

Custom Procedure Packs - The Regina Experience

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A custom procedure pack is a pre-packed bundle containing disposable drapes, gowns, and other items such as suction, cauteries etc.

Regina Qu'Appelle Health Region's custom procedure pack (custom pack) experience began in Regina in 1997. The first pack made for cardiovascular surgery – specifically for coronary artery bypass grafts (CABG). The reason we needed this pack was initially required for reasons not related to budgets. Our linen quality was poor and, as a result, our open-heart patients were cold and wet when they were transported to intensive care. They also had to be defibrillated in the Operating Room because of low body temperatures. Once we started using the disposable drapes, in the custom pack, the patients stayed both warm and dry and the need to defibrillate was reduced. An additional benefit was that the length of stay in intensive care was shortened by an average of two days for a normal patient. With the cost for an Intensive Care patient at \$700 a day, and assuming ten cases per week, the annual savings would be approximately \$728,000.

The Issues

After implementing the CABG pack we decided to expand on our pack program as a way to resolve some issues in other areas. In addition to improved patient comfort and recovery we had challenges in the areas of linen supply, the amalgamation of three hospitals, standardization, and time-management/cost effectiveness.

Linen Supply

We had been experiencing several problems with our linen supply. One of the biggest problems was a lack of supply. The linen for our hospitals came from an off-site, hospital-owned, central laundry. We were constantly falling short of our daily OR quota for linen bundles. When assembling our bundles we often discovered we were missing the main drapes. This led to assembly delays.



Photo by J. Porteous

Open custom pack

The quality of linen was an issue of equal concern to the pack room staff, the OR nurses, and the surgeons. Some linen drapes are designed for a limited number of uses. The laundry had no system for monitoring and controlling the number of uses and, as a result, the drapes were often used too often, became thin and began to lack water repellency. The OR often reported strikethrough – a big concern as it can mean result in contamination of the operative area.

Another linen problem was that there were no specialty drapes available. The operating room staff were trying to adjust the basic drapes to fit different patient positions. Consequently drapes were being cut and ruined and needed regular replacement.

The OR staff and surgeons also found the cloth gowns to be heavy and hot. For long procedures they were very uncomfortable. For operations involving a lot of blood loss the surgeons were finding their scrubs soaked in blood and fluid under the gown proving that the gowns had no water repellency.

Ongoing linen shortages had also led to a poor relationship between the processing staff and the laundry. The laundry staff suspected that hospitals were over ordering, and hoarding, linen and the processing staff felt the laundry was deliberately short-changing them on linen supply.

Amalgamation

As a region we were fortunate to already have custom packs in production when the

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Custom Procedure Packs (cont.)

amalgamation of three hospitals (Plains, Pasqua, and Regina General) began. The closure of the Plains hospital, and the transferring of its services to the remaining two hospitals was extremely stressful for the OR and the processing staff. The other two sites were not prepared for the volume of work that resulted from the move of additional procedures in to the central processing area. If the preparation of custom packs had not already been implemented then two additional full-time equivalents (FTEs) would have been required at a cost of approximately \$48,000 per year.

Standardization:

Standardization was an issue even before amalgamation. Surgeons were working at all three sites. And, in some cases, using different instrument sets and different draping procedures in each location. To minimize confusion and streamline preparation, we began to prepare packs that were the same for all surgeons at all sites. The surgeons accepted it, it worked very well during the teaching process, and it was generally considered a successful change.

Cost-Effectiveness/Time Management:

Prior to the implementation of custom packs our pack room required one full-time supervisor and two other full time staff, every day, for the folding of linen and preparation of bundles. At the end of a busy, hectic day additional time was required to put away items that had not been used or had been picked in error by the OR staff. Usually the equivalent of a full supply cart was sent back to processing from the OR. It could take as long as an hour to put these items away. The annual cost for this task was approximately \$3,000 - \$4,000. The extra handling of these items also increased the chance of contamination.

