



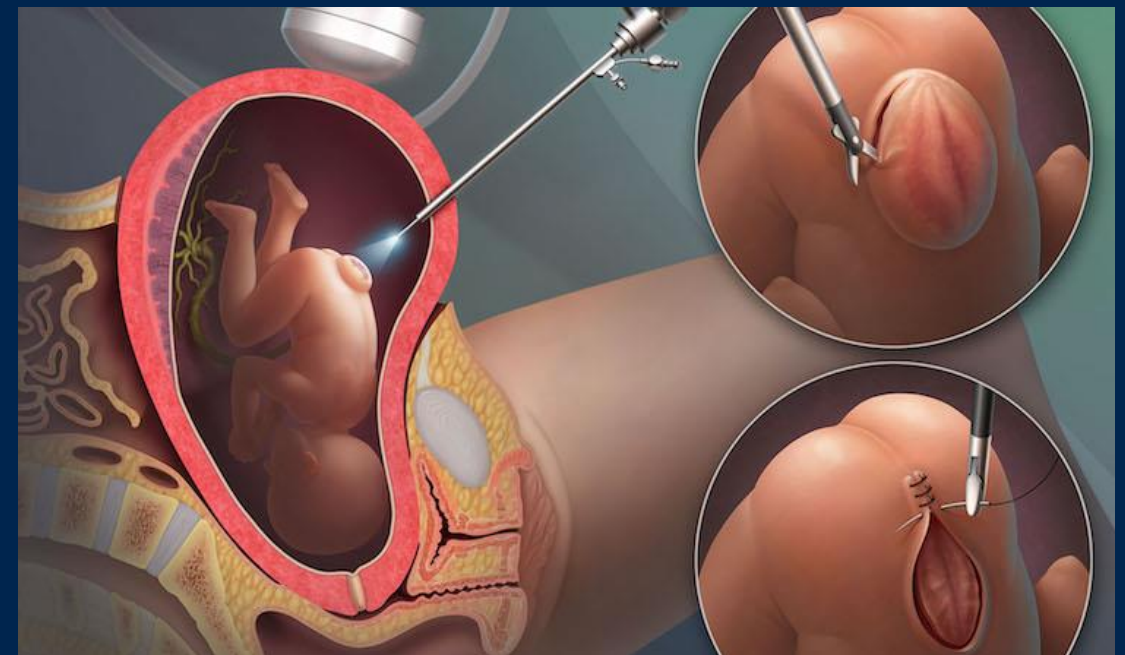
# Prevalence of High-Risk Bladder Categorization with Prenatal and Postnatal Myelomeningocele Repair Types

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# BACKGROUND AND PRIOR STUDIES

- SB: MC permanently disabling birth defect (34/100k prevalence)
- MC worldwide repair type remains postnatal open
- Increasing use of prenatal intervention
- Growing number institutions performing fetoscopic



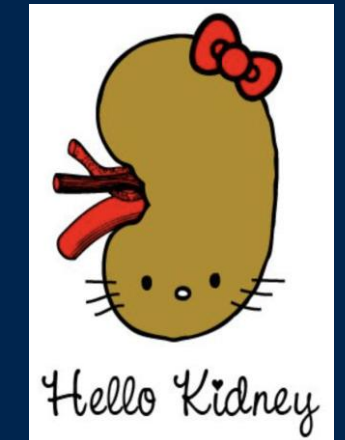
# BACKGROUND AND PRIOR STUDIES

- Landmark MOMS trial\* evaluated prenatal vs. postnatal repair
    - Significantly reduced need for VP shunt
    - Reduced rate hindbrain herniation
    - Improved motor function
- } **Prenatal**
- No significant urologic benefit noted on multiple MOMS substudies\*\*
    - Studies focused on CIC and/or continence rates

\*Adzick NS, et al, N Engl J Med 2011; \*\*Brock JW, et al, Pediatrics 2015

# BACKGROUND AND PRIOR STUDIES

- Main goals of SB urologic care
  - Obtain + maintain SAFE bladder
    - Protect kidneys / upper tracts
  - Eventual social continence



- **Most require intervention for safe bladder and/or continence**
  - Prenatal and postnatal



# AIM + HYPOTHESIS

- We sought to evaluate differences in bladder safety between 3 MMC repair types
- ***We hypothesize that prenatal, especially fetoscopic, repair will lead to improved bladder safety compared to postnatal repair in the near term***

