

Table 1. Summary of all variables that will be used in the mathematical model to perform a cost-benefit analysis between robotic assisted minimally invasive renal transplantation versus open surgery. All the variables were extracted from the most recent scientific literature.

Authors	Journal, Year	Title	Surgery	Costs or Charges	Robotic	Laparoscopic	Open
Seideman et al. [45]	Journal of Endourology, 2012	Cost comparison of Robot-Assisted and Laparoscopic Pyeloplasty	Pyeloplasty	Purchase price for da Vinci robot	\$1,500,000	\$0	-
				Annual maintenance	\$150,000	\$0	-
				Robot cost per case	\$1,214	\$0	-
				Operating room costs	\$2,990	\$2,772	-
				Operating room costs per minute	\$12.90	\$12.90	-
				Equipment cost	\$406	\$1,375	-
				Recovery room	\$270	\$270	-
				Direct cost	\$9,065	\$10,635	-
Ferguson et al. [39]	Journal of Endourology, 2012	Cost Analysis of Robot-Assisted Laparoscopic Versus Hand-Assisted Laparoscopic Partial Nephrectomy	Partial Nephrectomy	Postoperative hospital costs (Range \$3683-\$5058)	\$4,371	\$5,984	\$6,804
				Surgeon fees	\$1,719	\$1,719	\$1,719
				Operating room costs	\$7,276	\$5,708	\$5,017
				Operating room times (min.)	243	236	250
				Disposables	\$669	\$1,009	\$0
				Overall costs	\$13,439 (12,618-14,260)	\$13,560 (12,149-14,971)	-
				Length of stay (days)	2.45 (2.07-2.83)	3.48 (2.99-3.99)	3.96 (3.35-4.5)
				Ahmed et al.[38]	BJUI International, 2012	Assessing the Cost Effectiveness of Robotics in Urological Surgery - A Systematic Review	Prostatic surgery
Lotan et al. 2005 (professional cost)	\$1,688	\$1,688	\$1,594				
Lotan et al. 2006 (surgical equipment)	\$533	\$1,705	\$75				
Lotan et al. 2007 (operating room)	\$2,204	\$2,876	\$2,428				
Scales et al. 2005 (total cost)	\$8,929	-	\$8,146				
Scales et al. 2005 (professional cost)	\$2,173	-	\$1,787				
Scales et al. 2005 (surgical equipment)	\$1,704	-	\$575				
Scales et al. 2005 (operating room)	\$2,183	-	\$8,929				
Burgess et al. 2006	\$39,315	\$29,771	\$31,518				
Burgess et al. 2006 (operative charges)	\$25,443	\$16,320	\$16,522				
Burgess et al. 2006 (nonoperative charges)	\$13,782	\$13,451	\$14,663				
Mouraviev et al. 2007 (total cost)	\$10,047	\$10,536	\$10,704				
Mouraviev et al. 2007 (surgical equipment)	\$3,441	\$2,788	\$2,471				
Lotan et al. 2010 (total cost)	\$10,269	\$8,557	\$6,473				
Lotan et al. 2010 (operative charges)	\$5,670	\$4,021	\$6,988				
Lotan et al. 2010 (non-operative charges)	\$2,887	\$2,452	\$3,281				

				Lotan et al. 2010 (professional charges)	\$2,662	\$2,250	\$3,007	
				Joseph et al. 2008 (total cost)	\$5,410	\$3,876	\$1,870	
				Joseph et al. 2008 (professional costs)	\$494	\$832	\$330	
				Joseph et al. 2008 (surgical equipment)	\$4,805	\$2,933	\$1,429	
				Bolenz et al. 2010 (total costs)	\$6,752	\$5,687	\$4,437	
				Bolenz et al. 2010 (surgical equipment)	\$2,015	\$725	\$185	
				Bolenz et al. 2010 (operating room costs)	\$2,798	\$2,453	\$1,611	
			cystectomy	Smith et al. 2010 (total costs)	\$16,248	-	\$14,608	
				Lee et al. 2009 (total costs)	\$22,685	-	\$20,719	
				Lee et al. 2009 (total costs)	\$20,862	-	\$19,057	
				Lee et al. 2009 (total costs)	\$20,659	-	\$20,659	
				Lee et al. 2009 (total costs)	\$22,102	-	\$22,697	
				Lee et al. 2009 (operative charges)	\$19,034	-	\$18,303	
				Lee et al. 2009 (operative charges)	\$20,190	-	\$20,178	
				Lee et al. 2009 (operative charges)	\$20,862	-	\$19,057	
				Lee et al. 2009 (professional)	\$2,271	-	\$2,271	
				Lee et al. 2009 (professional)	\$2,442	-	\$2,442	
Chatterjee et al. [40]	Annals of Plastic Surgery, 2015	Complex Ventral Hernia Repair Using Component Separation With or Without Biologic Mesh		Incisional Hernia Repair	Successful incisional hernia repair with biologic mesh			\$7,983
					Successful incisional hernia repair without biologic mesh			\$7,715
					Wound infection without biologic mesh			\$10,471
					Wound infection with biologic mesh			\$10,740
			Wound dehiscence without biologic mesh				\$11,103	
			Wound dehiscence with biologic mesh				\$11,372	
			Hernia recurrence without biologic mesh				\$14,352	
Hernia recurrence with biologic mesh			\$14,620					
Fisher et al. [46]	Plastic and Reconstructive Surgery, 2016	A Cost-Utility Assessment of Mesh Selection in Clean-Contaminated Ventral Hernia Repair	Incisional Hernia Repair	Successful repair of incisional hernia with synthetic mesh			\$11,226 (range \$9,542-\$12,910)	
				Successful repair of incisional hernia with biologic mesh			\$17,958 (range \$15,264-\$20,651)	
				Recurrent hernia with successful repair with synthetic mesh			\$22,183 (range \$18,856-\$25,511)	

