

Advancing VTE Prevention in Obstetric Care: Practical Insights for Improvement

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Background

Venous thromboembolism (VTE) remains the **leading cause of maternal death in the UK** (2.87 per 100,000).

Over **90% of VTE cases in pregnancy** are linked to identifiable risk factors.

Timely risk assessment and appropriate use of **Low Molecular Weight Heparin (LMWH)** can reduce the risk of VTE by **up to 80%**.

Ensuring accurate VTE scoring and correct LMWH dosing is critical to improving **maternal outcomes**.

Aims and Objective

This audit aims to improve maternal outcomes by enhancing the prevention of venous thromboembolism (VTE) during pregnancy and the postnatal period. It focuses on assessing adherence to the RCOG Green-top Guideline No. 37a on thromboprophylaxis, evaluating current clinical practices, and measuring improvements since the previous audit conducted in 2021.

Objectives

- Review accuracy of VTE risk assessments at booking, intrapartum, and postnatally.
- Measure correct prescribing and dosing of LMWH.
- Identify gaps in compliance, particularly around postnatal LMWH continuation.
- Recommend practical interventions to enhance compliance.
- Plan for re-audit to ensure sustained improvement.

Audit Standards

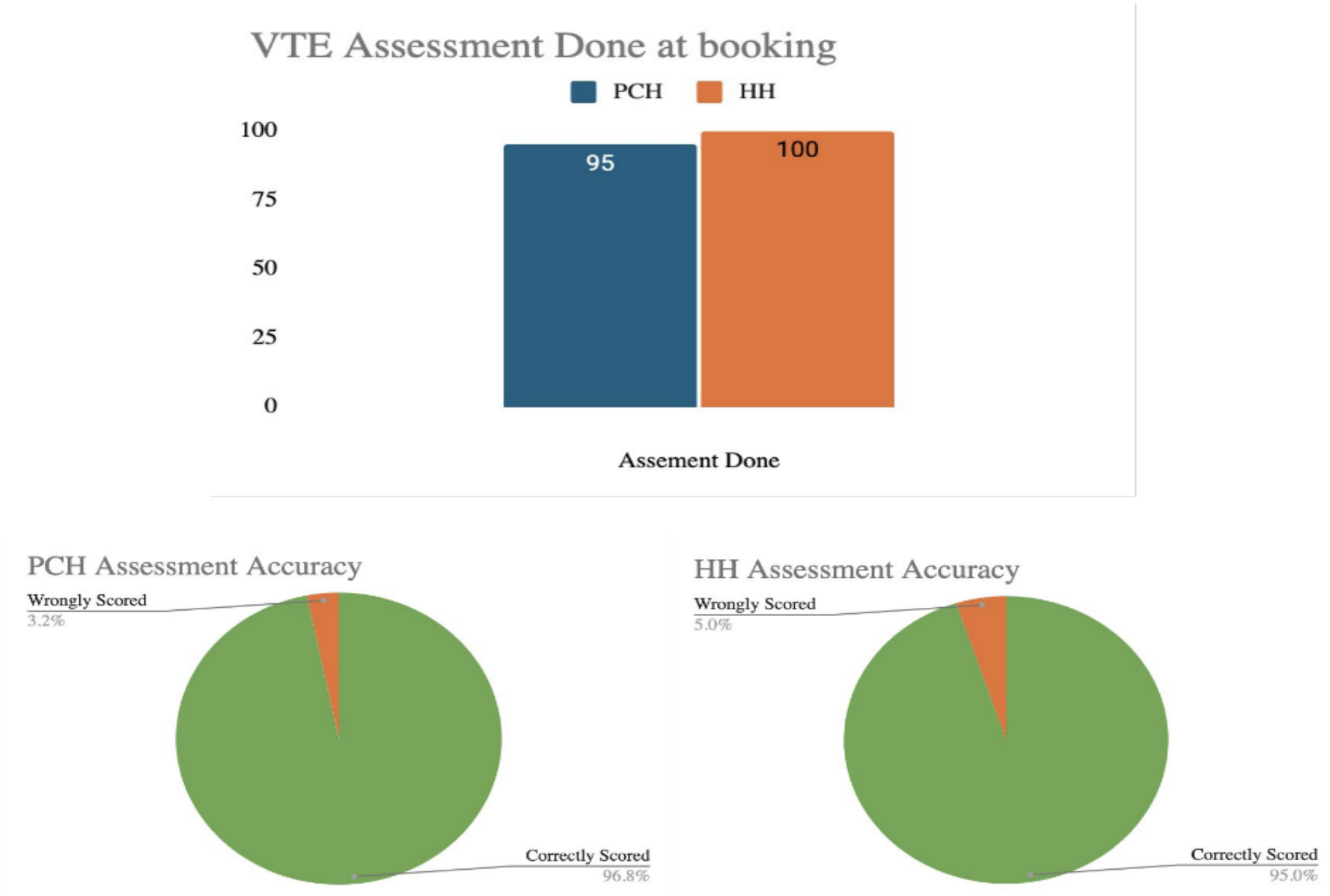
Criterion-	Target (%)	Exceptions	Title or Reference of the above guidance/standard (Evidence Base) Please insert NICE CG reference
1	All women should have a risk assessment for VTE at booking in early pregnancy	100%	
2	Risk assessments should be Completed if patients are admitted antenatally	100%	Thrombosis and Embolism during Pregnancy and the Puerperium, Reducing the Risk (Green-top Guideline No. 37a) page 2
3	Risk assessment should be repeated intrapartum and immediately after delivery	100%	
4	The dose of LMWH should be calculated from recent/ booking weight	100%	Thrombosis and Embolism during Pregnancy and the Puerperium, Reducing the Risk (Green-top Guideline No. 37a) page 7
5	LMWH should be given for 6 weeks for all women who received LMWH antenatally	100%	Thrombosis and Embolism during Pregnancy and the Puerperium, Reducing the Risk (Green-top Guideline No. 37a) page 6
6	LMWH to be prescribed to all women postpartum for 10 days if BMI>40	100%	

