

## Clinical Study of a New Urine Collection Bag

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Objective: To assess the utility and acceptance of a new urine drainage bag, the “Belly Bag” (Life-Tech, Inc., Stafford, Texas)

### Background:

A new drainage bag has been introduced for use in patients who wear Foley catheters. It is worn around the waist. The bag uses the well-documented basic principle of *inherent resting bladder pressure* (muscle tone plus that from varying intraperitoneal pressures) to push urine "uphill" into the bag. This is the same principle relied on in the current practice of taping the catheter to the abdomen or thigh to propel urine into standard bedside or leg bags.

The bag holds 1,000 cc., and is worn 24 hours a day. The large capacity and abdominal location eliminates the need to change from bedside to leg bag and back depending on the patient's ambulatory status, thus allowing twenty-four hour use. A clinical study ( Warren, Michael M. <sup>1</sup>) showed that there is no bladder residual using this bag, and no increased clinical infections, while allowing for improved activities of daily living, easier concealability and a more natural drainage position. The product has been approved for marketing by the F.D.A.

### Materials and methods:

A total of 29 patients were selected; 10 patients from the Ambulatory Surgical Unit (ASU), 9 patients from two floor units (1South and 3WB), 5 patients from General Rehabilitation, 3 patients from the Urodynamics Unit, and 2 patients from the Observation Unit (OBS). 27 Patients completed the study. All participants agreed to try the new bag, and were given instructions and shown how to use the bag. The new bag, the “Belly Bag”, is manufactured and supplied by Life-Tech, Inc., of Stafford, Texas<sup>2</sup>.

Physicians completing questionnaires: 3 Urologists, 2 Rehabilitation physicians, 1 resident physician, and 1 Physician Assistant.

Staff members completing questionnaire: 5 Registered Nurses, 1 Licensed Practical Nurse, 3 Nursing Assistants, and 1 physical therapist.

Patient population spectrum included in the study:

- Urinary retention s/p urethropexy & diverticulectomy
- Urge Incontinence s/p urethral diverticulum & fascial Sling
- Urethral diverticulectomy and fascial sling
- Urethroscopy S/P fractured hip
- Frail elderly
- S/P urethral stricture w/ urethrostomy & cystoscopy
- Urethropexy and fascial Sling
- Radical / Total Prostatectomy (2)
- ARF w/Bilat. nephrostomy Tubes
- Cystoscopy & stent Placement W/ renal mass
- Total hip arthroplasty
- Rt. brain stem stroke
- Suprapubic catheter S/P/ fascial sling
- Lt. Ureteral Obstruction
- Uremia
- ARF W/ bil. nephrostomies
- Embolitic stroke
- Total hysterectomy

A standardized questionnaire was given to each patient as well as each of the caregivers, and a final followup obtained by telephone from the patient and/or caregiver.

General comments (27 patients, 10 staff members, 7 physicians):

All agreed that the new bag was a significant improvement over the leg and bedside bags.

Specific comments:

- Ease of movement with ambulation
- Decreased pain with movement (doesn't pull on the catheter)
- More comfortable sleep
- Easily concealable under clothing; emptied easily over the toilet
- Far less inconvenient than switching between a leg bag and bedside bag
- One complained that the bag got wet when bathing (although simple patting dry with a towel will usually suffice).

A simple questionnaire was given to each caregiver/staff member and each patient. The results are as follows:

Note: *the bulk of the patients were discharged soon after receiving the bag, so the physicians and staff could not fully answer all the questions.*

**Pitt County Memorial Hospital Belly Bag Pilot Study**

**Respondents / questions:**

**Caregivers (10)**

	<b>AgreeStrongly</b>	<b>Agree</b>	<b>Don'tKnow</b>
Improved ambulation,recovery time	6	4	
Increases ADL,social,mental,wellbeing	8	1	
Reduces inadvertant self extraction	9		1
Reduces skin damage-bag,straps	9	1	1
Eliminates change leg to bed bag and less clinical infection risk	9		1
<b>Totals:</b>	<u>41</u>	<u>6</u>	<u>3</u>
Percent of total <b>caregiver</b> responses:	82.00%	12.00%	6.00%