				<p>Recurrent hernia with successful repair with biologic mesh</p> <p>Superficial wound infection (cellulitis) with synthetic mesh</p> <p>Superficial wound infection (cellulitis) with biologic mesh</p> <p>Wound infection requiring IV antibiotics (with synthetic mesh)</p> <p>Wound infection requiring IV antibiotics (with biologic mesh)</p> <p>Wound infection requiring reoperation (with synthetic mesh)</p> <p>Wound infection requiring reoperation (with biologic mesh)</p> <p>Recurrence rate of incisional hernia after repair with synthetic mesh</p> <p>Recurrence rate of incisional hernia after repair with biologic mesh</p> <p>Reoperation after recurrence with synthetic mesh</p> <p>Reoperation after recurrence with biologic mesh</p>	<p>\$28,915 (range \$24,578-\$33,252)</p> <p>\$11,266 (range \$9,576-\$12,956)</p> <p>\$17,998 (range \$15,298-\$20,698)</p> <p>\$17,405 (range \$14,794-\$20,016)</p> <p>\$24,137 (range \$20,516-\$27,757)</p> <p>\$23,772 (range \$20,206-\$27,337)</p> <p>\$30,504 (range \$25,928-\$35,079)</p> <p>17% (range 15-20)</p> <p>14% (range 12-16)</p> <p>88% (range 74-100)</p> <p>76% (range 64-87)</p>
Chopra et al.[21]	Plastic and Reconstructive Surgery, 2016	The Economic Impact of Closed-Incision Negative-Pressure Therapy in High-Risk Abdominal Incisions: A Cost-Utility Analysis	Ventral Hernia Repair	<p>Cost of successful incisional hernia repair</p> <p>Cost of surgical site infection</p> <p>Hospital stay for successful incisional hernia repair</p> <p>Hospital stay for successful incisional hernia complicated by surgical site infection</p> <p>Average home therapy for surgical site infection</p> <p>Cost for standard dressings for wound care</p> <p>Cost for closed-incision negative pressure therapy</p> <p>Utility for uncomplicated incisional hernia repair</p> <p>Utility for complicated incisional hernia repair</p>	<p>\$784</p> <p>\$21,569</p> <p>2.3 days</p> <p>9.7 days</p> <p>28 days</p> <p>\$5,170</p> <p>\$3,004</p> <p>0.7</p> <p>0.49</p>
Zimlichman et al. [47]	JAMA Intern Med. 2013	Health Care-Associated Infections: A Meta-Analysis of Costs and Financial Impact on the US Health Care System	Abdominal Surgery	<p>Average attributable cost per surgical-site infection in 2012 in the USA</p>	<p>\$20,785</p>
Fisher et al. [31]	Annals of Surgery, 2016	A Risk Model and Cost Analysis of Incisional Hernia After Elective Abdominal Surgery Based on 12,373 Cases	Abdominal Surgery	<p>Incidence of surgically treated incisional hernias</p> <p>Incidence of superficial infection</p> <p>Incidence of wound dehiscence</p> <p>Incidence of seroma</p> <p>Incidence of hematoma</p> <p>Incidence of hernia after superficial infection</p>	<p>3.50%</p> <p>2.3-4.3%</p> <p>0.4-0.7%</p> <p>0.2-0.3%</p> <p>0.7-1.2%</p> <p>7.6-9.3%</p>

			Incidence of hernia after wound dehiscence	6.40%
			Incidence of hernia after seroma	11.50%
			Incidence of hernia after hematoma	1.30%
			Total cost for incisional hernia repair (SD)	\$27,065 (51,805)
			Total readmission cost (SD)	\$34,489 (60,901)
			Risk of recurrent hernia after repair	10-20%
			Cost for readmission after hernia repair	\$57,267 (78,929)
			Cost for 2 hernia repair	\$98,414 (119,765)