

Harder Populations, Higher Bar — Paediatric and Vulnerable Participants

A cross-cutting reading of the series — the perimeters do not change, but the evidence each one demands rises, and every rise has a rule behind it

Prepared for	Sponsor, eCOA / ePRO vendor, human-factors function, ethics / IRB, sites and the data-protection function.
Subject	How DHT obligations intensify with paediatric and vulnerable participants — a cross-cutting reading of the series.
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Executive summary

The answer. A DHT design validated in general adult participants cannot be carried across to children or to adults lacking capacity without adding evidence at every perimeter at once — usability, consent, data protection and data quality. The population is a multiplier, not a footnote.

Where the bar rises, and on whose authority. The consent model is rebuilt by age and capacity band, and it differs by jurisdiction: in the EU the legally designated representative consents, the minor takes part in the procedure, an explicit refusal is respected and consent is taken again on reaching legal competence; in the US the parent or guardian gives permission and the child assents where the IRB judges them capable.¹ Children's data attract additional conditions and safeguards — though every trial's health data are already special-category, for every participant.² And a measure validated in healthy adults has to be re-validated in the population that will actually generate the data.³

What to do. Settle these additions in the design, not at submission: the cost of discovering the gap at ethics review — or in data that cannot be analyzed — is, in qointa's experience, far higher than designing for it up front.

¹ Regulation (EU) 536/2014 Arts 31 (incapacitated participants) and 32 (minors), incl. 32(1)(a)–(c), 32(2) and 32(3) (re-consent on reaching legal competence). US: 21 CFR 50 subpart D — parental permission at 50.55(e) and the child's assent at 50.55(a), which is not a necessary condition in the circumstances of 50.55(c). ICH E6(R3) 2.8: assent as appropriate and in accordance with local regulatory requirements. Assent as such is left to national law in the EU.

² GDPR Recital 38 (children merit specific protection); Art. 9(1) (data concerning health are a special category, for all participants); Art. 8 conditions consent-based processing by information-society services offered directly to a child, which will rarely be the operative rule in a trial (EDPB Opinion 3/2019); Art. 35 (data protection impact assessment). US: Children's Online Privacy Protection Rule as amended, 90 FR 16902 (22 April 2025), effective 23 June 2025, compliance date 22 April 2026, for children under 13. UK: ICO Age Appropriate Design Code (Children's Code), in force 2 September 2020 with a transition period to 2 September 2021, applying to online services likely to be accessed by under-18s.

³ ICH E11(R1) addendum (EMA/CPMP/ICH/2711/1999, published 6 October 2017, effective 28 February 2018), read with ICH E11A on paediatric extrapolation (EMA/CHMP/ICH/205218/2022, published 27 August 2024, effective 25 January 2025). FDA, Digital Health Technologies for Remote Data Acquisition in Clinical Investigations (final, December 2023), s.III: verification and validation should reflect the population and context of use.

The perimeters do not change — the evidence each one demands does, and every rise has a rule behind it

What a design validated in general adult participants has to add before it is used with children or adults lacking capacity.

Perimeter	General adult baseline	What has to be added	The rule behind it
Human factors QPP-09	Usability validated in a typical adult population.	Validation for reduced vision, dexterity, literacy or developmental stage — and for the carer, who is now a user of the system.	IEC 62366-1:2015+A1:2020 where the app is a medical device; otherwise good human-factors practice, FDA DHT guidance (Dec 2023): verification and validation reflect the population and context of use.
Consent QPP-11	Informed consent from the participant.	A consent model built by age and capacity band — and it differs by jurisdiction, so one architecture will not serve a global study.	EU: CTR Arts 31–32 — consent of the legally designated representative, age-adapted information, the minor's explicit refusal respected, re-consent on reaching legal competence. US: 21 CFR 312.60 subpart D — parental permission (50.55(e)) plus the child's assent where the IRB judges them capable (50.55(a)), not required in the circumstances of 50.55(c). ICH E6(R3) 2.8: assent as appropriate and per local requirements.
Data protection QPP-02	Special-category health data — for every participant, not only these.	Additional conditions and safeguards for children's data, and a DPIA. There is no "heightened lawful basis" in the GDPR.	GDPR Recital 38 (children merit specific protection); Art. 9(1) (all trial health data are special-category); Art. 8 conditions consent-based processing by information-society services only. US: COPPA Rule as amended (effective 23 June 2025, compliance 22 April 2026) for under-13s. UK: ICO Children's Code (in force 2 Sept 2020, transition to 2 Sept 2021).
Endpoint validation QPP-01	Measures validated in healthy adults.	Re-validation in the actual population — and, for children, a design that holds as growth and maturation change the signal, the device fit and the ability to self-report.	ICH E11(R1) addendum (EMA/CPMP/ICH/2711/1999) with ICH E11A on paediatric extrapolation (EMA/CHMP/ICH/205218/2022, published 27 Aug 2024, effective 25 Jan 2025). FDA DHT guidance (Dec 2023), s.III.
Data integrity QPP-10	Participant self-entry.	An attribution model for carer and proxy entry: who acted, recorded in the audit trail, and on whose authority.	EMA, Guideline on computerised systems and electronic data in clinical trials (EMA/INS/GCP/112288/2023) — attribution and audit-trail requirements; Annex 5 for participants' own devices.

