



Childsmile (CS) Sustainable Travel Survey: A Retrospective View of Travel to CS Meetings

April 2023- March 2024

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Background

Prior to the COVID-19 pandemic, business as usual involved travelling around the country on a regular basis, via multiple modes of transport. We did this to meet up with our colleagues to discuss matters relating to the Childsmile (CS) programme implementation and delivery. As of 2019, and the arrival of the corona virus in the UK, we were forced to find new ways of communicating with one another that did not involve travelling or even being in the same room, in order to continue to network with our peers.

Post pandemic, and during the remobilisation of the programme, with a robust remote working infrastructure in place, meetings continued to take place virtually and travel became heavily reduced. This also coincided with a time of increased awareness around our impact on the environment and the introduction of more sustainable ways of working in line with our Programme Sustainability Aims; See <u>Our sustainability aims – Childsmile (nhs.scot)</u>. Travel, being one of these aims; to reduce our carbon footprint via the reduction in staff travel requirements, with the use of Microsoft Teams as the default option for all national meetings, working groups, training and CPD events. Transport is the largest emitting sector of greenhouse gas emissions (GHG), producing 26% of the UKs total emissions in 2021 according to Gov.UK Transport and Environment Statistics: 2023; <u>Transport and environment statistics: 2023 - GOV.UK (www.gov.uk)</u>

Greenhouse Gases (GHGs) and Carbon Emissions

Greenhouse gases (GHGs) are any gases in the Earth's atmosphere that absorb and re-emit heat. As the Earth warms and cools through its daily cycle, atmospheric gases trap heat from the sun similar to a roof on a greenhouse. Human activities, such as burning fossil fuels, are increasing the amount of GHGs in the atmosphere and thus changing the Earth's natural greenhouse gas effect. The more GHGs that are present, results in an increase in the amount of heat that is trapped by these gases, which in turn, increases the temperature of the Earth; which we know as global warming.

GHGs are made up of a number of different gases (7 in total as covered by the Kyoto Protocol¹). Carbon dioxide (CO_2) is the most common of these gases that is emitted by human activity and accounts for 81% of the impact from greenhouse gases in the UK. CO_2 is often misinterpreted as

¹.Kyoto Protocol; an international agreement that called for industrialised nations to significantly reduce their greenhouse gas emissions.

being representative of all GHGs, which when reported in this way can underestimate the total global warming impact. Rather, the term CO₂e or 'carbon dioxide equivalent' refers to the collective GHGs which is a measure of GHGs in kilograms (kg) of carbon dioxide equivalent and is a more accurate representation of the GHG unit which will be referred to throughout this report.

Childsmile: A Sustainable Future

As noted earlier, the CS programme has been looking at ways in which we can reduce our environmental impact by reducing the carbon emissions that we create whilst undertaking programme delivery. One way in which we can do this is by reducing the amount of (unnecessary) travel that we do in regards to our regular CS meetings. This has occurred organically as a result of the pandemic and the availability of accessible virtual platforms upon which we are able to communicate with each other.

By documenting travel activity prior to the introduction of virtual meetings, we can report on the number of kilometres (km) that we would have travelled or have *not* travelled, as well as the CO₂e that we would have produced or have *not* produced. This will allow us to report the positive impact that this behaviour change has had upon the environment in terms of a reduction in carbon emissions.

Methods

CS staff who attend national and regional meetings were asked to provide retrospective information on their travel activity for each meeting that they attended pre-pandemic.

29 staff completed the travel survey via Microsoft (MS) Forms either independently or with support from the regional research team (RRT). All staff provided information on their travel activity which included the following:

- Participant name;
- Meeting attended;
- Attended in-person or virtually;
- If in person: mode of travel; car (driver), car (Passenger): pool car use, train, taxi, bus, plane;
- Departure postcode and arrival postcode for each 'leg' of the journey (journey leg was determined by change in travel mode);
- If virtual: video conference (VC) activity and any related travel to VC site.

