Quality surgical instruments best investment

Authors: Dahl G • Ölveback T. • Wiklund L.

Source: Technicians at sterilization unit, Ersta Diakoni Hospital, Stockholm , Sweden.

Presented: SEORNA, Swedish Operating Nurse Association Conference meeting, 29-30 November 2012.

Abstract

Quality surgical instruments can have more expensive upfront costs but do they deliver over a lifetime? One brand, Stille, markets itself as having a lifetime of 30 years. To test this, the scissors in use in a small but busy surgical center had a spot check at the surgical sterilization unit. Most scissors located were much older than 30 years (74% older than 50 years) . This type of evidence can be used in purchase making decision to determine lifetime costs prior to investment in surgical instruments. To control costs, purchasers should consider quality and life time costs of an instrument.

Photo 1: Scissors from antiquity.

Introduction

Modern cross-bladed scissors (Photo 1) were invented in ancient Rome (roughly A.D. 100)[1]. Since then they have been appropriated by health care workers to perform surgical procedures. In comparison with many capital expenditures, surgical scissors are not expensive. However, as with many purchasing decisions, it can be a complex one for the practice manager, surgeon, hospital supply manager, group purchasing organization and operating room nurse. It is difficult in part, because quality and lifetime costs of a tool can be difficult to measure[2].

Purpose

The purpose of this study is to determine if Stille premium instruments do deliver on the manufacturer warranty of 30 years. The manufacturer claims that the product will last a "practitioners career". The focus is on surgical scissors as these are instruments in high rotation and so both used and cleaned often. Also, if they do not function well, they will be returned by the operating room nurse and surgeon for disposal. For these instruments, lifetime costs are paramount.

Methods

On November 12, 2012 at 14:00, 3 sterilization technicians (Gunnel Dahl, Therese Ölveback, Lena Wiklund) inventoried the available scissors at Ersta Diakoni in Sweden (Photo 2).

Photo 2: Comparing surgical scissors to their manufacture year code.

Inclusion criteria: all scissors in the central sterilization area that were not yet packaged or were packaged individually (these packages were opened).

Excluded: those scissors in use in the operating room and those included in larger kits (large kits were not opened).

Year of manufacture of the scissors as defined by the inscribed code was noted as compared to that on the manufacturer year code list provided by Stille (See table 1).

Year Codes Stille Instruments			
Year	Code	Year	Code
1938	8	1978	D10
1939	9	1979	E10
1940	0	1980	F10
1941	1	1981	G10
1942	2	1982	H10
1943-1948	Unstamped	1983	A
1949	-	1984	B
1950	-	1985	C
1951	1	1986	D
1952	1	1987	E
1953	Unstamped	1988	F
1954	Unstamped	1989	G
1955	E9	1990	H
1956	F9	1991	I
1957	G9	1992	K
1958	H9	1993	L
1959	J9	1994	M
1960	K9	1995	N
1961	L9	1996	O
1962	M9	1997	P
1963	N9	1998	Q
1964	O9	1999	R
1965	P9	2000	S
1966	Q9	2001	T
1967	R9	2002	Y
1968	S9	2003	Z
1969	T9	2004	4
1970	U9	2005	5
1971	V9	2006	6
1972	X9	2007	7
1973	Y9	2008	8
1974	Z9	2009	9
1975	A10	2010	10
1976	B10	2011	11
1977	C10	2012	12

Table 1: Manufacturer provided year of production list

Photo 3: All Stille scissors can be taken apart and realigned at service.

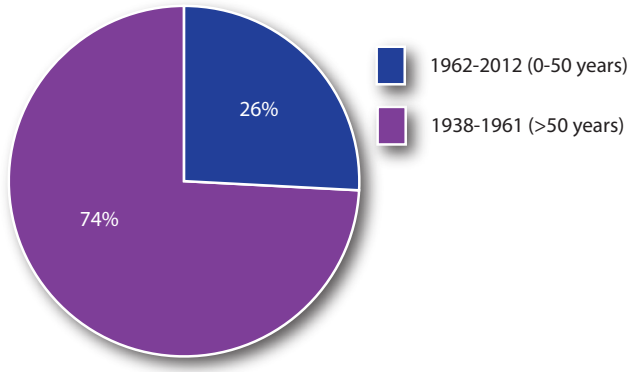
Results

The results showed that 17/23 or 74 % of the scissors had been in service for more than 50 years (See results table and graph).

Year	Number of Scissors
1938	2
1939	3
1940	1
1941	2
1942	2
1943-1948, 1953 or 1954	2
1949 or 1950	5
1978	1
1985	1
1986	2
1992	2

Results Table: 17 instruments more than 50 years old.

Number of scissors in service from each manufacturing period



Results graph: 74% scissors with more than 50 years of service

Discussion

For those patients admitted for surgery, it is the operating room costs that are the highest portion of the bill[3]. However costs and charges are complex. For example, some hospital departments which do not directly charge (medical records) are assigned as a cost to the operating room in some budgets. So taking a deeper look at costs in the operating room is important. Scissors and other frequent surgical instruments are one area to examine.

