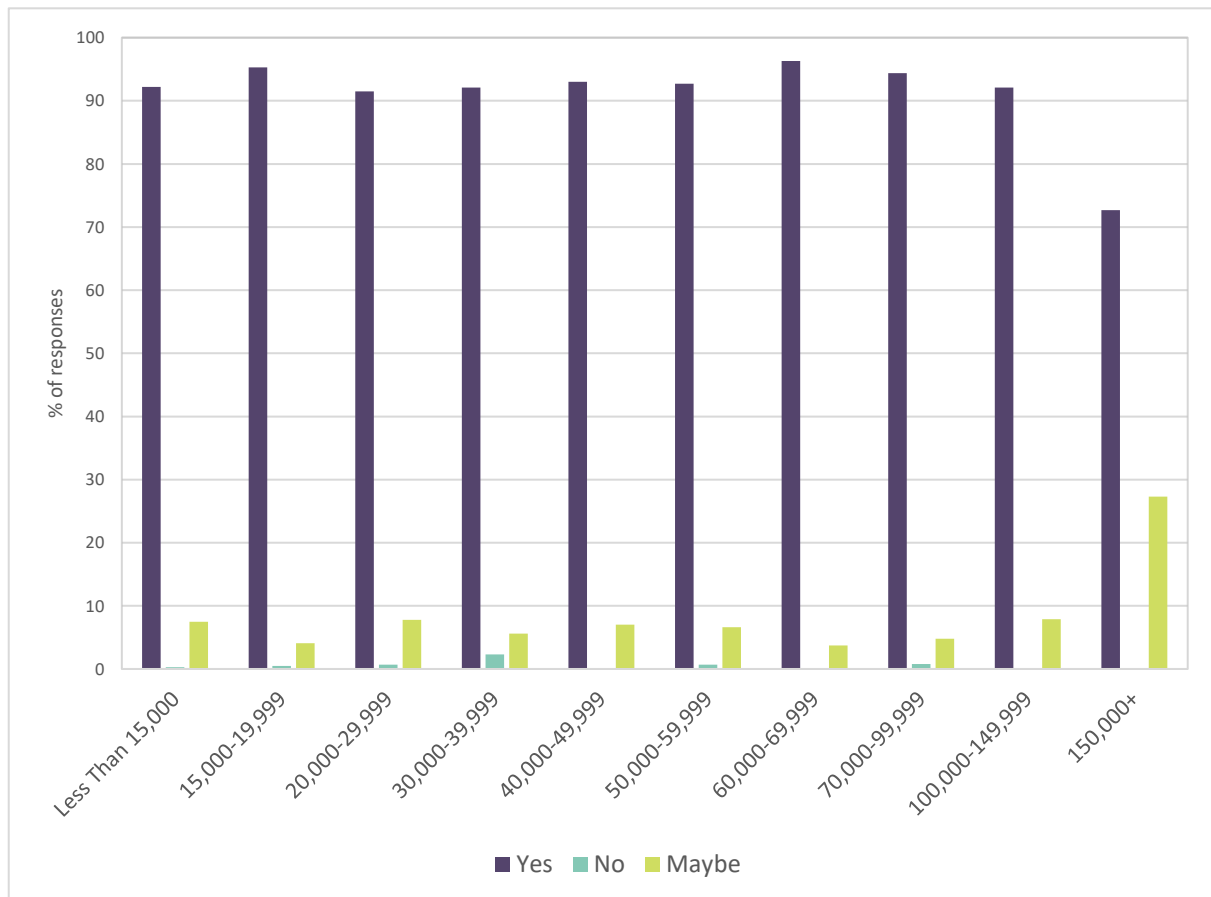
Across all income groups, the majority of patients had used VC only on the day of their consultation. The responses are displayed in Figure 32. There was a higher proportion of respondents that had used VC three times or more in the £150,000+ group, however, there were only 15 respondents in this category.

*Figure 32. The proportion of responses for how many times patients had used VC prior to their appointment, per income group.*



Positively, over 90% of patients in all groups (except £150,000+, note the small group size) would use VC again in the future. There were also very low numbers of patients that would not use it again, ranging from 0 to 2.3% (5 respondents in £30,000-£39,999) (Figure 33).