Staff reported their travel activity against nine meetings and eight different locations:

- Core (The Gyle, Edinburgh);
- Executive (Glasgow Dental Hospital);
- East Region Coordinators (ERC) (Comley Bank, Edinburgh);
- Early Years (Perth Royal Hospital);
- HIC Users Group (HUG) (Ninewells Hospital, Dundee);
- North Region Coordinators (NRC); two locations (Summerfield House, Aberdeen & Assynt House, Inverness);
- Resources Group (Waverley Gate, Edinburgh);
- Training Liaison Group (TLG) (Glasgow Dental Hospital);
- West Region Coordinators (WRC) (Glasgow Dental Hospital).

Minutes of previous meetings were consulted to ensure that we had included all relevant staff in the survey and also to report how many meetings that each individual had attended (albeit virtually) during the period April 2023-March 2024. This period was used as a benchmark to gauge the number of meetings that staff would likely have attended 'in-person' or via VC in a given calendar year.

Data Analysis/Assumptions

As the data was collected retrospectively; looking back at travel behaviours prior to the availability of accessible virtual meeting platforms; a number of assumptions were made when recording data received from respondents:

- For North Region Coordinator meetings, pre-pandemic, these took place across two locations on four occasions per year. Two meetings were held in-person and two were held via VC. Since the meeting minutes that were consulted were time-stamped for the previous calendar year (April 2023-March 2024), these meetings were held virtually and not as per the pre-pandemic/retrospective arrangements. Therefore, an assumption was made that where a participant attended more than two meetings in the period, a maximum of two meetings were recorded as in-person and the remainder as VC. If a participant attended only two meetings, these were split between in-person and VC. These two models of attendance were also split across the two meeting locations.
- Where a participant's base was also the location of the meeting, we assumed no travel had taken place over and above travel to their usual place of work and no data was recorded.

- Respondents only provided their home postcode where this was the starting destination for their journey. Data on distance from home to usual work base was not routinely collected and therefore was not discounted from journey distances.
- Where a respondent reported a town for departure location (home address) rather than a postcode, we assumed the first postcode for the given town as the departure location.
- Where a participant reported being a passenger in a pool car we did not include this data in the analysis as we assumed that the travel information for the driver of the pool car was recorded.
- Where a respondent was unable to recall or was unsure about mode of travel for an additional leg of a journey (where the attendee had used public transport) we assumed that the respondent had taken the most reasonable form of transport for the situation/location e.g. taxi from train station to meeting location.
- Where an attendee reported taking the subway but had not reported in which direction on a circular route, we assumed the shortest direction/journey was taken.
- Where a respondent reported that they may have travelled in different ways on separate occasions to the same meeting location, we allocated a different travel model to each meeting occasion e.g. they may have travelled by car on one occasion and then for the next meeting they may have used public transport.

Mileage Calculators

Departure and arrival postcode information received from respondents was used to calculate kilometres (km) travelled. For each mode of travel, a separate mileage calculator was used as follows:

- Car, taxi and bus: The AA Route Planner: <u>Route Planner | Directions, traffic and maps |</u> <u>AA (theaa.com)</u>. Where multiple routes were possible, the top most suggested route was the assumed route and mileage undertaken;
- Train: Railmiles Mileage Engine: <u>RailMiles</u>. Train miles between railway stations were recorded in miles and chains. A chain 'Ch' is a unit of length equal to 66 feet/22 yards and there are 80 chains in one mile;
- Subway: The Railway Data Center: Glasgow Subway Mileage Search: <u>The Railway Data</u> <u>Centre | Glasgow Subway Mileage Search</u>. The travelling direction relating to the shortest route was assumed;

• Plane: Air Miles Calculator: <u>Air Miles Calculator</u>.

Conversion Factors

Once miles per journey leg were established, this was then converted to kilometres (km) by multiplying miles travelled by 1.6.

This km data was then converted into equivalent carbon emissions (kg of CO₂e) data using UK Government greenhouse gas reporting conversion factors: *'ghg conversion factors 2023 condensed set: updated 28th June 2023;* <u>Greenhouse gas reporting: conversion factors 2023 - GOV.UK (www.gov.uk)</u>.