Methodology

A **retrospective audit** was conducted across **two hospital sites** (PCH & HH) from **March to September 2024**, reviewing a total of **200 patient records** (100 from each site).

Data were extracted using the **K2 system and the VTE assessment tool**, focusing on antenatal, intrapartum, and postnatal periods to evaluate VTE scoring accuracy and LMWH prescribing practices.

Key Findings



VTE Risk Assessment at booking

Assessment Done:

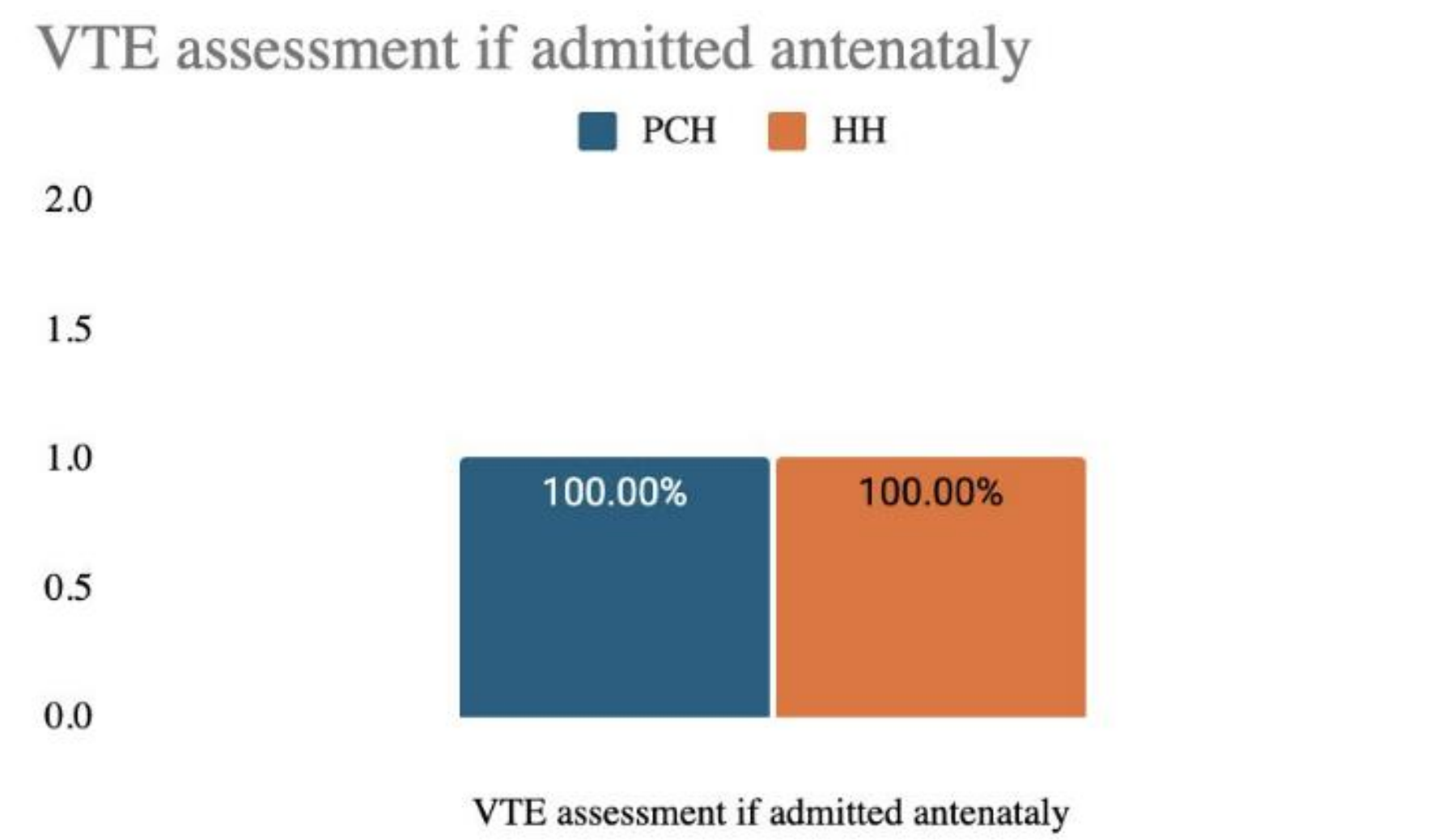
- PCH 95% (95 out of 100)
- HH 100% (100 out of 100)