The population is a multiplier, not a footnote

Vulnerability raises usability, consent, data protection and data quality at the same time — and the participants who struggle most with the interface are the ones whose data is most likely to be missing. Same perimeters, more evidence.

A design validated in general adult participants cannot be carried across unchanged; each perimeter has a named addition and a named rule.

Illustrative composite — not a specific study. Requirements for these populations are jurisdiction- and ethics-committee-specific; this figure sets out qointa's reading of published sources.

Figure 1 — The perimeters do not change; the evidence each one demands does, and every rise has a rule behind it. Illustrative composite — not a specific study.

1. The perimeters are unchanged; what each demands in evidence is not

This is a cross-cutting edition of qointa's position-paper series, read through the participants for whom a standard design fails: children, older adults, people with cognitive or physical impairment, and others in vulnerable circumstances. **The series' perimeters do not change for these populations — but the evidence each one demands rises, sometimes sharply.** This edition gathers those intensifications in one place, with the rule behind each.

It is addressed to the sponsor, the eCOA / ePRO vendor, the human-factors function, the ethics committee or IRB, the sites and the data-protection function.

Who counts as a vulnerable participant is defined in ICH E6(R3), and is wider than this paper's examples: it reaches subordinate members of a hierarchy, people in institutional care, and those unable to consent. Age is not, by itself, the test — capacity is.

How this fits the full framework

This edition reads across the series through one lens: the participants hardest to serve well. The perimeters are unchanged; the bar rises. The ties that intensify most are:

- **QPP-09 — Human Factors.** Where use-error concentrates: usability must hold for the hardest users, and often a carer.
- **QPP-11 — eConsent.** The consent model by age and capacity band: representative consent, assent where it applies, comprehension safeguards, and re-consent when a minor reaches legal competence.
- **QPP-02 — Data Residency and Cross-Border Transfer.** Where the data go once they leave the device — read with the additional conditions and safeguards that apply to children's data.
- **QPP-01 — Endpoint Validation.** Measures validated in healthy adults may not transfer to the target population.
- **QPP-10 — Data Integrity.** Carer or proxy entry raises the attribution and audit-trail questions the standard model does not face.
- **Stakeholder Edition S12 — IRB / Ethics Committee.** Where the additional safeguards are reviewed and tested, and what a committee can require. There is no Ethics / IRB paper in the numbered series.
- **QPP-17 — Representativeness and Equitable Access, and QPP-22 — Continuous Monitoring, Consent and Participant Burden.** Who a DHT design excludes, and what continuous collection asks of a participant who is already carrying more.

Regulatory basis

This edition summarizes the position set out in QPP-01 — Endpoint Validation, QPP-02 — Data Residency and Cross-Border Transfer, QPP-09 — Human Factors, QPP-10 — Device-Side Data Integrity and QPP-11 — eConsent; the sources are cited there in full. The load-bearing sources for the paediatric and vulnerable-participant position are:

- Regulation (EU) 536/2014 — Art. 31 (incapacitated participants), Art. 32 (minors: consent of the legally designated representative, age-adapted information, explicit refusal respected, re-consent at 32(3)), Art. 10 (specific considerations for vulnerable populations).
- 21 CFR 50 subpart D (50.50–50.56) — parental permission (50.55(e)) and the child's assent (50.55(a), with the exceptions at 50.55(c)); 21 CFR 56.111(b) — additional safeguards for vulnerable participants.
- ICH E6(R3) Principles and Annex 1 (Step 4, 6 January 2025; EU effective 23 July 2025) — the definition of vulnerable participants, s.2.8 informed consent and assent, and IRB/IEC review of assent materials.
- ICH E11(R1) addendum (EMA/CPMP/ICH/2711/1999; published 6 October 2017, effective 28 February 2018) with ICH E11A, paediatric extrapolation (EMA/CHMP/ICH/205218/2022; published 27 August 2024, effective 25 January 2025).
- Regulation (EU) 2016/679 (GDPR) — Recital 38, Art. 8, Art. 9(1), Art. 35 (data protection impact assessment); EDPB, Opinion 3/2019 on the interplay between the Clinical Trials Regulation and the GDPR (23 January 2019).
- US: Children's Online Privacy Protection Rule as amended, 90 FR 16902 (22 April 2025) — effective 23 June 2025, compliance date 22 April 2026; applies to children under 13. Its application to a non-commercial research context is fact-specific.
- UK: ICO Age Appropriate Design Code (the Children's Code) — in force 2 September 2020 with a transition period to 2 September 2021; applies to online services and apps likely to be accessed by children.
- FDA, Digital Health Technologies for Remote Data Acquisition in Clinical Investigations (final, December 2023), s.III; EMA, Guideline on computerised systems and electronic data in clinical trials (EMA/INS/GCP/112288/2023) for attribution and audit trail.

This edition describes qointa's reading of these published sources. Requirements for these populations are jurisdiction- and ethics-committee-specific.

2. Vulnerability raises four obligations at once, and the consent rule differs by jurisdiction

- **The population is a multiplier, not a footnote.** Vulnerability raises the obligation across usability, consent, data protection and data quality at once.
- **Consent is rebuilt by age and capacity band, and it differs by jurisdiction.** In the EU the legally designated representative consents, the minor takes part in the procedure, an explicit refusal is respected, and consent is taken again on reaching legal competence; in the US the parent or guardian gives permission and the child assents where the IRB judges them capable — assent is not required in every case.
- **Children's data attract additional conditions and safeguards.** Health data are special-category for every participant; what is specific here is the requirement for additional protection, a data protection impact assessment, and — outside the EU — COPPA in the US and the ICO Children's Code in the UK.

- **Use-error concentrates where the design fits worst.** In qointa's assessment, the participants who struggle most with the interface are the ones whose data goes missing — which is why the usability evidence has to come from the target population, not a healthy-adult proxy.

3. Each perimeter has a named addition and a named rule behind it

Each perimeter is unchanged in kind and raised in degree. The fourth column names the evidence the intensification actually requires; the rule behind each is set out in Figure 1 and in the Regulatory basis box.

Perimeter	How it intensifies	Paper	Practical implication / evidence needed
Human factors	Usability must be validated for reduced vision, dexterity, literacy or developmental stage — and often a carer.	9	Usability studies in the target population (and with carers), not a healthy-adult proxy.
Consent	Representative consent (EU) or parental permission (US), assent where the rules require it, and comprehension safeguards.	11	A consent model by age and capacity band — representative consent, assent where it applies, comprehension checks, and re-consent on reaching legal competence (CTR Art. 32(3)).
Data protection and privacy	Children's data require additional conditions and safeguards; health data are special-category for every participant.	2	A lawful-basis and safeguards assessment specific to children's data, with a DPIA (GDPR Art. 35); COPPA and the ICO Children's Code where they apply.
Endpoint validation	Measures validated in healthy adults may not hold in the target population.	1	Analytical and clinical re-validation in the actual population, and a design that holds as growth and maturation change the signal (ICH E11(R1) / E11A).
Data integrity	Carer-assisted or proxy entry raises attribution and audit-trail questions.	10	An attribution model for proxy entry: who acted, recorded in the audit trail.

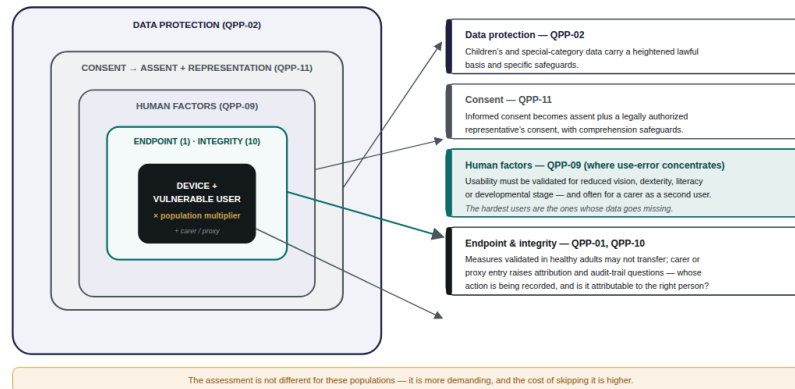
Figure 2 — One device, several perimeters — with a population multiplier

The same nested perimeters apply — data protection (QPP-02), consent (QPP-11), human factors (QPP-09), endpoint and integrity (QPP-01, QPP-10) — but a vulnerable population at the core multiplies the evidence each one demands, and adds a carer or proxy as a second user. Human factors is highlighted because that is where use-error concentrates: the hardest users are the ones whose data goes missing. The assessment is not different for these populations — it is more demanding.