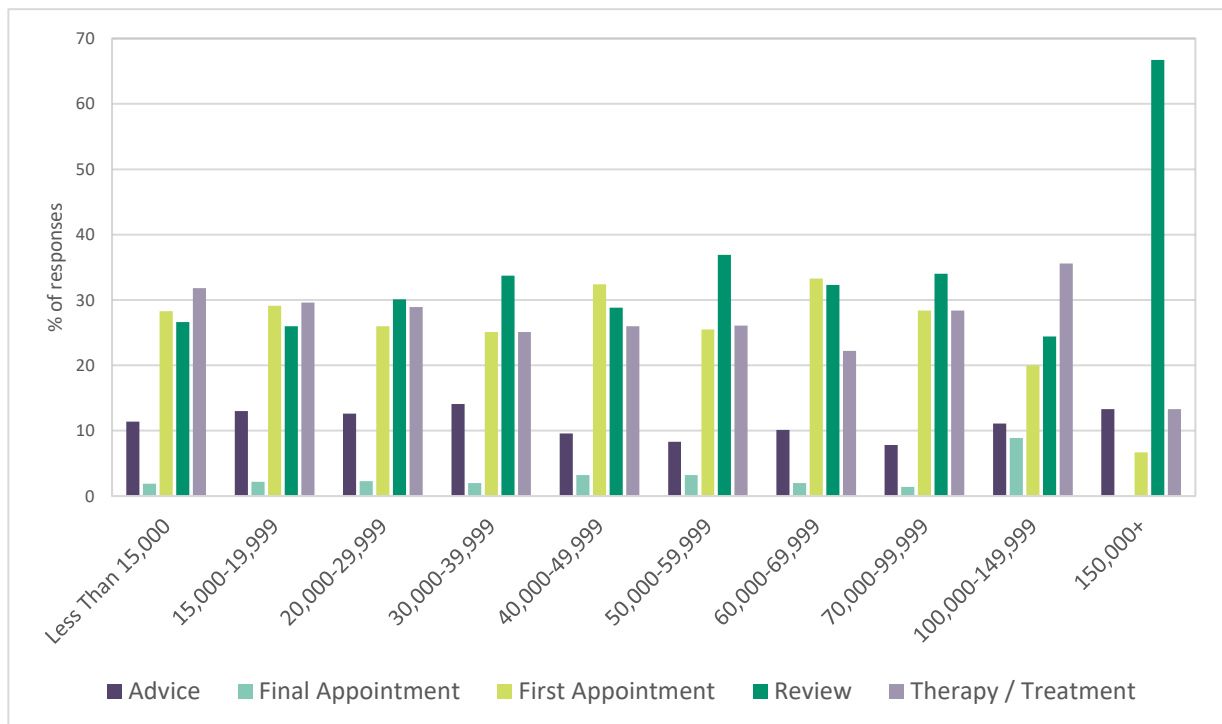
Figure 33. The percentage of patients that would (yes) or would not (no) use VC again in the future, as well as those who were unsure (maybe), per income group.



### Appointment Type:

The most common appointment types differed for the income groups (Figure 34). For example, reviews were most conducted for patients in the £20,000-£29,999, £50,000-£59,999, and £70,000-£99,999 income groups, and therapy/treatments for less than £15,000, £15,000-£19,999, and £100,000-£149,999

Figure 34. The percentage of appointment types conducted using VC across the income groups.