Overall Assessment was done for 97.5% patients

VTE Risk Assessment at booking Scoring Accuracy

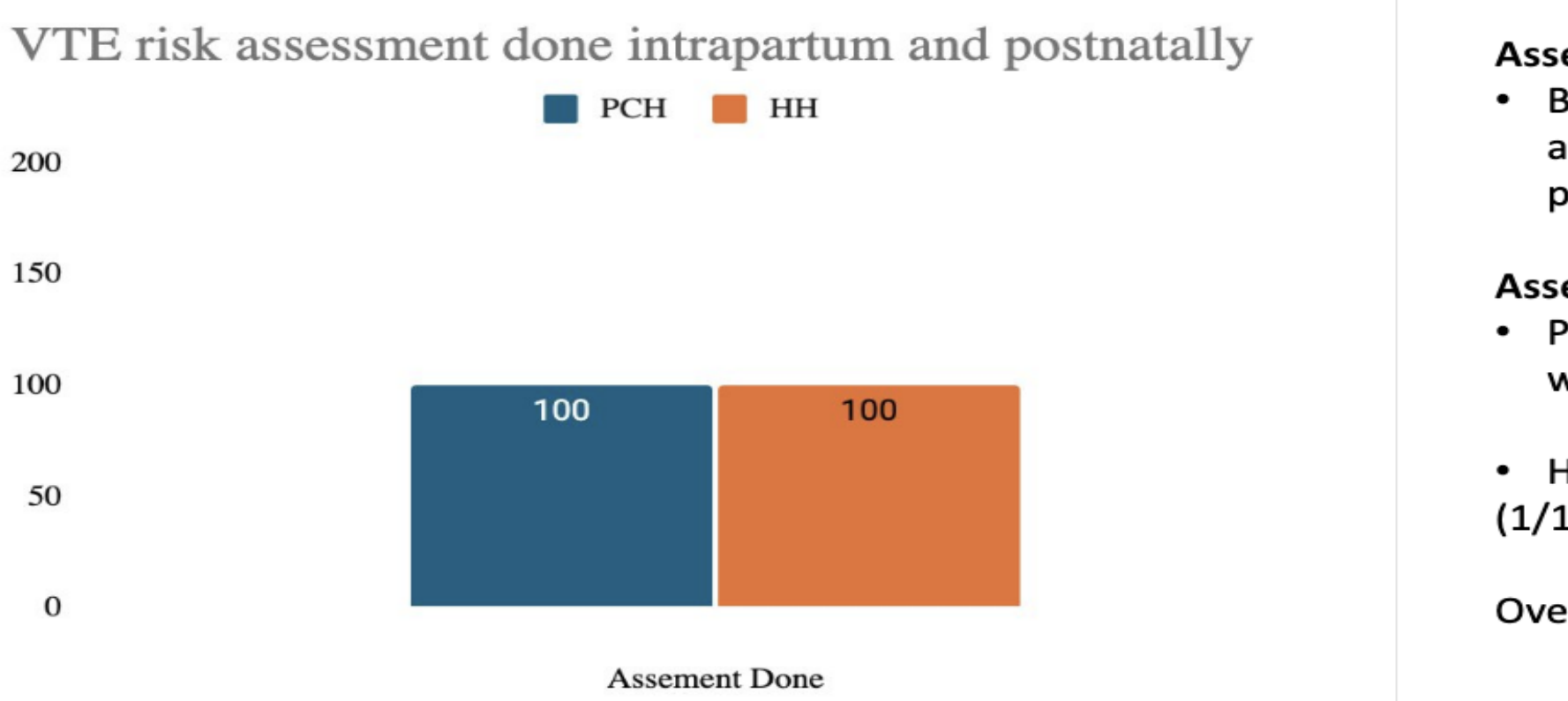
- PCH 96.84 % (92 out of 95)
- HH 95 % (95 out of 100)

Overall 95.92% of the patients were correctly scored



Antenatal VTE Assessment

In PCH and HH 100 % assessments were completed on patients admitted antenatally



Assessment Done:

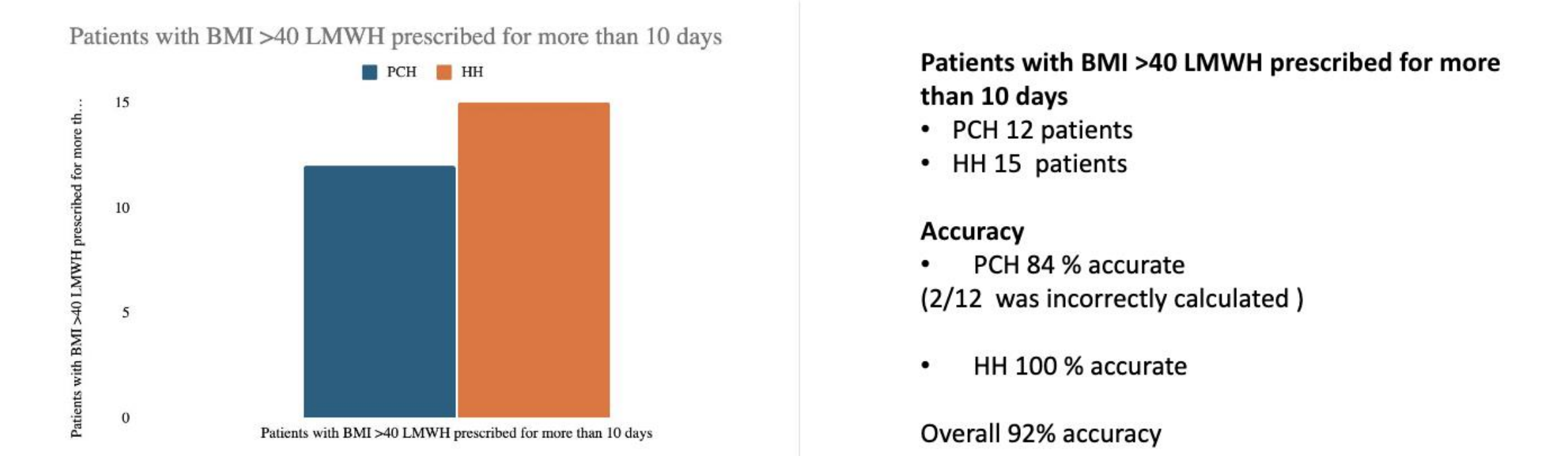
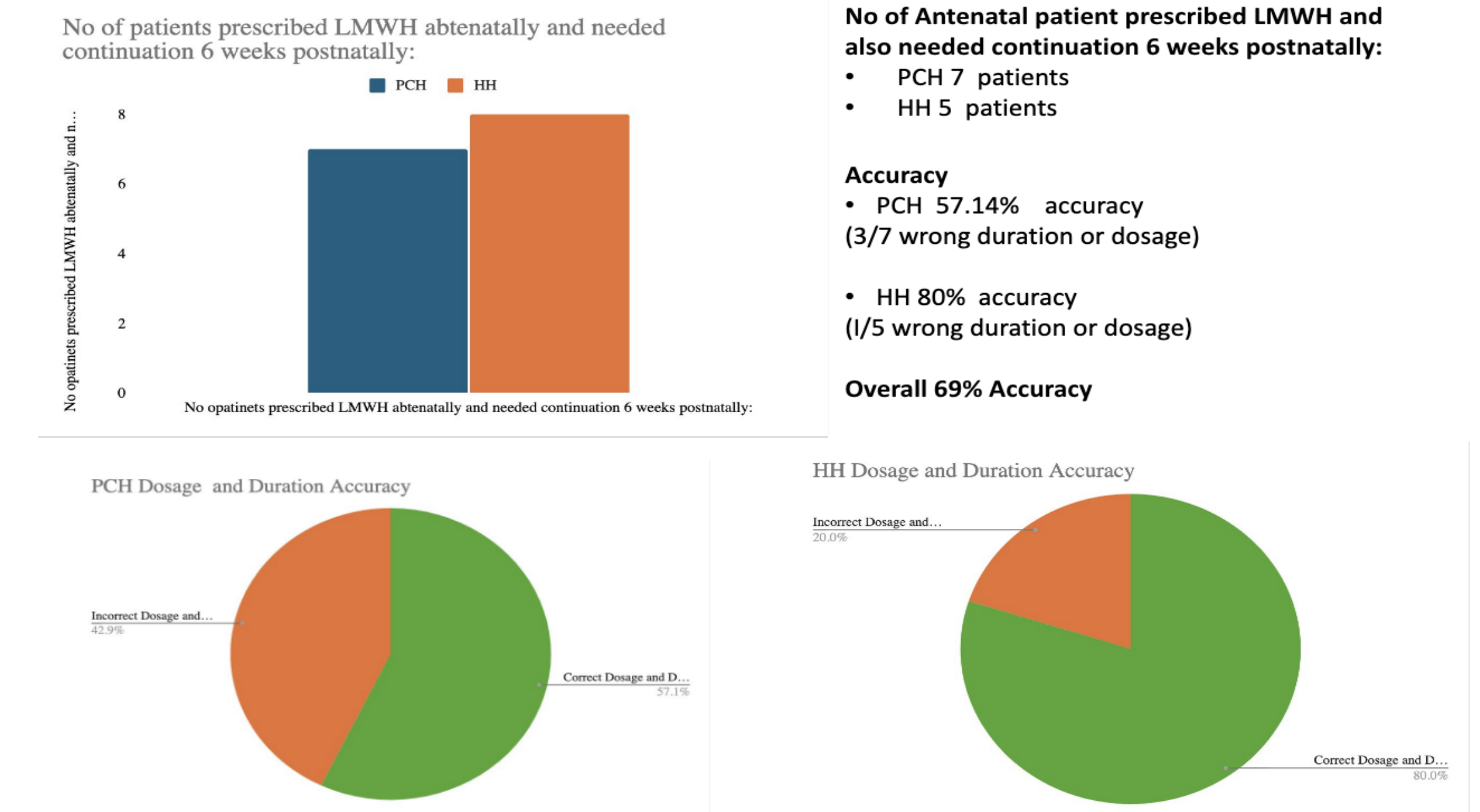