A number of assumptions were made with regards to the kind of vehicles used for travel to meetings when choosing the appropriate conversion factor for each transport modality:

- Car: It was assumed that passenger vehicle fuel type was 'unknown' and that the car size was 'average' for each car driver [See <u>Greenhouse gas reporting: conversion factors</u> 2023 GOV.UK (www.gov.uk); Scope 3: Business Travel/Land tab, Column X, Row 53 for use of own vehicle. For use of organization vehicle refer to Scope 1; Passenger vehicle tab, Column X Row 54- [currently same conversion factor as used in Scope 3 above];
- Taxi: assumption made that passengers travelled in a 'regular' taxi as oppose to a 'black cab' (passenger unit selected) [See <u>Greenhouse gas reporting: conversion factors 2023 -</u> <u>GOV.UK (www.gov.uk)</u>; Business Travel/Land tab, Column D, Row 71];
- Bus: It was assumed that passengers travelled on an 'average local bus' as opposed to a 'local bus' or a 'London bus' [See <u>Greenhouse gas reporting: conversion factors 2023 -</u> <u>GOV.UK (www.gov.uk)</u>; Business Travel/Land tab, Column D, Row 81];
- Train: it was assumed that the passenger travelled on the 'national rail' network as opposed to 'international', 'light rail', 'tram' or 'underground' [See <u>Greenhouse gas</u> <u>reporting: conversion factors 2023 - GOV.UK (www.gov.uk)</u>; Business Travel/Land tab, Column D, Row 87];
- Subway: It was assumed that the 'London Underground' conversion factor would be most relevant for the Glasgow Subway [See <u>Greenhouse gas reporting: conversion</u> <u>factors 2023 - GOV.UK (www.gov.uk)</u>; Business Travel/Land tab, Column D, Row 90];
- Plane: Assumption that 'average passenger on domestic flight to/from UK' [See <u>Greenhouse gas reporting: conversion factors 2023 - GOV.UK (www.gov.uk)</u>; Business Travel/Air tab, Column E, Row 23];

Results

Meetings Attended

29 staff attended nine different meeting types. These meetings were based at eight different locations and a total of 40 meetings took place in the period April 2023-March 2024. Of these 40 meetings, there were 77 members collectively.

Table 1 below shows that there were 257 meeting opportunities between April 2023 and March 2024 (see also Appendix 1). On 212 occasions (82% of the time), staff attended 'in-person' or travelled to VC (1 occasion). Of these 212 occasions, meetings were held at the same location as a staff members' office base/usual place of work 8% of the time and therefore no associated travel was recorded. There was eight occasions (3.7% of the time) when attendees opted to carshare and these instances of travel were also discounted from the data. For 18% of meetings, members opted to attend meetings remotely which meant that all in all, there were 186 actual instances of travel to meeting locations or VC locations.

A	Collective number of times each meeting was held	40
В	Collective number of members of all meetings	77
С	Maximum potential meeting instances : Total Sum (AxB) for each meeting type	257
D	Number of meeting instances held at same base/office location as members	18
E	Number of occasions members opted to VC (no travel)	45
F	Number of occasions members chose to car share	8
G	Actual instances of travel to meeting location/VC location : C- (D+E+F)	186

Table 1: Meeting activity

Transport Use (frequency and mode of travel)

82% of all meeting opportunities resulted in associated travel. Table 2 below shows the number of times each mode of transport was used to travel to in-person meetings and/or to VC locations.

Mode of Transport	Number of Occasions
Car (Driver) + other transport modes	178
Car (Driver) sole transportation mode	121
Car + Train	55
Car + Plane	3
Car + Bus	3
Car Passenger	8
Train sole transportation mode	12
Taxi + other transport modes	7
Bus + other transport modes (without car)	1
Subway + other transport modes	1
Plane + other transport modes (without car)	1

Table 2: Transport options and frequency of use

Note; an individual could use multiple transport modes in one journey; each mode of transport was only counted once for each return trip e.g. if an individual took 2 separate trains, this was counted as one use of this mode of transport within a return journey.