It can be quite obvious that reusable instruments are a better investment than one-time use as was seen in a study of laparoscopic instruments where the "total cost for single-use instruments would have been more than seven times that for reusable instruments"[4]. It takes more work to understand the value difference between reusable instruments: One method is to understand the true lifetime of the instruments.

Arguably the scissors are the most important device for the patient and healthcare provider. They run the gamut from low cost, poor performance, one-time-use instruments all the way to higher cost, premium performance scissors with long warranties. Stille scissors are appreciated by surgeons immediately and through their lifetime for their "feel" but this can be hard for those responsible for purchasing to value. Operating room nurses, Hospital administrators, as well as central supply and sterilizations personnel also appreciate the product for its long lifetime of reliable cutting. But even this long life time is not necessarily taken into consideration by the hospital economists who will push for lowest costs for that budget. This study demonstrates that lifetimes of quality instruments can be far longer than even the guarantee. Future comparisons to other brands would be helpful - although to be fair none offer such a specific guarantee.

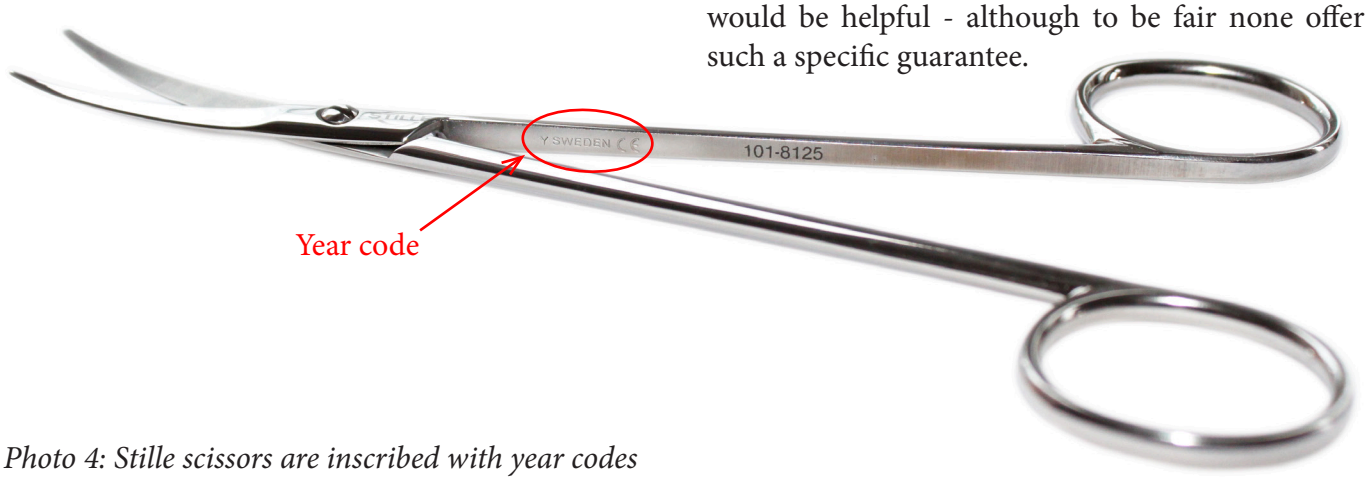


Photo 4: Stille scissors are inscribed with year codes

Conclusion

Compared to other instruments companies Stille offers the 30 year warranty which in this analysis was born out by actual usage and lifetime. In fact many scissors in use are over 50 years old. Still scissors function well because of

- Great care by the OR nurse and sterilization technician team.
- Service. Stille offers service on its instruments. Stille routinely remove the central joint screw at service. Hence scissors can be polished and realigned after multiple sharpenings.
- Design. Stille products are polished to a high shine which makes the product more resistant to corrosion from frequent washing and sterilization.
- Manufacturing. Stille scissors are hand forged and not cut out from sheets of metal.

Premium scissors such as Stille which offer a 30 year warranty are able to reach their manufacture guaranteed life time… and more. To control costs, purchasers should consider quality and life time costs of an instrument.

References

1. Photo: http://www.hsl.virginia.edu/historical/artifacts/antiqua/instruments.cfm

2. Hoeksema J. Taking steps to control costs in the OR. AORN J. 2011 Dec;94(6 Suppl):S79-84; quiz S85-6. PubMed PMID: 22152755

3. Macario, Alex MD, MBA; Vitez, Terry S. MD; Dunn, Brian BA; McDonald, Tom MD. Where Are the Costs in Perioperative Care?: Analysis of Hospital Costs and Charges for Inpatient Surgical Care. Anesthesiology: December 1995 - Volume 83 - Issue 6 - p 1138–1144

4. Gabriel N Schaer, MD, Ossi R Koechli, MD and Urs Haller, MD. Single-use versus reusable laparoscopic surgical instruments: A comparative cost analysis. American Journal of Obstetrics & Gynecology Volume 173, Issue 6 , Pages 1812-1815, December 1995