



# Post-Procedural Patient Instructions in Interventional Radiology: Assessment of Impact on Quality of Life

Sasicha Manupipatpong, BS<sup>1</sup>, Jessa M Tunacao, MD<sup>2</sup>, Varun R Danda, BS<sup>3</sup>, Clifford R Weiss, MD<sup>4</sup>

1 School of Medicine, The Johns Hopkins University School of Medicine, Baltimore, MD

2 Department of Radiology, Stony Brook University, Stony Brook, NY

3 Sidney Kimmel Medical College, Thomas Jefferson University, Philadelphia, PA

4 Department of Radiology and Radiological Science, Division of Vascular and Interventional Radiology, The Johns Hopkins University School of Medicine, Baltimore, MD



**JOHNS HOPKINS**  
M E D I C I N E

Financial disclosures: no relevant conflicts of interest to disclose.



# Background

- Multiple post-procedure instructions are in place to prevent complications after discharge for procedures such as central venous port (CVP) placements, biliary tube (BT) changes, and BT placements
- However, post-procedure instructions are not well explored in the literature:
  - Little evidence on outcome improvement
  - Few studies reported patient burden due to some instructions, but no systematic evaluations of each individual post-procedural instruction
  - In some cases, even in the face of evidence that certain instructions do not positively affect outcomes, standard practices remain unchanged

# Purpose

To evaluate the impact of CVP placement, BT change, and BT placement post-procedural instructions on patient quality of life and report patient-identified burdensome instructions which lack an evidence base for future study.