Interactive / scalable SVG

Figure 2 — One device, several perimeters — with a population multiplier

The same perimeters apply; a vulnerable population multiplies the evidence each one demands



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Companion edition — not legal or ethics advice; requirements are jurisdiction- and ethics-committee-specific.

Figure 2 — The same perimeters, with a population multiplier: human factors is where use-error and missing data concentrate. Illustrative composite — not a specific study.

4. A carer or proxy in the loop breaks the attribution model the standard design rests on

A third party in the loop — a parent, carer or representative operating the device or entering data — breaks an assumption the standard design rests on: that the person who acted is the participant.

The carer and proxy problem

Vulnerable-population designs frequently involve a third party — a parent, carer or representative — in operating the device or entering data. That introduces a question the standard model does not face: **whose action is being recorded, and is it attributable to the right person?**

Proxy and carer-assisted entry must be designed for, not improvised, because it touches **consent** (who authorized it), **data integrity** (who is attributable), and **usability** (the carer is now a user too).

5. The assessment is not different for these populations — it is more demanding

The practical implication is that **a design validated for a general adult population cannot simply be pointed at a vulnerable one**. The same perimeters apply, but the evidence each requires is greater, the consent architecture is more complex, and the data-quality risk is concentrated exactly where the science most needs reliable data.

The assessment the series describes is not different for these populations — it is more demanding, and the consequence of skipping it lands where the science can least afford it. The checklist below is where a study team starts.

Vulnerable-population design checklist

Six things to settle before a design built for general adult participants is used with a vulnerable population (Figures 1 and 2):

- **Usability in the target population.** Formative and summative testing with the actual users, including carers.
- **Consent model by age and capacity band.** Representative consent or parental permission, assent where required, comprehension safeguards, and re-consent on reaching legal competence.
- **Children's-data plan.** Lawful basis, additional safeguards and a DPIA; COPPA and the ICO Children's Code where they apply (QPP-02 — Data Residency and Cross-Border Transfer).
- **Population-specific endpoint evidence.** Re-validate measures in the target group rather than assuming transfer.
- **Proxy attribution model.** A designed answer to who acted, recorded in the audit trail (QPP-10).
- **Early ethics engagement.** Bring the additional safeguards to the committee in the design phase, not at submission (Stakeholder Edition S12 — IRB / Ethics Committee).

6. Five moves turn the higher bar into a design a committee can approve

Five moves turn the higher bar into a design an ethics committee can approve and the data can survive.

- **Test usability with the real users** — the target population and their carers, not a healthy-adult stand-in (QPP-09).
- **Build the consent model by capacity band** — representative consent or parental permission, assent where required, comprehension safeguards, and re-consent on reaching legal competence (QPP-11 — eConsent).
- **Settle the children's-data plan up front** — lawful basis, additional safeguards, a DPIA, and COPPA or the ICO Children's Code where they apply (QPP-02 — Data Residency and Cross-Border Transfer).
- **Re-validate endpoints in the population** — do not assume a healthy-adult measure transfers (QPP-01).

- **Bring the additional safeguards to the committee early** — surface the usability, consent and attribution plans in the design phase, not at submission (Stakeholder Edition S12 — IRB / Ethics Committee).

Contact qointa

To design a DHT study that holds for paediatric and vulnerable participants — usability, consent, data protection and attribution — get in touch with the qointa team: info@qointa.com

Scope and status

This is a cross-cutting companion edition summarizing how qointa's position-paper series applies to paediatric and vulnerable populations. It summarizes the position set out in the numbered papers, where the sources are cited in full. It describes qointa's reading of published requirements and does not represent the view of any ethics committee or regulator. It is not legal or ethics advice. Requirements for vulnerable participants are jurisdiction- and ethics-committee-specific and should be confirmed with qualified regulatory, ethics and privacy counsel.