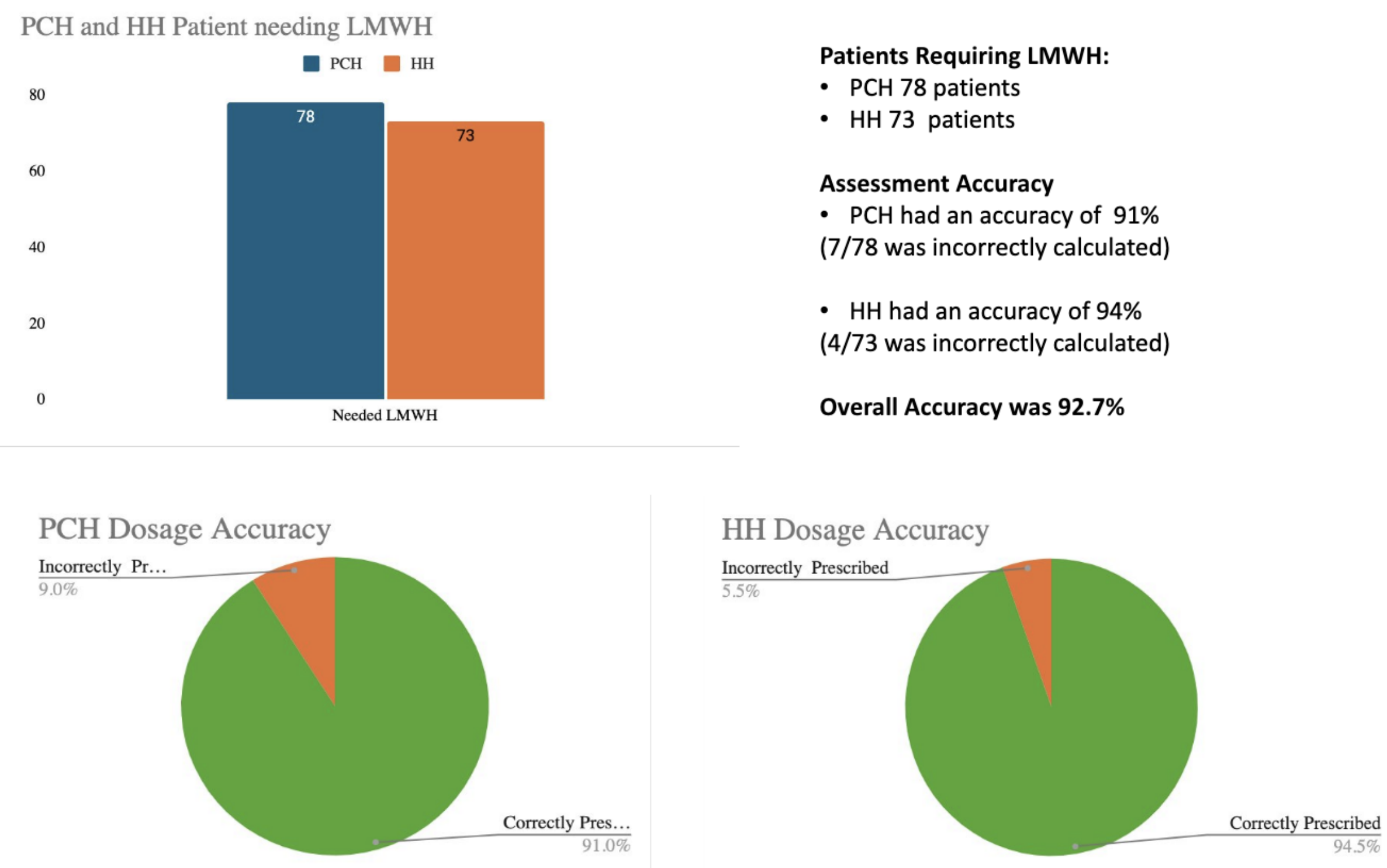
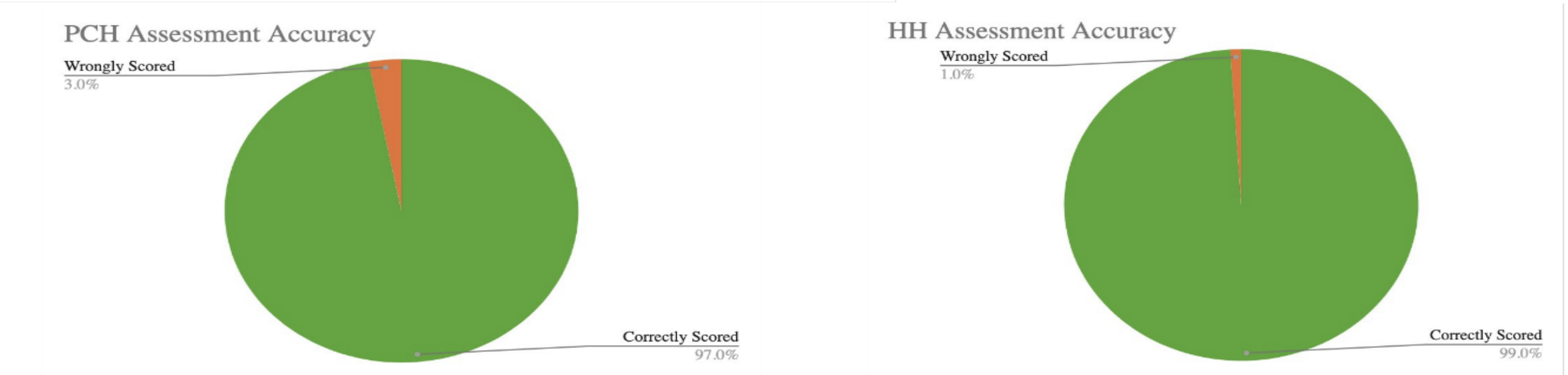
- Both PCH and HH did assessment for all the 100 patients in partum and postnatally