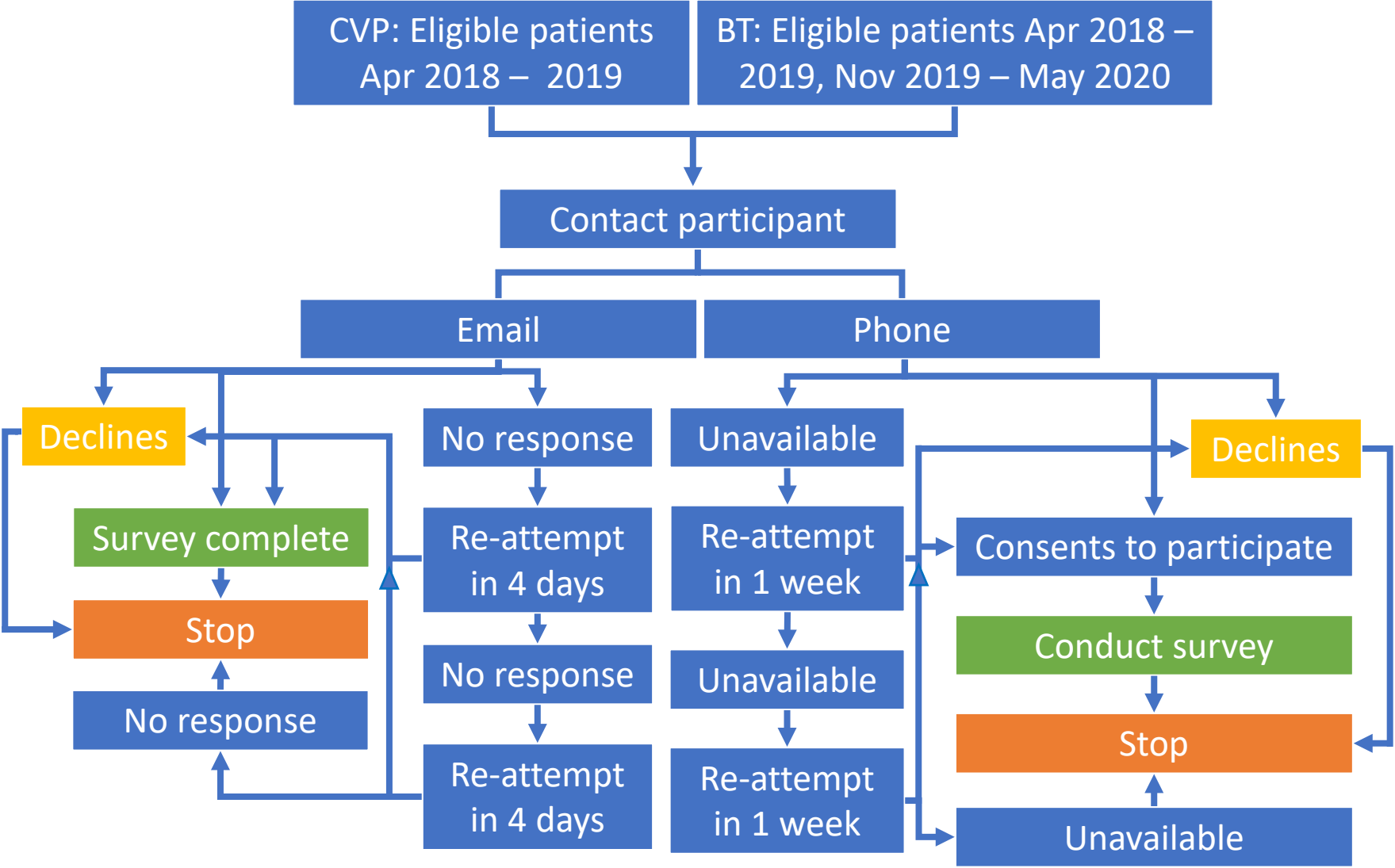
# Methods

- Exploratory and hypothesis-generating study using mixed methods
- Primary outcomes assessed:
  - Patient quality of life
  - Compliance with post-procedure instructions
- Subsequent targeted literature review to determine evidence base behind instructions reported as most burdensome

Survey Structure	
Question	Answer Choices
Did you remember the instruction: "..."	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unsure
Did you comply with the instruction?	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unsure <input type="radio"/> Partially complied
How did this impact your quality of life?	<input type="radio"/> Very positive <input type="radio"/> Moderately positive <input type="radio"/> Mildly positive <input type="radio"/> Neutral <input type="radio"/> Mildly negative <input type="radio"/> Moderately negative <input type="radio"/> Very negative
Optional: Elaboration on impact of the instruction on daily routine, functioning, psychology, etc.	Free response



# Methods: Study Flow



# Results: Patient Demographics

	<b>CVP Placement (n = 57*)</b>	<b>BT Placement or Change (n = 52**)</b>
<b>Age (mean ± SD)</b>	58.5±10.9	63.8±10.8
<b>Gender (%)</b>		
<b>Male</b>	35.7	53.8
<b>Female</b>	66.1	46.2
<b>Education (%)</b>		
<b>&lt; 8<sup>th</sup> grade</b>	0	0
<b>8-11<sup>th</sup> grade</b>	0	5.8
<b>HS diploma/equivalent</b>	10.7	25.0
<b>Associate's degree</b>	5.4	17.3
<b>Bachelor's degree</b>	33.9	26.9
<b>Master's degree</b>	37.5	15.4
<b>Doctoral degree</b>	12.5	9.6

	<b>Number of respondents</b>	<b>Number of patients contacted</b>	<b>Response rate (%)</b>
<b>CVP</b>	57	840	6.8
<b>BT</b>	52	166	31.3

