

A PRICK IS ENOUGH! THERAPEUTIC DRUG MONITORING OF ANTISEIZURE MEDICATIONS THROUGH CAPILLARY MICROSAMPLING DEVICES

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BACKGROUND

Microsampling devices are proposed for therapeutic monitoring (TDM) through capillary fingerprick sampling(1), making it an attractive tool for antiseizure medications (ASMs) quantification in persons with epilepsy (PWE) (2).



VAMS-Mitra®



qDBS-Capitainer®

Reference-standard method for TDM: venipuncture 

Microsampling advantages:

- Lower blood volume
- Less painful and invasive procedure
- Possibile at-home collection
- Telemedicine support

AIM OF THE STUDY

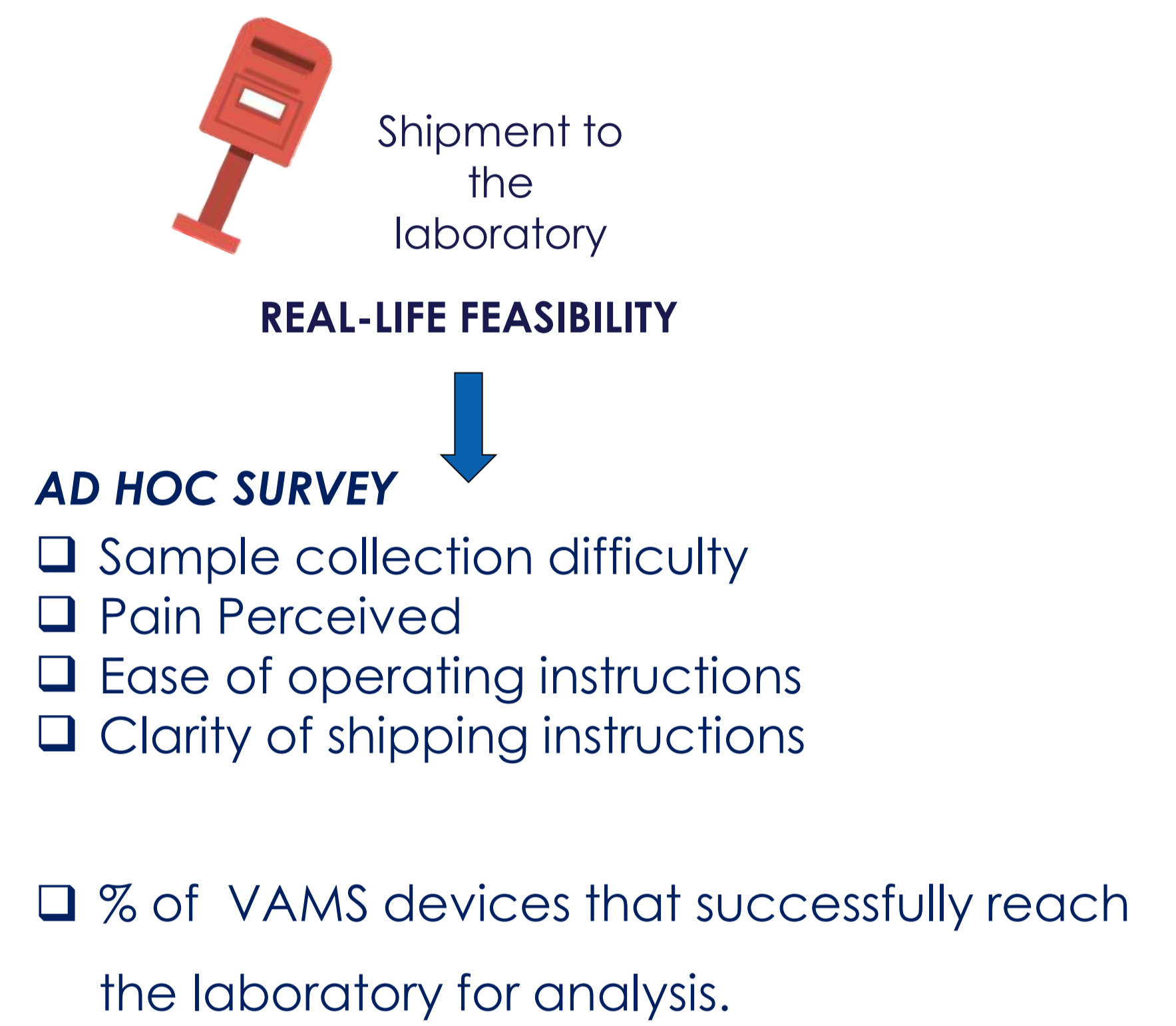
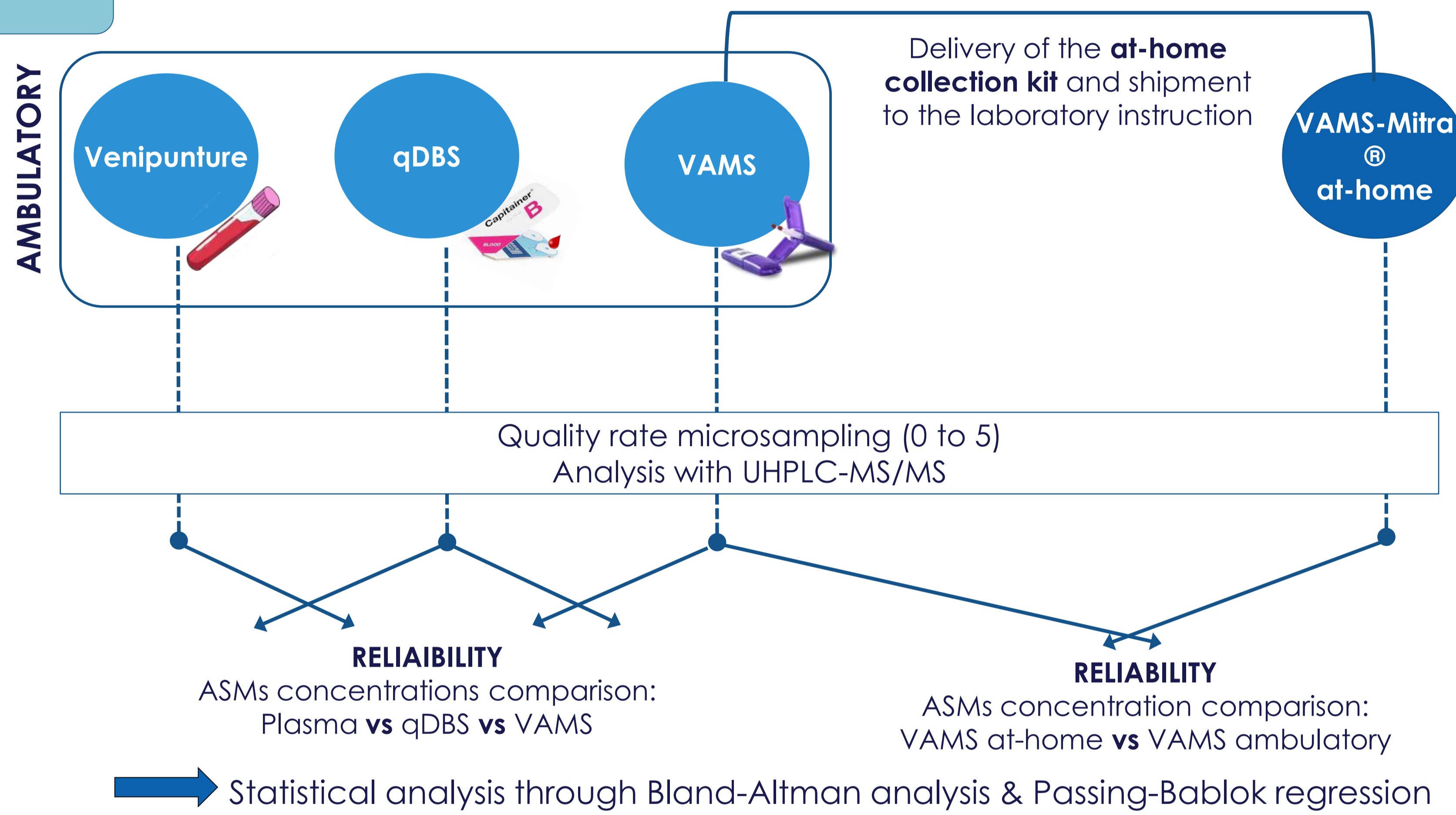
We assess the **REAL-LIFE FEASIBILITY** and **RELIABILITY** of using VAMS **at-home** and the **RELIABILITY** of both VAMS and qDBS fingerprick devices:

ASMs considered:

Carbamazepine (CBZ)
Lamotrigine (LTG)
Lacosamide (LCM)
Levetiracetam (LEV)