Assessment Accuracy

- PCH had an accuracy of 97% (3/100 was incorrectly calculated)

- HH had an accuracy of 99% (1/100 was incorrectly calculated)

Overall assessment accuracy was 98%



Audit Outcomes

High Compliance Achieved

- VTE risk assessment at booking: 97.5%
- Intrapartum/postnatal assessment accuracy: 98%
- LMWH dosing accuracy: 92.7%

Improvements from 2021 Audit

- Increased overall compliance and documentation accuracy
- Greater adherence to VTE assessment timing

Areas Needing Focus

- 6-week postnatal LMWH continuation: only 69% compliance
- Occasional scoring and dosing errors (3–11%)

Conclusion

Significant improvement in guideline adherence, Yet sustained efforts needed in **postnatal LMWH continuation and scoring accuracy**.

Recommendations

- Training SHO regarding the correct dosage according to weight and scoring.
- Posters made available for easy reference for scoring patients
- Re-weighing patients after delivery to ensure correct dose of LMWH to be prescribed.
- Reaudit to check implementation of changes.
- Educational videos for self education of patients regarding signs and symptoms of DVT, PE and Risk factor
- Audit the entire VTE pathway from booking to discharge in relation to dispensing the correct dose and duration of Dalteparin in the postnatal period.

Action Plan

- Targeted Training:** Educate SHOs on VTE scoring and LMWH dosing protocols.
- Visual Aids:** Display ward posters as daily reminders.
- Reweighing Post-Delivery:** Reinforce accurate dosing through routine postnatal weight checks.
- Patient Education:** Introduce educational videos on LMWH use and VTE prevention.
- Reaudit Plan:** Schedule follow-up audit for 2025/26 to assess ongoing improvements.
- Discharge Pathway Review:** Audit TTO (To Take Out) LMWH prescriptions for completeness.

Reference

Royal College of Obstetricians and Gynecologists
Green-top Guideline, 2015
Saving lives, improving mothers' care – lessons learned to inform maternity care from the UK and Ireland confidential enquiries into maternal deaths and morbidity 2015-17
National Perinatal Epidemiology Unit, University of Oxford, Oxford, 2019