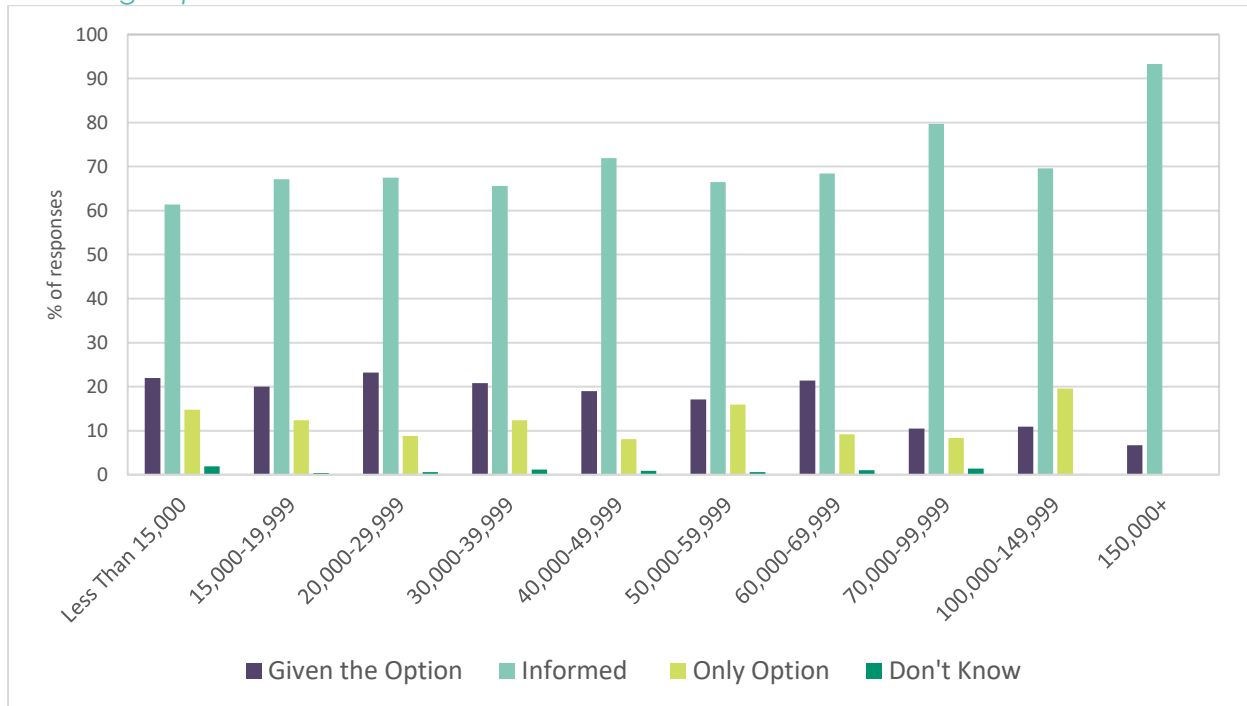




### Choice to use VC:

For all income groups, most (61.4% - 91.3%) patients stated that they were informed of the choice to use VC by their service (Figure 35).