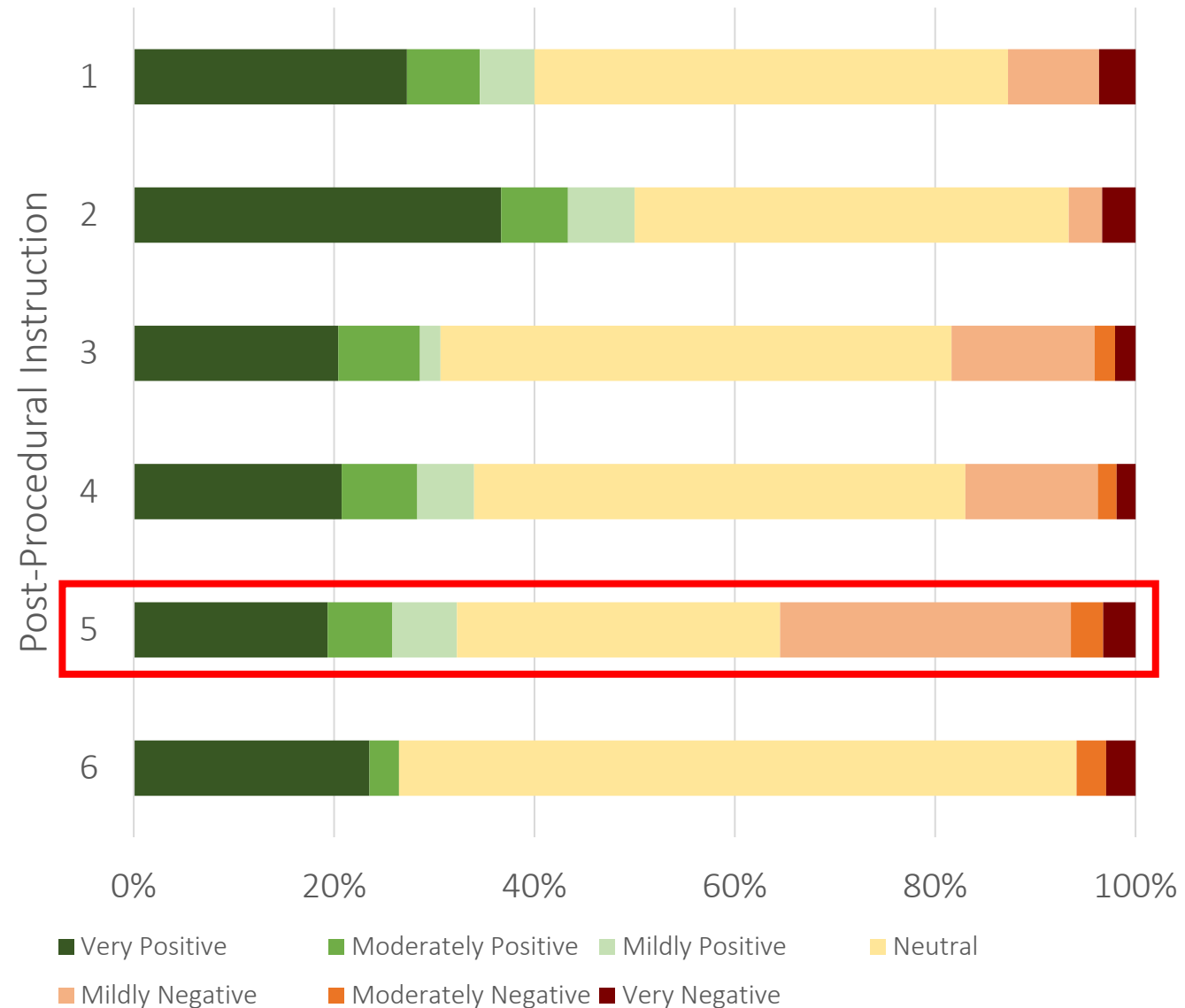
\* 56 patients completed the demographics portion of the survey, one opted not to; total participants: 57.

\*\* All 52 patients completed the highest level of education, but only 39 patients supplied age and gender.

# Results: CVP

Post-Procedural Instruction	Responses	Compliance
1. You may occasionally and briefly wet your wound in the shower or bath. Do not soak or scrub your wound, do not swim, and avoid periods of heavy perspiration until the Dermabond adhesive has naturally fallen off.	55	98.2%
2. If a protective dressing is being used, apply a fresh, dry bandage, being sure to keep the tape off the Dermabond adhesive film.	30	65.9%
3. Do not engage in driving, dangerous activities, business transactions, or legally binding contracts for up to 24 hours after the procedure.	49	76.5%
4. Light activity only for 24 hours. Avoid heavy lifting, straining or strenuous activity.	53	81.8%
<b>5. You should avoid repetitious movements of the arm with the port.</b>	<b>31</b>	<b>63.2%</b>
6. Avoid smoking and using tobacco products.	34	68.9%