# METHODS

- Retrospective
- All prenatal MMC repairs
  - Prenatal open (PRO)
  - Fetoscopic (FMR)
- Postnatal repair (PST) with MOMS inclusion/exclusion criteria to match
- **Initial studies** within 1<sup>st</sup> year
- **Follow up studies** within 18mos of initial

	Initial Studies	Follow up Studies
PRO	20	17
FMR	22	13
PST	51	39

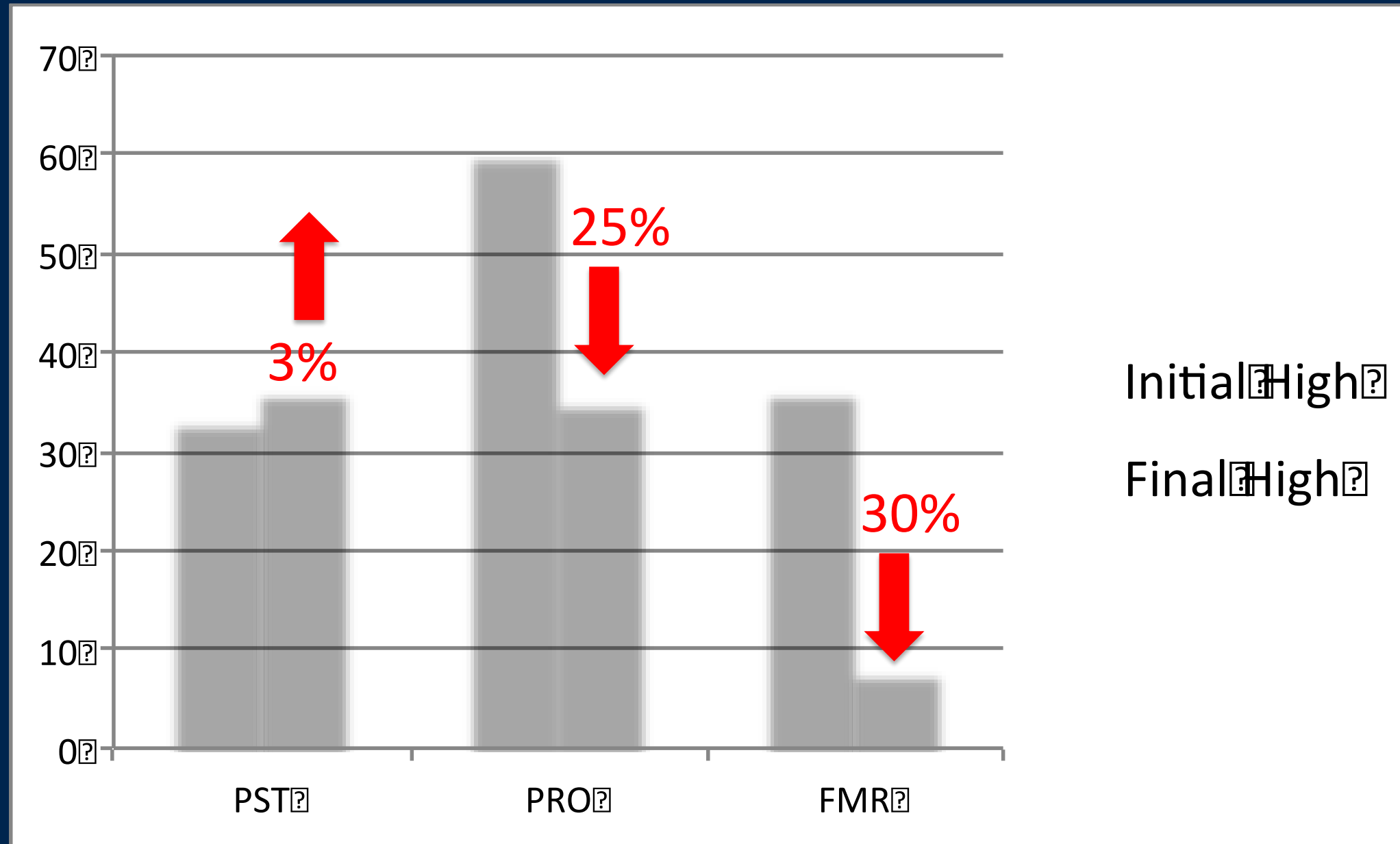
# METHODS

- **US:** evaluated for HN
- **VCUG:** evaluated for VUR
- **CMG:** evaluated for bladder risk categorization

