



# A solution for clinical hyperbaric facilities to easily standardize, track and document routine safety inspections: Checklist-based Digital Task Manager



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## INTRODUCTION

Safe provision of hyperbaric oxygen therapy (HBOT) is a primary objective for any facility seeking excellence in care. HBOT safety relies on a comprehensive preventative maintenance program, which includes routine HBOT chamber inspections.

The Undersea and Hyperbaric Medical Society recommends that facilities keep maintenance/inspection logs for all hyperbaric equipment.<sup>1</sup> However, in practice such logs are often inconsistent and/or recorded on paper, which brings other challenges including lack of storage space, time-consuming record reviews, and lack of immediately actionable reports.

## OBJECTIVE

To address these obstacles, we aimed to develop and implement a solution for HBOT facilities to easily standardize, track and document routine safety inspections.



## METHOD

Using the design thinking methodology<sup>2</sup> the solution\* was developed as a module within a clinical decision support web application\*\*

Clinicians' needs/desired features were identified through interviews.

Module was developed with robust programming language, library, framework

Module was implemented at a hospital-based outpatient wound/HBOT clinic

- ✓ Paper-based HBOT routine inspection log templates were converted into digital checklists, and daily recurring tasks were assigned to the hyperbaric tender (HT)
- ✓ HT completed digital checklists + manual logs for comparison
- ✓ Manager monitored task completion through dashboard
- ✓ HT and manager completed questionnaire before/after implementation

## RESULTS

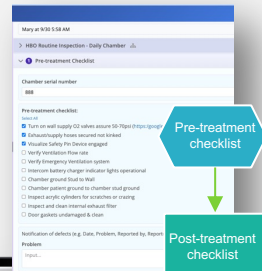
The module helped standardize, track and document daily safety chamber checks through customized digital checklists assigned as recurring tasks and real-time actionable information.

**213 tasks** were completed in 3 months. Pre/post-questionnaires revealed that compared to paper-based logs, digital checklists:

**1** Allowed HT to conduct and document maintenance checks in 50% less time

**2** Allowed manager to review maintenance logs in 50% less time

**3** Have a stronger impact on the environment of safety (score=5/5, 0=not strong)



## CONCLUSIONS

A solution was developed for HBOT facilities to easily standardize, track and document routine safety inspections. Implementation resulted in significant time-savings compared to paper-based logs. In addition, the resulting accuracy in documentation and better understanding of accountability of responsibility may remarkably improve the environment of safety within hyperbaric programs.

## REFERENCES

1. The Undersea and Hyperbaric Medical Society. Clinical Hyperbaric Facility Accreditation Manual Fourth Edition. 2018;
2. Ferreira FK, Song EH, Gomes H, Garcia EB, Ferreira LM. New mindset in scientific method in the health field: Design Thinking. Clinics. 2015 Dec 10;70(12):770-2.

## ACKNOWLEDGEMENT



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