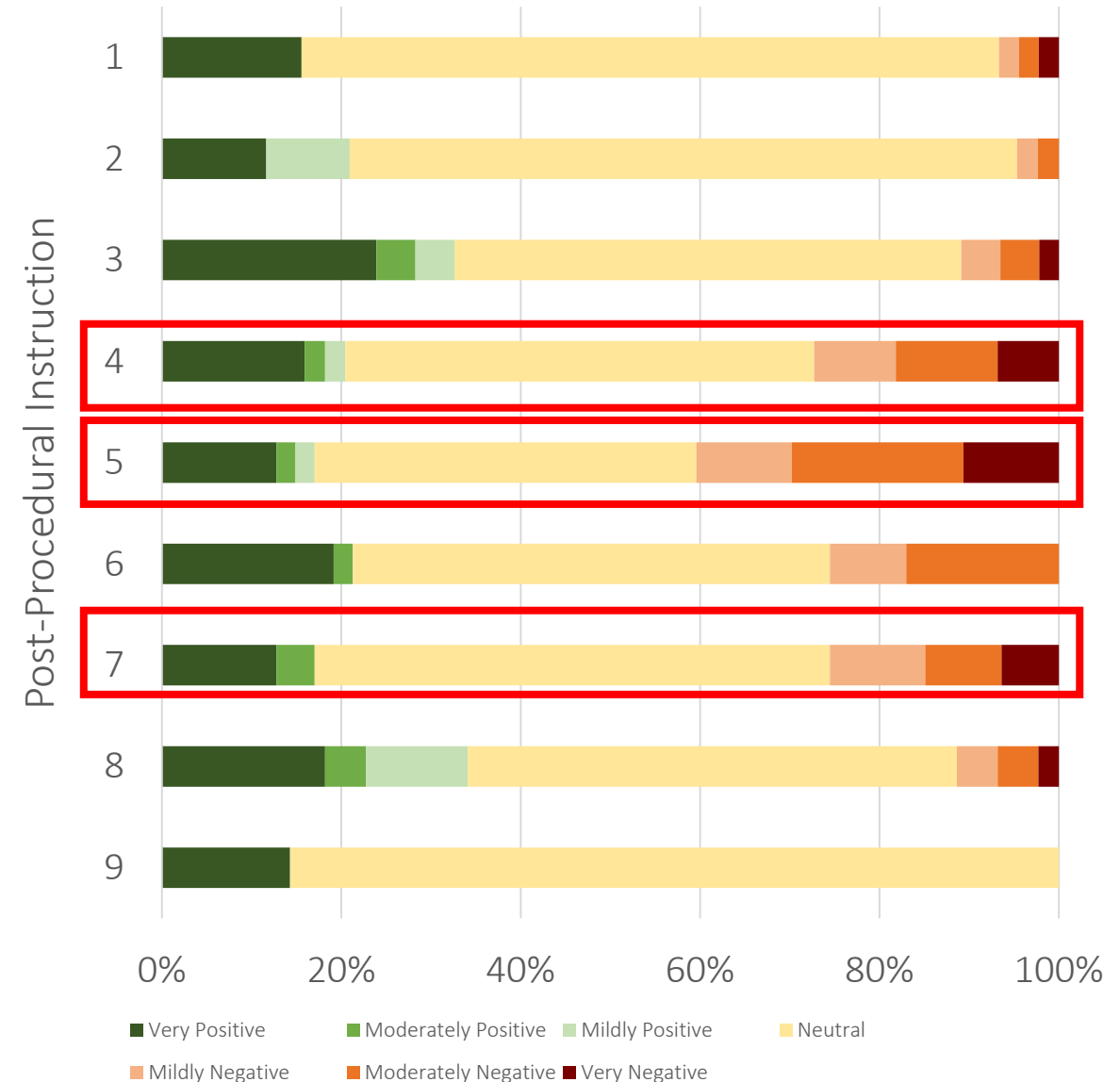
## CVP Placement Quality of Life



# Results: BT

Post-Procedural Instruction	Responses	Compliance
1. Do not engage in driving/dangerous activities for up to 24 hours after the procedure.	45	93.6%
2. Do not engage in business transactions or legally binding agreements for 24 hours after the procedure.	43	95.7%
3. Avoid heavy lifting: no more than 10lbs. Avoid straining or strenuous activity for 24 hours.	46	95.7%
<b>4. Avoid sleeping on the tube to prevent dislodgement. Keep tube taped at all times to prevent it from being pulled out.</b>	<b>44</b>	<b>91.1%</b>
<b>5. You may shower with cellophane covering the dressing. You may not submerge in a bath or pool.</b>	<b>47</b>	<b>86.0%</b>
6. Routinely flush with preservative free sterile saline twice a day or as directed. This may be in the form of the pre-filled syringes.	47	89.8%
<b>7. Change the dressing daily unless directed otherwise.</b>	<b>47</b>	<b>81.3%</b>
8. Have drainage bags, tubing and caps on hand at home in case your tube becomes clogged and/or you develop a fever.	44	97.9%
9. Avoid smoking and using tobacco products.	42	83.7%