The Implementation Process

A custom pack contains all of the sterile, single-use, items required for a specific procedure. The packs are built specifically for our hospitals and for each procedure.

The contents of a basic pack are:

- 1) the back table cover (used as the pack's outer wrap);
- 2) the drapes suitable for the position of the patient;
- 3) the prep dish and components;
- 4) gowns for the nurse, surgeon, and assistant;
- 5) and a variety of other items such as dressings, needle board, cautery, and scalpel blades.

After we created our first pack (for CABG) other services began to request them. Neurosurgery now has a pack for craniotomies and a disc pack for back surgery. When orthopaedics requested a pack, standardization came into effect (unlike some procedures, orthopaedic surgery is done at all three of our region's hospitals). Minor and major orthopaedic packs standardized for all three hospitals and general surgery packs soon followed.

Life After Packs

After the custom packs, with single use drapes, were implemented the region's linen supply issues were resolved. For a large variety of procedures we now have specific drapes that fit perfectly without gaps, leaks, or strike-through. The gowns light, cool, and totally water-repellent.

The staff requirements in our linen room have been reduced from three FTEs to one FTE (the additional staff were relocated to other areas in



Custom pack contents

Photo by J. Porteous

"Backing down wasn't even an option."

In touch: with Peggy Doyle, Director of Perioperative Nursing

It was bizarre. Out of the norm. Just plain unheard of. Why would a healthcare facility abandon the long-held tradition of powdered latex surgical gloves just because of something that appeared to be as miniscule as air particulates? These were some common responses Peggy Doyle, Director of Perioperative Nursing received as she lobbied to change her OR over to powder-free surgical gloves.

But she wouldn't back down. It was 1991, and she was listening to a great number of OR and PACU nurses who were experiencing unexplained allergic reactions. Inhaler usage was increasing among the nurses, and soon, there were other workers throughout the facility who were complaining of similar symptoms. Starch powder from latex medical gloves had found its way into the air, creating an environment that Peggy believed prevented some of the staff from returning to work.

Peggy's first challenge was finding a powder-free alternative. That was simple. It was Biogel,[®] with a unique coating that replaced the need for glove powder for ease of donning.

Her second challenge was a little more daunting. The entire facility had to be convinced to convert. Peggy and her team didn't stop until everyone saw the benefits a powder-free environment could offer, and her nurses could return to a safer work place.

By 1993, the conversion was completed, and the OR suite was power cleaned to remove any remnant of powder from the environment. Staff could return to work confident they would not be exposed to aerosolized particulates.

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Peggy Doyle
Director of Perioperative Nursing
Boston, MA

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processing). And the remaining individual actually has time available to assist in other areas. The annual savings in the linen department have been estimated at \$48,000.

The task of returning and restocking unused or incorrect items has been eliminated – for an annual savings of \$3,000 to \$4,000 in HR costs.

Custom packs have changed the processing departments cart preparation process for the operating room schedule. This function is now completed by the two night processing aides. For an average operating room slate for the next day it would take the staff about three hours.

The frustration and stress level for everyone involved has also been lowered – processing staff no longer have to search for individual items to pack for each case and the OR staff do not have to deal with the frustration of receiving incorrect items.

Custom packs have also really helped with standardization and, as a result, with cost issues. Many items are now standardized throughout all packs – for example, we now use the same cautery in all our packs throughout the region. Once we selected a standardized component that met with the surgeons' and coordinators' approval it was placed on our regional purchasing list. By ordering a large volume of one item, instead of small quantities of many items, we benefited from reduced volume pricing. Standardization was not an easy task because not only did the surgeons and coordinators have to agree on the components, but the surgeons also had to change some of their practices. However in the end it was actually less confusing for the OR staff as they became familiar with the standard components.

Impact in the OR

The impact of custom packs in the operating room was just as positive as it was in the Processing Department. Changes to custom packs are controlled by the specialty coordinators. The coordinators in our region

consider service needs, remove or change items to avoid wastage, and look for new opportunities to reduce component costs.