<u>Safe</u>	<u>Intermediate</u>	<u>High</u>
<ul style="list-style-type: none"><li>• Normal Capacity</li><li>• MDSP/DLPP &lt;25cmH20</li><li>• No NDO</li><li>• No DSD</li></ul>	<ul style="list-style-type: none"><li>• MDSP/DLPP 25-40cmH20</li><li>• Presence of NDO</li><li>• No DSD</li></ul>	<ul style="list-style-type: none"><li>• MDSP/DLPP &gt;40cmH20</li><li>• Presence of NDO + DSD</li></ul>

MDSP = Maximum Detrusor Storage Pressure; DLPP = Detrusor Leak Point Pressure; NDO = Neurogenic Detrusor Overactivity; DSD = Detrusor Sphincter Dyssynergia

# FINDINGS: HIGH-RISK BLADDER DISTRIBUTION

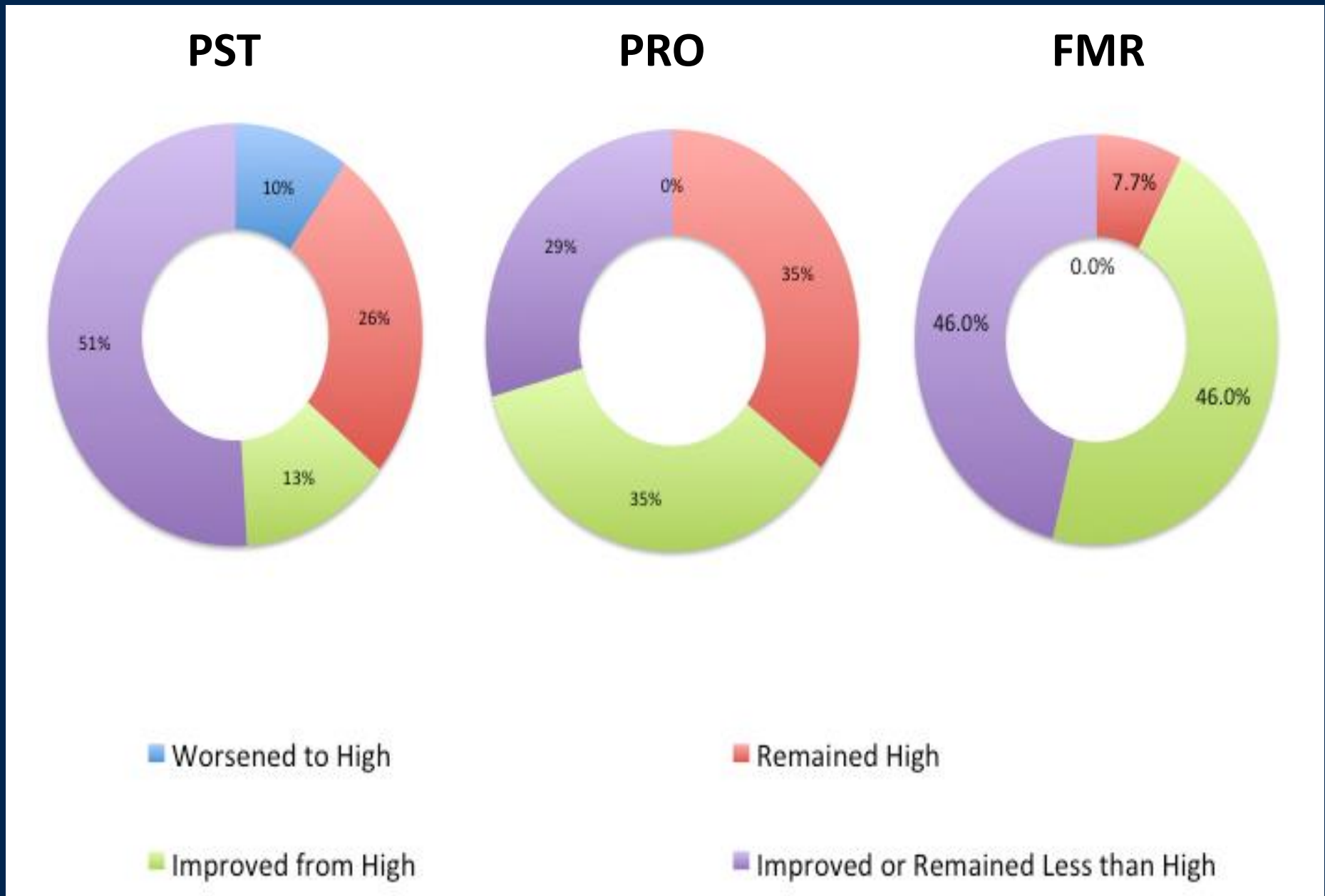


Initial High

Final High



# FINDINGS



# FINDINGS

FMR improved from high risk in 46%

PRO and FMR **never** worsened to high risk

**PST worsened to high risk in 10%**

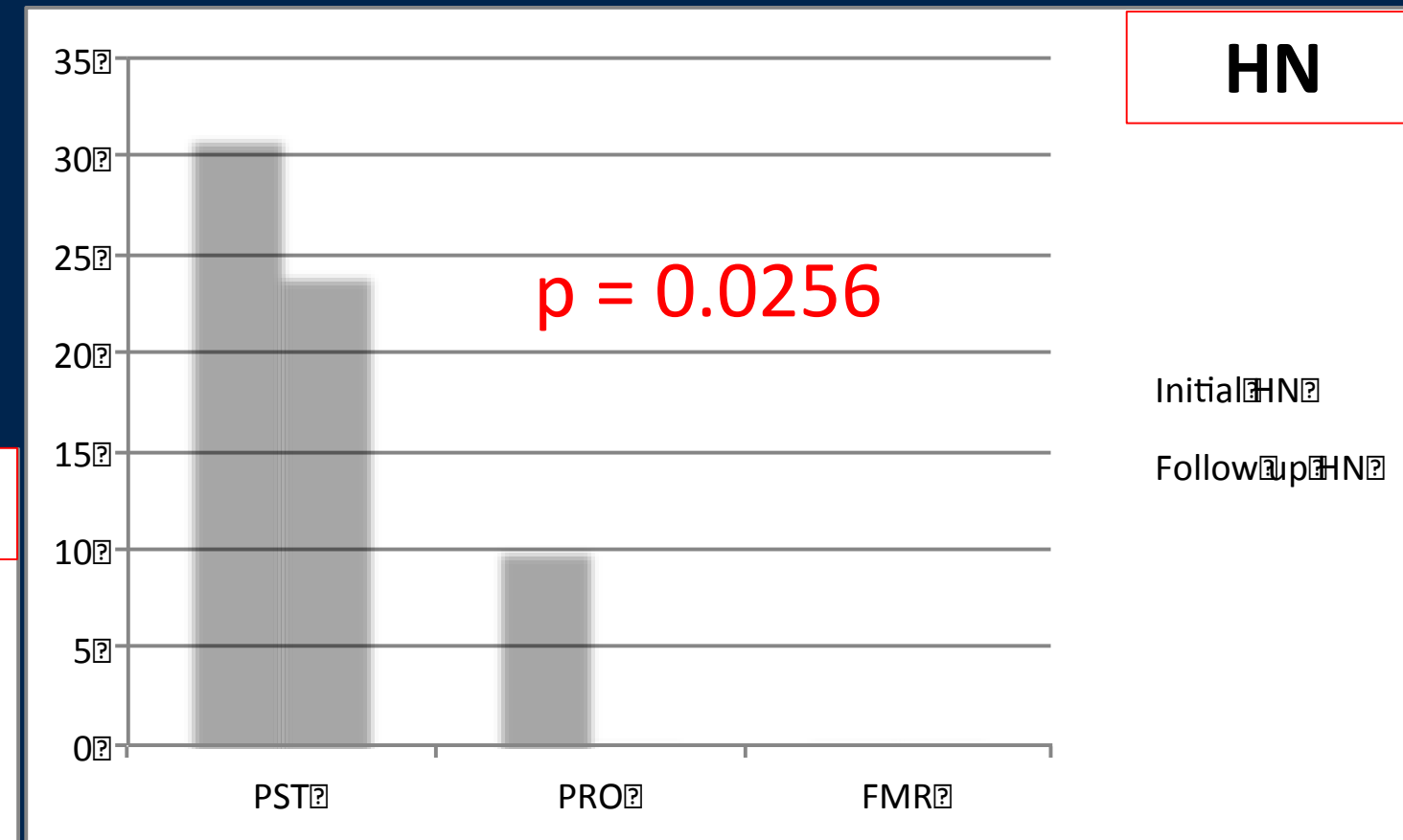