## BT Change/Placement Quality of Life





# Conclusion

Our study provides a framework for systematically generating quality improvement research questions relevant to the patient experience.

<b>CVP placement</b>	<b>BT placement or change</b>		
“You should avoid repetitious movements of the arm with the port”	“You may shower with cellophane covering the dressing. You may not submerge in a bath or pool”	“Avoid sleeping on the tube to prevent dislodgement. Keep tube taped at all times to prevent it from being pulled out”	“Change the dressing daily unless directed otherwise”
No published studies recommending the specific instruction nor data demonstrating its clinical benefit and effect on outcomes	Limited results; studies on such practices with other implanted devices showed <b>no statistically significant increase in infection/ complication rates when showered/wet within 48h post-procedure</b>	No published studies recommending the specific instruction nor data demonstrating its clinical benefit and effect on outcomes	Cochrane review <b>inconclusive</b> on recommendation for frequency of dressing changes for central venous access devices and associated infection, mortality, and pain



# Discussion: Limitations and Future Directions

- Shifts in data collection procedures, low response rates, possible misinterpretation of survey instructions may have decreased precision of compliance rates
- Possible recall bias
- Moving forward:
  - Pre-post interventional follow-up study to assess patient satisfaction (phone survey) and complication rates (i.e. infection, dislodgment; chart review): 3mo baseline → implement changes in the post-procedure instructions for 3mo → reassess patient satisfaction and complication rates



JOHNS HOPKINS  
MEDICINE

CADTH Rapid Response Reports. Nephrostomy and Biliary Tube Management: A Review of the Clinical Evidence and Guidelines [Internet]. Ottawa (ON): Canadian Agency for Drugs and Technologies in Health; 2014 Sep.

Robbins J, Cromwell P, Korones DN. Swimming and central venous catheter-related infections in the child with cancer. *J Pediatr Oncol Nurs*. 1999; 16:51-6.

Königer J, Russ M, Schmidt R, Feilhauer K, Butters M. Postoperative wound healing in wound-water contact. *Zentralbl Chir*. 2000; 125(2): 157-60.

Dayton P, Feilmeier M, Sedberry S. Does Postoperative Showering or Bathing of a Surgical Site Increase the Incidence of Infection? A Systematic Review of the Literature. *J Foot Ankle Surg*. 2013; 52: 612–614.

Aburjania N, Sherazi S, Tchantchaleishvili V, Alexis JD, Hay CM. Stopping conventional showering decreases Pseudomonas infections in left ventricular assist device patients. *Int J Artif Organs*. 2017 Jun 9; 40(6):282-285.

Yu AL, Alfieri DC, Bartucci KN, Holzmeister AM, Rees HW. Wound Hygiene Practices After Total Knee Arthroplasty: Does It Matter? *J Arthroplasty*. 2016 Oct;31(10):2256-9.

Hsieh PY, Chen KY, Chen HY, Sheng WH, Chang CH, Wang CL, Chiag PY, et al. Postoperative Showering for Clean and Clean-contaminated Wounds: A Prospective, Randomized Controlled Trial. *Ann Surg*. 2016; 263: 931-936.

Gavin NC, Webster J, Chan RJ, Rickard CM. Frequency of dressing changes for central venous access devices on catheter-related infections. *Cochrane Database Syst Rev*. 2016 Feb 1;2:CD009213.

Akinsola B, Cheng J, Zmitrovich A, Khan N, Jain S. Improving Discharge Instructions in a Pediatric Emergency Department: Impact of a Quality Initiative. *Pediatric Emergency Care*. Jan 2017; 33(1): 10-13.