**Physicians (6)**

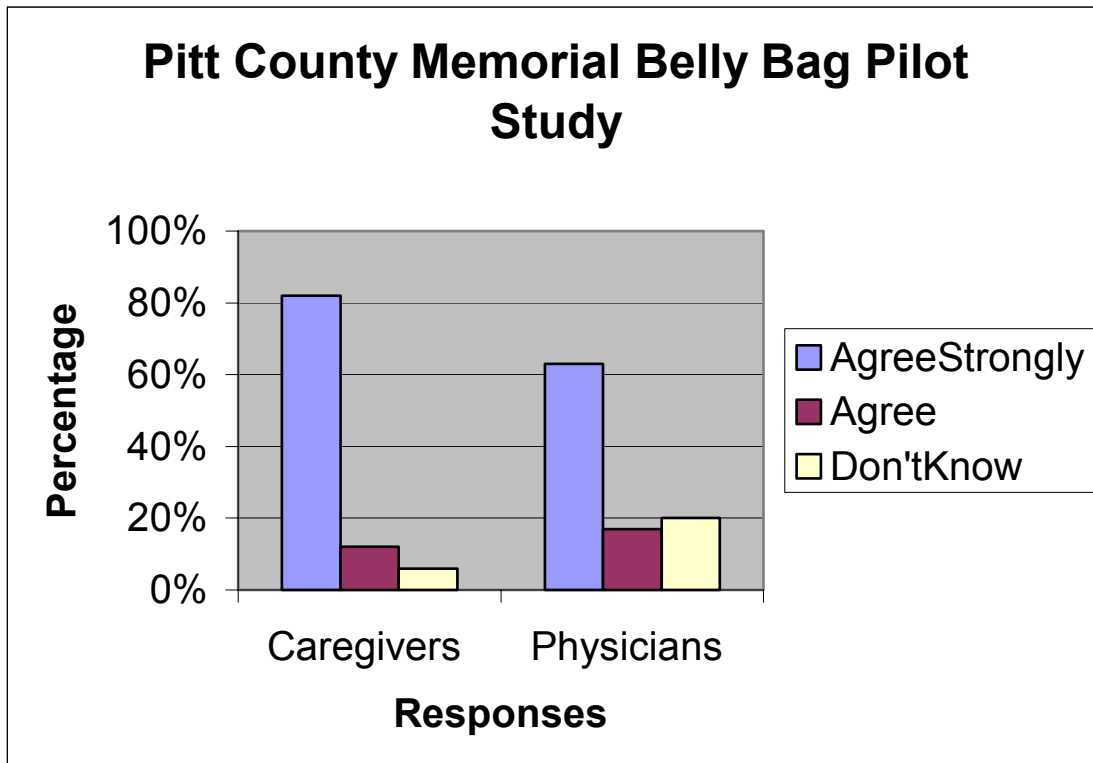
	<b>AgreeStrongly</b>	<b>Agree</b>	<b>Don'tKnow</b>
Improved ambulation,recovery time	6		1
Increases ADL,social,mental,wellbeing	5		2
Reduces inadvertant self extraction	5	1	1
Reduces skin damage-bag,straps	6		1
Eliminates change leg to bed bag and less clinical infection risk		5	2
<b>Totals:</b>	<u>22</u>	<u>6</u>	<u>7</u>
Percent of total <b>physician</b> responses:	62.86%	17.14%	20.00%

**Total responses:**

	<b>AgreeStrongly</b>	<b>Agree</b>	<b>Don'tKnow</b>
Caregivers (10) Totals:	41	6	3
Physicians (6) Totals:	22	6	7