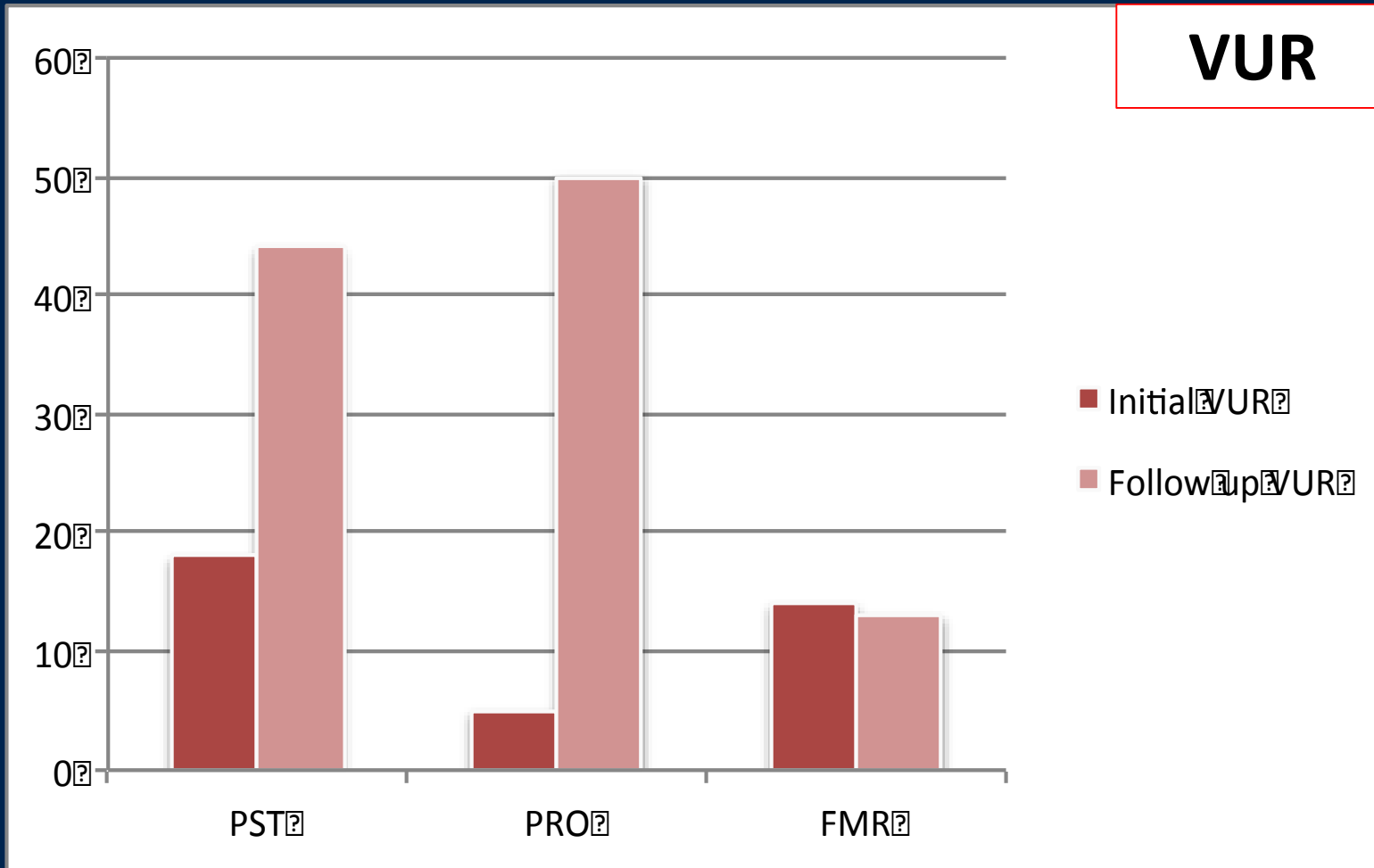
■ Worsened to High

■ Remained High

■ Improved from High

■ Improved or Remained Less than High

# FINDINGS



# CONCLUSIONS

- PRO/FMR associated with improved bladder health in near term
- FMR shows promising results compared to PRO and postnatal in regards to bladder safety
  - Larger studies with longer follow up are warranted to determine statistical significance, cost, and public health benefit