Travelling by car was by far the most favoured option for travel to meetings. For meetings that took place in-person, or where travel to VC was required, 96% of these involved travel by car and 68% of the time, meetings were attended by car alone (no other transport used). Two respondents reported that they travelled to meetings as a *passenger in a car* on eight occasions.

Travel by taxi was always reported alongside another mode of transport and would likely coincide with plane, train or bus travel.

Attendees took the train as well as the car on 55 occasions (30% of meetings attended), and the train was the sole mode of transport for 6% of the time. **Subway** was the least used mode of transport with reported use on one occasion for travel to access virtual meeting platforms.

Plane travel was reported to be used on three separate occasions and involved travel from island boards to mainland Scotland.

Bus travel was reported to have taken place on three occasions and was never the sole mode of travel to or from a meeting. A bus was usually taken alongside a plane, a car or a taxi.

Table 3: Number of occasions of travel mode chosen by meeting type

Meeting Type	Instances of car travel~	Instances of train Travel	Instances of Taxi travel	Instances of Bus Travel	Instances of Plane Travel
Core	11	6	0	2.0	0.0
Early Years	20	1	0	0.0	0.0
ERC	29	4	4	0.0	0.0
Executive	27	10	0	0.0	0.0
HIC	26	0	0	0.0	0.0
NRC	15	2	2	1.0	3.0
Resources	22	30	0	0.0	0.0
TLG	12	8	0	0.0	0.0
WRC	16	6	0	0.0	0.0
Totals	178	67	6	3.0	3.0

Table 3 above represents the number of travel occurrences for each meeting that took place between April 2023 and March 2024.

As noted above, 'car' was the most preferred mode of transport for the majority of meetings. Minimal car sharing took place, with only eight occurrences across two meeting locations. Train was the more preferable choice of transport where the meetings were located in the centre of a city such as attending the Resources group meeting in Edinburgh or the Training Liaison Group (TLG) meeting in Glasgow. The North Region Coordinators (NRC) meeting had fewer instances of travel as this was the only meeting that was attended more frequently by VC than 'in person' prior to the pandemic. This is assumed to be the case due to the geography of the north region and the distance in dispersal of staff covering this region of the programme, thus making it more challenging to meet 'in person'.

Transport Use (distance travelled)

Table 4: Distance travelled by each transport modality for all members attending each meeting type; either in person or via VC (with associated travel)

		Train km (includes			
Meeting Type	Car km	subway use x1)	Taxi km	Bus km	Plane km
Core	1769	595.5	0.0	83.2	0.0
Early Years	2688	75.6	0.0	0.0	0.0
ERC	2765.4	409.8	20.5	0.0	0.0
Executive	2417.9	368	0.0	0.0	0.0
HIC	3665	0	0.0	0.0	0.0
NRC	2994.2	679.7	61.4	22.1	1337.6
Resources	270.7	3598.9	0.0	0.0	0.0
TLG	116.5	1377.8	0.0	0.0	0.0
WRC	993.6	408.8	0.0	0.0	0.0
Totals	17680.3	7514.1	81.9	105.3	1337.6

Table 4 above shows the total number of kilometres (km) travelled by each mode of transport taken when attending meetings 'in person' or attending VC facilities. The data is representative of travel both to and from meeting location.

As expected, travel by car contributed to the furthest distance travelled with more than 17 thousand kilometres covered in attending all meeting locations. Plane travel was less frequently used and was for relatively short distances e.g. from islands to mainland Scotland. Similarly, bus, taxi and subway modes were taken infrequently and usually for the shortest 'leg' of the entire journey.

The 'assumed' distance (km) travelled by car during the period April 2023-March 2024 is **17,680 km**. This is the distance that would have been travelled had individuals continued with the same prepandemic travel behaviours. This distance *NOT* travelled is the equivalent distance of travelling half way around the world from Edinburgh to Sydney in Australia (approx 17,000km).