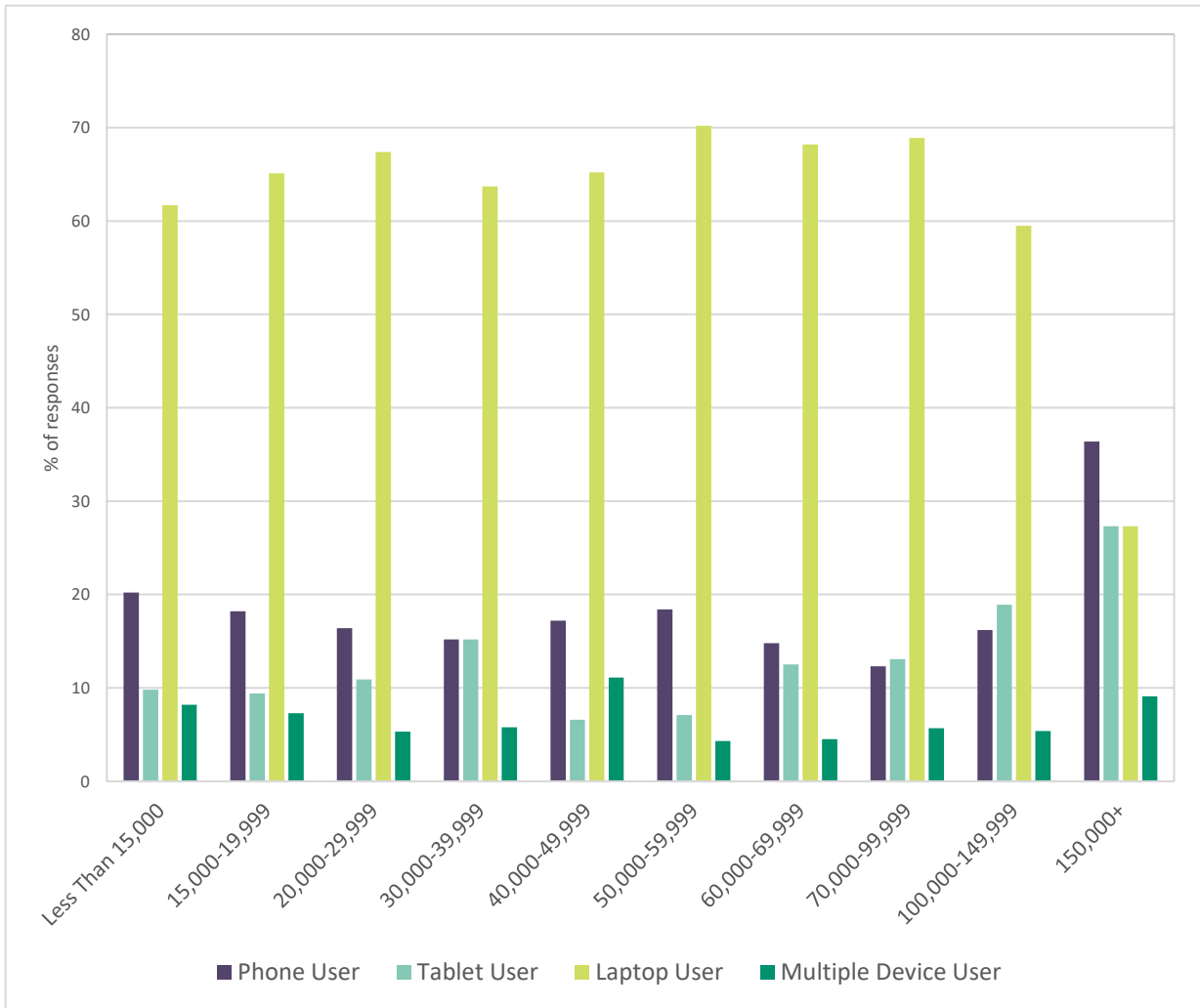
Figure 35. The percentage of responses given for whose choice it was to use VC per income group.



### Device Usage:

For all income groups, except once again £150,000 due to low group size, laptops were being used the most to participate in VC (Figure 36)