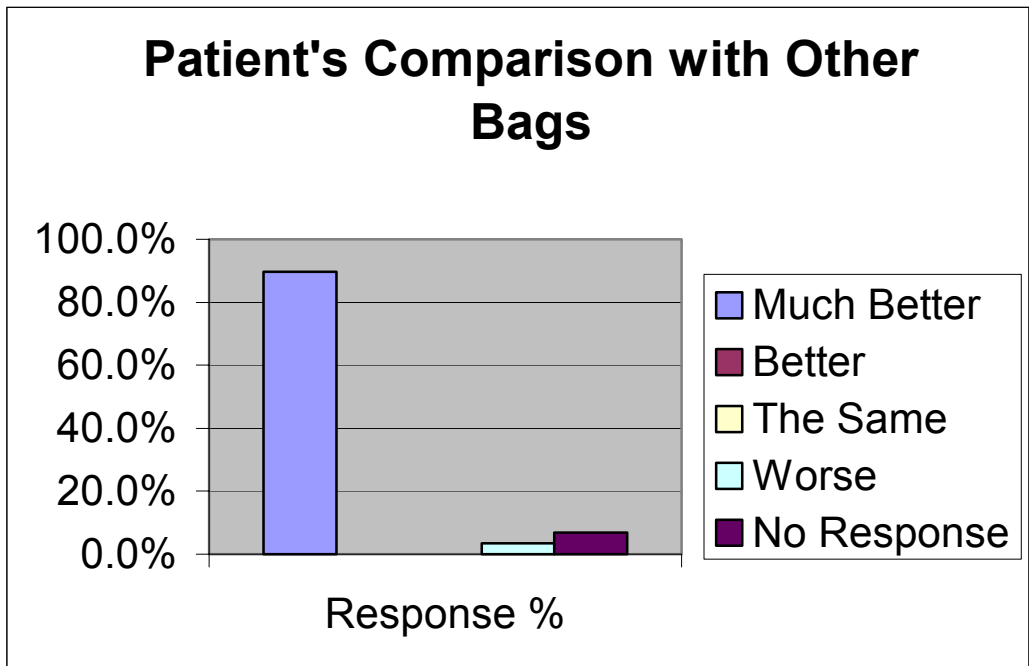
**Response Percentages:**

	<b>AgreeStrongly</b>	<b>Agree</b>	<b>Don'tKnow</b>
Caregivers	82%	12%	6%
Physicians	63%	17%	20%



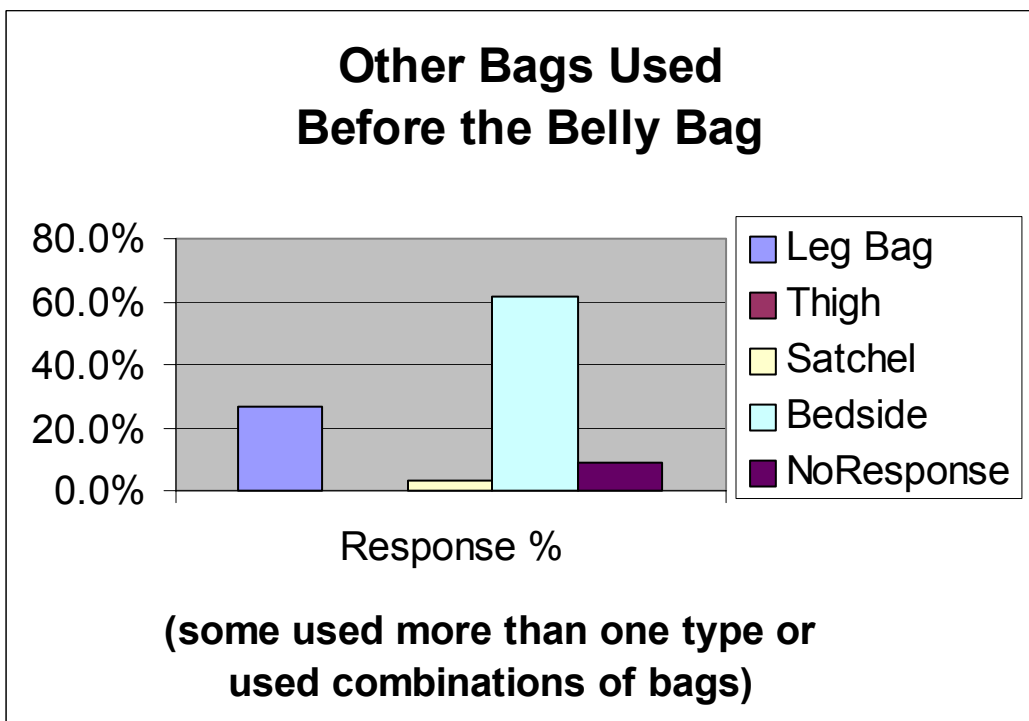
**Patients (29)**

<b>The "Belly Bag" compared with other bags:</b>	<b>Much Better</b>	<b>Better</b>	<b>The Same</b>	<b>Worse</b>	<b>No Response</b>
<b>Number:</b>	26	0	0	1	2
<b>Response</b>	89.7%	0.0%	0.0%	3.4%	6.9%