Figure 1: Total km NOT travelled across all transport modes in attendance of all meeting occasions by type during April 2023- March 2024

Figure 1 above represents the distance in kilometres that would have been travelled by all chosen travel modes in attendance of each type of meeting during the previous year, had the programme not opted to adopt more sustainable ways of meeting.

The North Region Coordinators (NRC) would have attracted the greatest amount of travel even with the pre-pandemic model of half of the meetings being attended via VC platforms.

The West Region Coordinators (WRC) meeting perhaps didn't attract as much travel due to the meeting location being the usual place of work for two of the attendees.

Aside from the Executive meeting, the Training Liaison Group (TLG) had fewer members and met on only four occasions in the time period.

One meeting of the West Region Coordinators (WRC) was cancelled during this period and hence the group met on only three occasions.

The total 'assumed' distance (km) travelled by all six modes of transport in attendance of 'in person' meetings or to VC locations during April 2023-March 2024 was **26,719 Km.** This distance *NOT* travelled is the equivalent of driving from the 1823 Magnetic North Pole to the South Pole, through the Americas (some 27,000km). A trip which has been recently completed in an electric SUV by pole to pole explorers.



*Kg/CO*₂*e* associated with travel

Meeting Type	Instances of travel*	Car kg/CO₂e	Train ² kg/CO₂e	Taxi kg/CO₂e	Bus kg/CO₂e	Plane kg/CO₂e
Core	13	294.8	21.1	0.0	8.5	0.0
Early						
Years	25	447.9	2.7	0.0	0.0	0.0
ERC	41	460.8	14.5	3.0	0.0	0.0
Executive	27	402.9	13.1	0.0	0.0	0.0
HIC	34	610.7	0	0.0	0.0	0.0
NRC	40	499	24.1	9.1	2.3	364.6
Resources	30	45.1	127.6	0.0	0.0	0.0
TLG	16	19.4	48.9	0.0	0.0	0.0
WRC	19	165.6	14.5	0.0	0.0	0.0
Totals	245	2946.2	266.5	12.1	10.8	364.6

Table 5: kg/CO_2e produced by each chosen travel mode attending all meeting occasions associated with each meeting type during the period April 2023-March 2024

As anticipated, with travel by car being the most favoured mode of travel and with its use on 178 occasions, car travel emitted the greatest amount of equivalent carbon emissions (82% of total emissions). Plane travel made up 10 % of the spent C02e and train travel 7% whilst taxi, bus and subway contributed to 1% collectively.



² Includes subway use x1 at 0.2kg/CO₂e





Figure 2 above demonstrates the amount in kilograms of carbon equivalent gases that were NOT expended into the air, due to the introduction of sustainable travel measures by the Childsmile programme during the last year.

Again, as with distance travelled, had the North Region Coordinators Group (NRC) met as per the pre-pandemic arrangements (two meetings via VC and two meetings in person) this would still have created the largest amount of carbon equivalent emissions than any of the other meetings due to the geography of the north region and the distance required to travel. Also, as with the HIC User group (HUG), these two meeting types had the largest number of members (12 members) attending meetings.

The HUG meeting would have come a close second in terms of equivalent carbon expended due again to the large number of members of this group but also as a result of the meeting location not being as easily accessible by public transport. This was the only meeting type where all attendees travelled by car, albeit there were four occasions when car sharing took place.

As noted previously, with the exception of the Executive group, the Training Liaison Group (TLG) has the fewest amount of members attending each meeting, this and along with the location lending itself more readily to public transport use, significantly reduced the amount of carbon equivalent emissions that would be expended if this meeting was to occur 'in person'.

By choosing to work remotely and meet virtually, we have reduced our environmental impact by *not expending* a total of **3600kg** of equivalent carbon emissions.

This is the equivalent weight of **seven average sized** (500kg) **male polar bears** one of the most vulnerable animals at risk of extinction due to climate change.