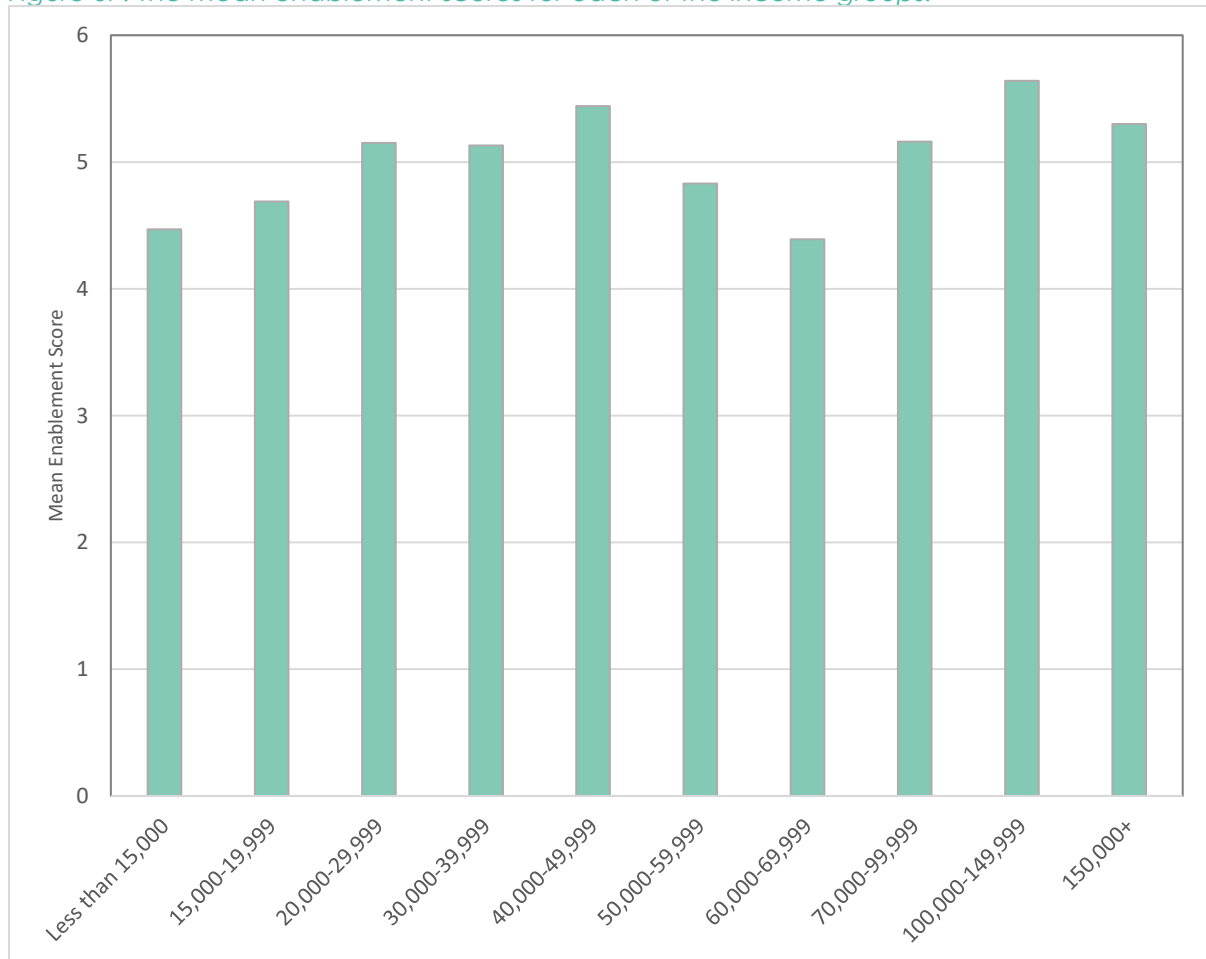
Figure 36. The percentage of devices used to conduct VC across the income groups.



### Enablement Scores:

Enablement scores for each income group are displayed in Figure 37. The highest mean score was for patients in the £100,000-£149,999 group, and the lowest mean score was the group £60,000-£69,999.

Figure 37. The mean enablement scores for each of the income groups.



## Conclusions

The Phase 2a evaluation suggests that regardless of age, gender, ethnicity, household income, disability or place (rural vs. urban) VC was used and valued by NHS Wales patients on an all-Wales basis. The current findings within this report support these conclusions in regards to VC being equally used and valued across sociodemographic and economic groups, with only slight differences between TEC Cymru data and the national data available.

When splitting the data across the 22 local authorities within Wales, there are slight under and over-representations of VC uptake. There was a higher amount of VC users in the more populated areas of Wales, such as Cardiff and Swansea. However there were some inconsistencies between the current TEC Cymru data and the national population data regarding over-representation of some local authorities (Cardiff Swansea, Monmouthshire, Neath Port Talbot, Pembrokeshire and Powys) and underrepresentation of others ((Bridgend, Isle of Anglesey, Conwy, Denbighshire, Gwynedd, Rhondda Cynon Taff, and Wrexham). In addition, when all local authorities are split up by age, gender, ethnicity, income and disability, the uptake of VC across the local authorities also vary by representation. For example, in Ceredigion, Conwy, Denbighshire, and Isle of Anglesey over 65 year olds were underrepresented in comparison to the Welsh Government national data. In the overall TEC Cymru data, there is a larger proportion of females than males using VC, however when split up by local authority, there are more males using VC in Bridgend, Isle of Anglesey and Merthyr Tydfil.