**Other Bags Used:**

<b>Number</b>	<b>Leg Bag</b>	<b>Thigh</b>	<b>Satchel</b>	<b>Bedside</b>	<b>NoResponse</b>
	9	0	1	21	3
<b>Response</b>	26.5%	0.0%	2.9%	61.8%	8.8%



## **Conclusions:**

A new urinary drainage bag was tested in a pilot study at Pitt County Memorial Hospital and proved to be of great benefit to the patient's ambulation, self-esteem, convenience, and Activities of Daily Living. It eliminates the need for two separate bags (leg and bedside). Since the bag serves the function of both leg and bedside bags, it minimizes the risk of nosocomial infections and inadvertent self-extraction with resulting trauma.

Caregivers, physicians, and patients filled out assessment questionnaires, and their evaluations were positive.

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## **Patient's unedited comments:**

1. "Fairly easy to handle and comfortable; I wore loose clothes-couldn't tell I was wearing it. It worked great. I would highly recommend it. I would pay for it because it made my life so much more convenient."
- 2."No long length pulling on my penis-that was better; but they used a large bore catheter which caused some breakdown on my meatus. Overcame that problem by lubricating the tube."
- 3."I moved well with it and I could wear it under my clothes. I had some leakage around the tip of my penis, but that had nothing to do with the bag."
- 4."Very pleased with the Belly Bag-my sister is able to empty it herself. This has helped so much and made my 82 year old sister more independent."
- 5."I would suggest it to anyone. I would recommend it to anyone. With clothes, it was fine! It was such a hassle to wear the bed bag. After I had my accident, I wore it for 9 days and it was wonderful."
- 6."I liked the Belly Bag for convenient emptying and not pulling-but I was having a lot of belly pack(?) so it was a little uncomfortable. Eventually that was the case-the Belly Bag was more convenient than the leg bag."
- 7."The leg bag straps are too tight and dig into (my) skin"
- 8."The Belly Bag was worn while on work site (under normal work clothes) and basically 24 hours a day. If emptied on a more or less regular basis, it presented far less problems as far as my awareness and no sensation of bag possibly falling/sliding on leg.At night, bag had to be emptied during sleep, but far more comfortable to sleep with/on versus leg bag which had to be attached to bed and thus at times became cumbersome. (The Belly bag was far less inconvenient than switching between leg bag and bed bag at night."
- 9."I like the convenience-didn't have to worry about falling off your leg. It was easy to empty."
- 10."It's larger-so I don't have to get up at night to change it. It is comfortable and it doesn't pull on my penis."
- 11."I sleep better at night. I really like it !"

12."Feels like more pressure in bladder area with Belly Bag. Concerns about bag being checked by Home Health nurse."

13."No problems sleeping."

14."Feel more at ease with the Belly Bag-I'm scared I was going to step on the bedside bag and pull it out."

15."It's much easier with the Belly Bag-I don't have to carry it around. Easier to sleep with this bag. With showering, it got wet-put it in a 'Ziploc' bag."

16."Much better than anything else we had used before; slept well with it. Easy to empty."

17."Belly Bag was great! My husband was showing the bag because he was so proud of it. No one knew he was wearing it-it tucked under his clothes well."

18."Belly Bag was great !"

19."I like the bags real well! Much better than the leg bag and bed bag."

20."Much better. My father is 83 years old and it was better for him to get around."

21."Can move better with it. Can empty it better than the other bag."

22."I have had lots of experience with bed bags in the past, and I would highly recommend this bag. I can move freely and no one knows I'm wearing it."

23."I liked the maneuverability of it. I like it much better than the leg bag."

24."We liked the Belly Bag really well. Able to move about easier."

25."I really like the bag-it's so easy to use and empty. I just need to make sure I close it (valve) tight so it doesn't leak."

26."I can navigate better! When I move with the walker I don't trip over the tubes."

27."It works good. I move around much better. I wore it under my clothes fine."