

# VGH Hyperbaric Unit QI Program

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# QI and HBOT

- Added dimensions unique to HBOT
  - Machine maintenance
  - Human / Machine Interface
  - Staff and Patient Safety

# Fundamental Principles

- Teamwork
- Shared responsibility
- Transparency
- Communication
- Trust

# Machine Maintenance

- PVHO
- NFPA
- CSA
- Gas analysis
- Scheduled maintenance days

# Human / Machine Interface

- Two person flash-up
- Station Cards
- Status verification



# Anticipation and Preparation

- Practice Guidelines
- Policy Manual
- Protocol and Procedure Manual
- Abort protocols
- SOP's and Hot List



# Team Communications

- Hot List

**HOT LIST**

**SYSTEM/DEVICE: BIBS Air Regulator HP-PRG-03 Variance**

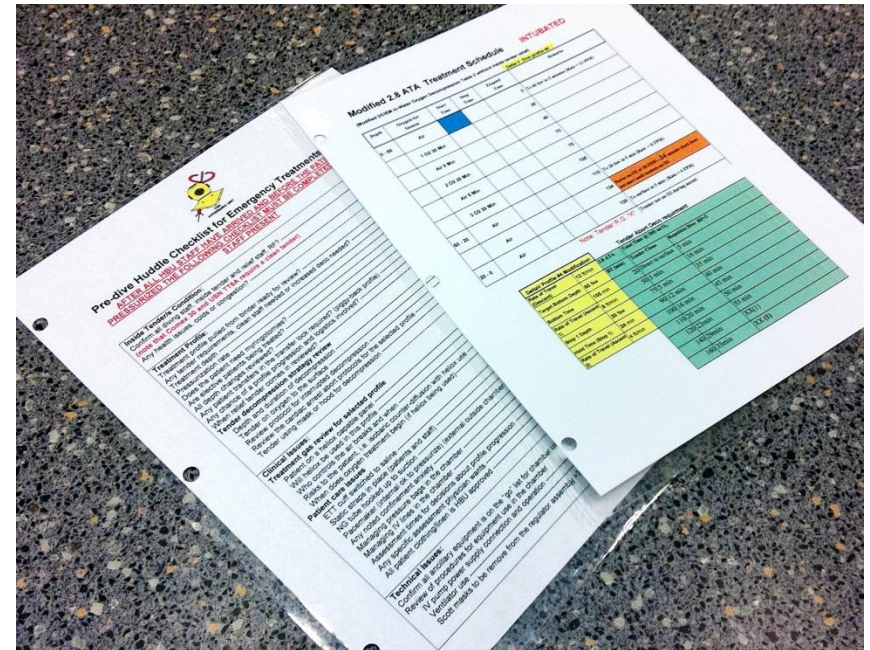
DATE	February 23, 2011
NEW ALIGNMENT	Flash Up: No Change Shut Down: No Change
OPERATION CHANGE	During a treatment: Reset the BIBS Air Supply Low Pressure Alarm on DeltaV (Faceplate: PA PT-1, Purge Air Supply Pressure) When BIBS Air is selected as the treatment gas by the tender on the patient panels, the supply pressure dips below the low alarm set-point (90 psi), and then returns to normal range.
FOLLOW-UP	Note: If pressure does not return above 90 psi, (within approx 1-2 min) further service will be required.
Notifications/Postings:	HP-PRG-03 regulator requires a soft goods PM kit installation. Parts are on order with Surrey Fluid Power (Tom Gamba), TESCOM representative. 3 week delivery.
<input checked="" type="checkbox"/> Clinical Staff <input checked="" type="checkbox"/> At Device/Component <input checked="" type="checkbox"/> Email to Operators <input checked="" type="checkbox"/> Copy on Hotlist	
BACKGROUND/ISSUE	The HP-PRG-03 BIBS Air Supply Regulator (between the HP Receivers), provides Treatment Air to the Chamber Air manifold at approx. 100 psig. This system is backed up with the Medical Grade Air cylinders (behind LP1) set at 90 psig and by the hospital Central Supply Air at 50 psig. The DeltaV 90 psi Low Alarm Limit is set as an indicator to the operator that the HP BIBS Air HP-PRG-03 supply is not sufficient and air will be supplied by the back-up air cylinders. Because the pressure currently recovers to above this limit in a timely manner, this is an anomalous situation with very low risk and allows for resetting the alarm in the interim.
LEAD/CONTACT	DO/GS
REVIEWED BY	GS GL PB DP DP ES