METHODS

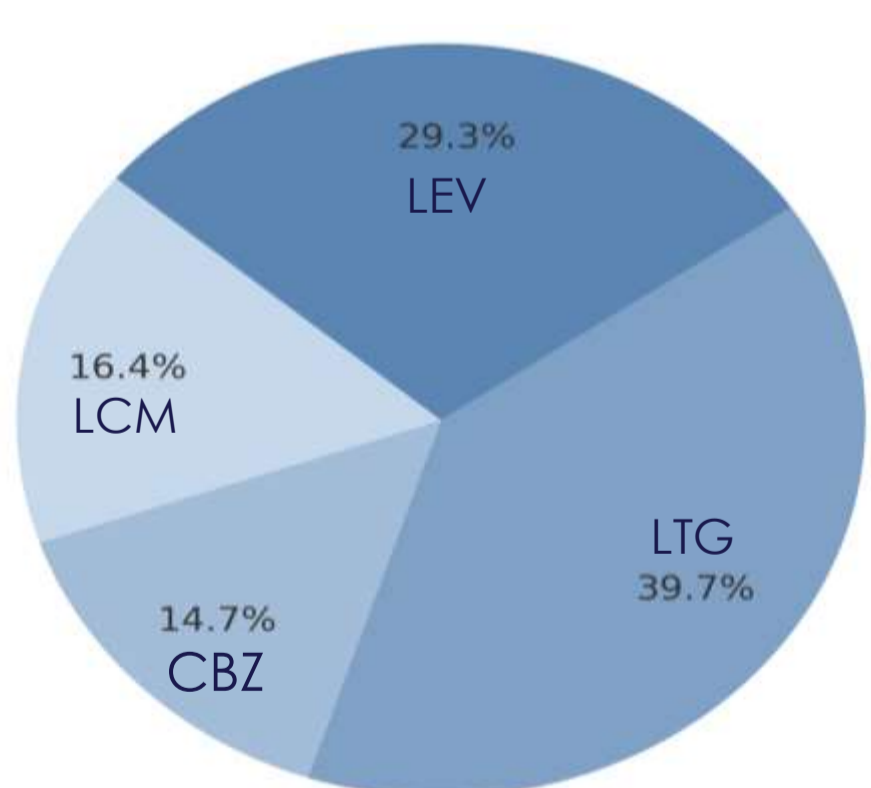


RESULTS




DEMOGRAPHIC DATA

Population	103
Mean-age	41 years
Min-max age	19-87
Female	66%
Monotherapy	84.47%
Polithery	12.62%