Recommendations

Based on the findings and assumptions made following review of respondents retrospective travel activity, we would suggest the following recommendations where any future meetings are held 'in-person' and thus require associated travel:

- 1. Set the quorum for each meeting to the minimum and keep meetings invites to the quorum only.
- 2. Choose a meeting location which is also the usual base/place of work of the greatest number of people attending. This will minimise the number of people travelling;
- Where the above is not possible, choose a location e.g. (inner city) which is readily
 accessible by public transport and less likely to involve travel by car for the longest leg of
 the journey;
- 4. Consider a location that minimises the distance travelled by car for all members and is central to all member bases;
- 5. Try to use pool cars more often and with more passengers;
- 6. Consider hybrid meetings where those with furthest to travel can attend via VC, as was the case in the North region.
- 7. Where possible continue to use virtual platforms to conduct meetings.

There are elements of travel that are necessary and unavoidable within the programme e.g.to deliver interventions in schools as part of the Toothbrushing and Nursery & School programmes and also in homes as part of the Community and Practice programme. However a number of considerations can be made to reduce the instances of travel when delivering these programmes;

1. The number of instances in which travel is made to the same establishment could be reduced by aiming to carry out a number of tasks during the same visit; e.g. deliver resources/collect toothbrushes at the same time as a monitoring visit or carrying out any oral health education at the same time as a fluoride varnish visit. Where doubling up on activity during the same visit can be achieved, this will half the number of times that a team are required to visit an establishment and therefore reduce instances of travel/ carbon emissions.

- Similarly, with the Community and Practice programme, where visits to family homes are not essential and families are regular attendees at vaccine clinics or health visitor (HV) clinics, many families could be reached via one instance of travel.
- 3. Where visits to family homes are the only way to reach a family, consider on how many occasions that these visits are carried out if the family are unreachable, perhaps consideration to attending alongside the HV team may be an option for those staff that work alongside the HV.
- 4. Consider staff location/base and their assignment to teams and locations of establishments in order to minimise travel.

Conclusion

The COVID-19 pandemic has to some extent challenged the need for travel for business needs. This, along with the increasing awareness of the need to create a more sustainable world has given individuals cause to review their thinking and actions in relation to business operations.

As noted previously, the Childsmile programme adopted new, virtual ways of working during the pandemic and have continued to use virtual platforms to replace face to face contact in many cases as part of our sustainability aims. This reduction of 'in person' meetings has reduced the amount of travel associated with programme decision making and in turn has positively affected the environment through a significant reduction in carbon equivalent emissions.

We are aware that reduction in business travel poses different opportunities and risks and that not all meetings can be free of travel hence the reason for the recommendations above. However, where meetings can continue virtually, a number of advantages can be noted, including:

- Saves time and money;
- Requires no travel;
- Brings remote workers together;
- Improves relationships.
- More personal and engaging than teleconferencing;
- Increased efficiency and productivity;
- Cuts down on carbon emissions.



Appendix 1: Meeting Data

Meeting Type	Core	Early Years	ERC	Exec	HUG	NRC	Resources	TLG	WRC
No. Meets held 23-24	2	5	4	10	4	4	4	4	3*
No. Members	8	7	11	3	12	12	8	5	11
Max no. potential meeting instances	16	35	44	30	48	48	32	20	33
Actual no. Meeting instances	13	25	41	27	34	40	30	16	31
Meeting location = office base	0	0	2	3^	0	0	0	4	2
Reduction in potential travel opps due to base/location	0	0	-8	0	0	0	0	-4	-6
VC occasions	0	-5	0	0	-4	-24	0	-3	-9
No. times travel to VC	0	0	0	0	0	1	0	0	0
Car share occasions	0	0	-4	0	-4	0	0	0	0
Actual travel occurrences in person/travel to VC	13	20	29	27	26	16	30	9	16
Preferred transport (furthest leg)	Car	Car	Car	Car	Car	Car	Train	Train	Car

*Fourth meeting of the WRC was cancelled

^assumed that members worked at alternative base/ worked to a hybrid model and would travel to the office was an exception for these meetings. Therefore did not discount staff on this basis.