Furthermore, BAME groups across many local authorities were significantly underrepresented, with Isle of Anglesey, Blaenau Gwent, Conwy, Denbighshire, Flintshire, Gwynedd, Merthyr Tydfil and the Vale of Glamorgan having zero numbers of BAME VC users.

This reports displays the quality rating of VC, prevention of face-to-face, VC usage, appointment types, choice of appointments, device usage and patient enablement scores across measures of patient age, gender, ethnicity and income. The findings provide interesting differences regarding VC use and value across Welsh patients. For example, it is interesting to see that when considering quality rating, that regardless of age the ratings remain consistently high. This also remains similar for the prevention of a face-to-face appointment, previous use of VC as well as the wish to use VC again in the future. Despite this, 13-17 and 18-24 age groups tend to score slightly lower, suggesting that these age groups are the least satisfied compared to other age groups. In addition to this, 13-17 year olds also reported the lowest enablement scores, compared to 18-24 year olds reporting the highest.

For gender as a demographic, quality rating, prevention of face-to-face, previous VC use and the wish to use VC again in the future are fairly consistent for both males and females, with some variation in appointment types. For males, the most common appointment type was review appointments, and therapy/treatment for females. Interestingly, there were no significant differences in enablement scores.

For ethnicity, quality ratings were similar across ethnic groups although lower for black/African/Caribbean/Black British backgrounds. The prevention of face-to-face also differs amongst ethnic groups. For instance, prevention of face-to-face was reported highest amongst individuals of White Ethnic backgrounds and Mixed/Multiple ethnic groups, but lowest for Asian/Asian British and Black/African/Caribbean/Black British. Enablement scores were reported highest for 'other' ethnic groups and Asian/Asian British groups, and lowest for mixed/multiple ethnic groups.

For income, quality rating was relatively similar, yet the highest ratings came from individuals earning between £50,000 and £59,999 a year, whereas the most negative ratings were given by those earning between £100,000 and

£149,999. Interestingly, the highest income group (over 150k) reported the lowest face-to-face prevention, yet the highest VC usage (3 times or more), but also the group with the highest reluctance to use VC again. The highest mean score for patient enablement was for patients in the £100,000-£149,999 group, and the lowest mean score was the group £60,000-£69,999.

While slight differences are evident between the TEC Cymru data and national average population data presented, for example the percentage difference of males and females within each data set, and the underrepresentation of BAME populations in some areas, future tracking and evaluation of this data will ensure that the data remains as consistent as possible. TEC Cymru data being aligned with national average population data will inform and ensure that future VC use is representative of patients and clinicians across the whole of Wales.

## Owners & Authors of the Data

### Owners:

This Data Is the Ownership of Technology Enabled Care Cymru and their Funders The Welsh Government.

### Authors:

Gemma Johns, Jessica Williams, Sara Khalil, Mike Ogonovsky, & Professor Alka Ahuja.

The data was collected, analysed & written up by TEC Cymru's in-house Research & Evaluation Team.

## Referencing the Data:

When using the data as a source please reference the authors and main owner (TEC Cymru) of the data appropriately.

For example:

*Johns et al (Sept, 2021) Phase 2a TEC Cymru vs. National Population Data Comparative Analysis. The NHS Wales Video Consulting Service, Technology Enabled Care (TEC) Cymru. Cited at (add the website or other source that this document was retrieved, plus date retrieved)*

## Contact the Team:

If you have any questions regarding the data, analysis or write-up please contact the Research Lead at [Gemma.Johns3@wales.nhs.uk](mailto:Gemma.Johns3@wales.nhs.uk)

If you have any clinical queries regarding this dataset, please contact the National Clinical Lead at [Alka.Ahuja@wales.nhs.uk](mailto:Alka.Ahuja@wales.nhs.uk)

If you have any queries regarding the VC Programme, please contact the Programme Lead at [Sara.Khalil@wales.nhs.uk](mailto:Sara.Khalil@wales.nhs.uk)

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