ASMS DATA



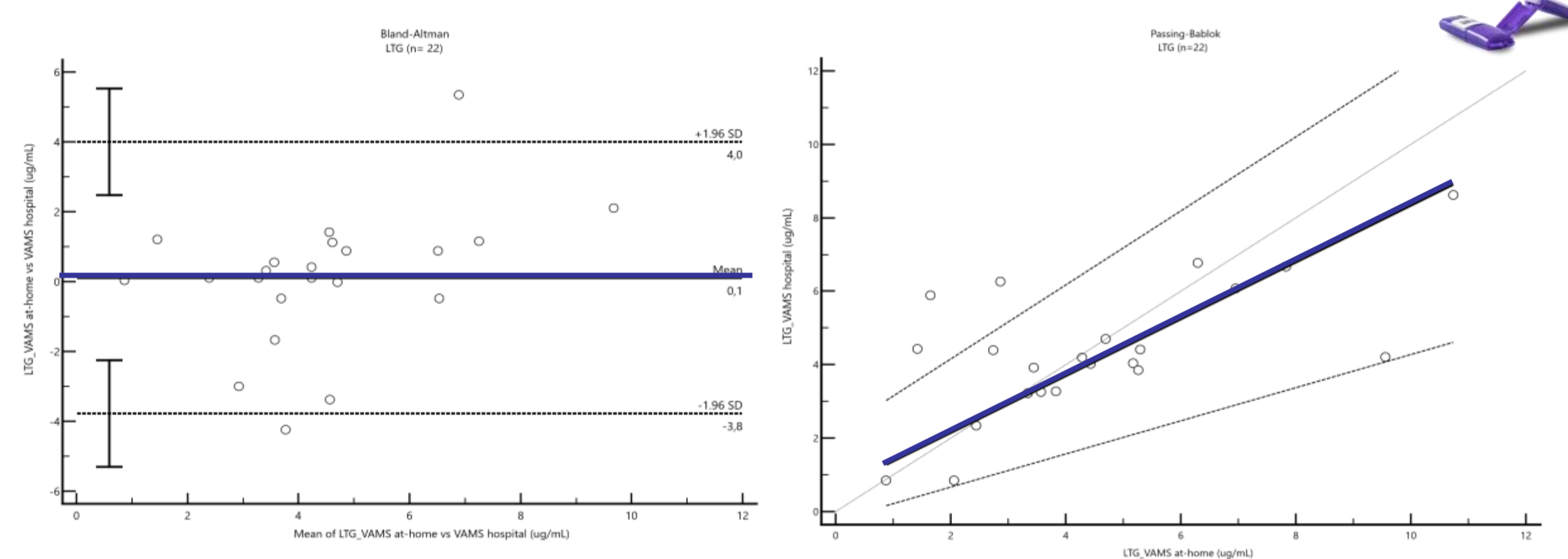
At-home VAMS FEASIBILITY

	Sample provided	84%
	Samples not provided	16%
	Arrived within 7-days	86%

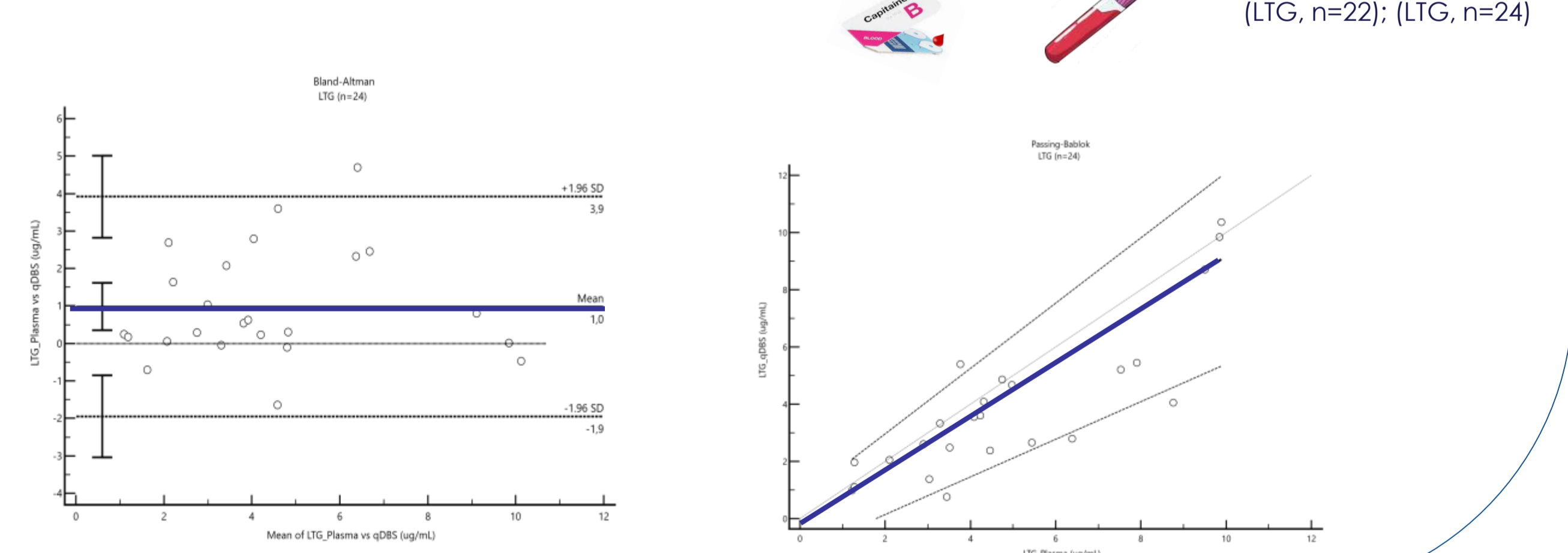
Sample collection procedure difficulty	>90% (easy)
Pain during procedure	>90% (no pain)
Ease of operating instructions	>86% (easy)
Clarity of shipping instructions	>76% (clear)

 >80% of the devices were properly aliquoted, indicating good quality of the devices used at home.

At-home VAMS REAL-LIFE RELIABILITY ASMs comparison between VAMS at-home vs VAMS ambulatory



qDBS RELIABILITY ASMs comparison between qDBS vs plasma



CONCLUSION

Feasibility and reliability was shown for at-home capillary fingerprick self-sampling VAMS devices. Future work should integrate these tools into routine clinical practice, extend to other ASMs, and evaluate use in special populations (pregnant, institutionalized, pediatric patients).

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