**SYSTEM/DEVICE: BIBS Air Regulator HP-PRG-03 Variance**

C:\Documents and Settings\jgibson\Local Settings\Temporary Internet Files\Content.IE5\7P41E264\HP-PRG-03 BIBS Air Regulator HP-PRG-03 Variance Notificatio.doc  
Chamber Operation/Variance Notifications

# Pre-dive Huddle

- Entire team assembles at console
- Review pre-dive checklist
- Review dive profile
- Review abort protocol
- Questions or concerns



# Quality Process

- Weekly QI Meeting
- Standards Committee
- Case Review Committee
- Full Team

# Weekly QI Review

- MD of the week
- PCC
- RN staff
- Weekly summary in chart
  - Dx, treatments, issues, plan

# Weekly Team QI Reviews

- Current patient census
  - progress
  - patient care issues
- Discharges
- New consults
- Review of waiting list
  - number of patients
  - diagnoses
  - longest wait
  - average wait

# Weekly Team QI Reviews

- Adverse events of patients on waiting list
- Triage changes
- Clinical incidents or complications
- Technical incidents related to the chamber or supporting mechanical components

# Weekly Team QI Reviews

- Refers issues to Case Review and Standards Committee and Case Review Committee

# Case Review Committee

- Meets 6 times per year
- 4 physicians, PCC, RN
- Reveiws all emergency cases, significant clinical incidents, telephone consults, any cases flagged by staff
- Reports to Full Team and Standards

# Standards Committee

- Dan Driedger – Biomedical Engineer (Safety Officer and Chair)
- Gary Law - Biomed Operations Coordinator
- Gord McConnell - P. Eng - Risk Management Advisor
- Paul Doherty, RN – PCC
- Dave Harrison – Medical Manager

# Standards Committee

- Meets 6 times per year and at the call of the chair
- Reports to Full Team

# Standards Committee

- Oversees the safety of patients and staff in the unit – policies and maintenance
- Develops decompression protocols for staff
- Reviews the logistics and implementation of decompression protocols on an ongoing basis

# Standards Committee

- Reviews all significant clinical and technical incidents in the unit
- Develops safety related policies so as to comply with CSA Z275.1 and NFPA standards
- Reviews the training and certification of operator staff

# Full Team

- MD staff - D. Harrison (Chair)
- RN staff
- RT staff
- Biomed staff
- P. Eng

# Full Team

- Meets 6 times per year
- Receives reports from Case Review, Standards Committee
- Reviews and approve all policies and protocols
- Reviews all incidents forwarded by the Standards Committee

# Quality System

- All operations dictated by Policy Manual
  - Patient treatments
  - Decompression strategies
  - Safety procedures
  - Abort protocols
  - Fire response
  - Go / No Go list
  - Full review completed May 2011

# Data Tracking

- Computer Database
  - Number of new patients
  - Number of elective/emergency treatments for each diagnosis
  - Number of chamber compressions
- Daily event log
- Weekly QA review

# Performance Indicators:

- Budget
- Services delivered per year
- Overtime
- Waiting list
- Research
- Adverse events
- Long term outcomes

# Patient Outcomes

- Track treatment events
  - Ear barotrauma 1-2 / week
  - One abort for respiratory failure
  - No seizures
  - Myopia 95%
  - Link research to outcome measures

# Summary

- It is essential to have a QI program
- Added dimensions related to drug delivery system
- Anticipation and preparation are the cornerstones of the program
- Compliance with NFPA, CSA, PVHO
- Patient outcomes linked to research

# Questions