Comments from interviews with three specialty coordinators say it all!

Lori Stricker, the Neurosurgery Specialty Coordinator at the Regina General Hospital, finds the packs convenient and quick. Her department has been using the packs for about five years. Stricker estimates that her nurses save as much as 10 to 15 minutes in set up time for each procedure. In some situations time saved allows for an extra short case being added at the end of the slate. With hospitals dealing with long waiting lists the time saving is quite an asset.

Stricker also noted that the packs have resolved strike-through issues. And she likes the fact that each pack is only used on a single patient, and is then discarded, thus eliminating the risk of transferring organisms from one patient to another.

Stricker also values the fact that our region's packs are latex free – which means more safety for the patient and less stress for the OR staff.

Myrna Pugh, the Gynaecology Specialty Coordinator, uses a large quantity of specialty packs because of their wide range of surgical patient positions and their laparoscopic procedures. Pugh feels that the packs work well as long as they are carefully monitored and controlled for waste. Gynaecology has been using custom packs for five years.

She also noted that student training is easier because the labeling on the drapes clearly shows how to unfold them. As a result there are fewer drapes being contaminated and no time lost due to mishandling of the drapes. The students also are not as intimidated as they were with linen draping.

Pugh also finds that patients draped for laparotomy procedures now stay drier and during multi-procedures the patient is no longer over draped. Pugh also noted that the standard of drapes is more consistent and the integrity of the case is better.



Photo by J. Porteous

Custom pack

Brenda Zdunich, the Cardiovascular Specialty Coordinator, really sees the benefit of the patient being dry at the end of the operation. In the past, when taking the vein for the coronary bypasses, the drapes under the legs were saturated and had strike through when we used linen. Now, with the single-use drapes, the patients are dry.

Zdunich also finds that custom packs are efficient for emergencies. The circulating nurse can spend more time with the patient and the anaesthetist, instead of being back with the scrub nurse opening packages. In emergency situations, the room is now ready to go even before the patient even arrives.

Zdunich says she would never go back to linen. The Cardiovascular team looks forward to the day when all they have to open are their gloves!

In summary, since their introduction in 1996 custom packs have been very popular in both the OR and the processing department of the Regina Qu'Appelle Health Region. We now have forty different packs and have expanded from basic packs to more specialized ones. These include ablation packs, laparoscopic nephrectomy packs and paediatric packs. Nurses are happier; surgeons and patients are more comfortable. Some of our nurses have even claimed that they would quit if we ever stopped using custom packs!

For more information please contact the author at Darlene.boyd@rqhealth.ca. ❁

BENEFITS IN REGINA:

PROCESSING

- Case cart preparation was reduced to two night staff picking for about two hours.
- Lower stress level & frustration
- Save 1 hour/day returning incorrectly picked items – annual savings of \$3,000 \$4,000.
- Eliminated 2 positions in Sterile Processing at approximately \$48,000 per year
- Dollar savings from standardizing to less expensive components – the packs drove the standardization.
- Reliable drape supply

NURSING

- No strike through
- Reduced ICU stay for CABG – annual savings of \$728,000.
- Patients dry and warmer
- Standardized components/draping
- Specialty draping to fit needs
- Surgeons now cool and comfortable
- Saving set up time – 10 to 15 minutes per procedure
- Easier teaching of new staff
- Latex Free
- Quick set up for emergencies
- More time can be spent with the patient pre-op
- Greater employee satisfaction

Table 2

TYPE OF CONTACT	MINIMUM REPROCESSING LEVEL REQUIRED	REPROCESSING METHODS CURRENTLY AVAILABLE
CRITICAL	Sterilization	<ul style="list-style-type: none"> • Steam • Ethylene Oxide • Hydrogen Peroxide Gas Plasma (Sterrad) • Liquid Peracetic Acid (Steris System I) • Ozone (TSO3)
SEMI-CRITICAL	High-Level Disinfection	<ul style="list-style-type: none"> • Glutaraldehyde • <i>ortho</i>-phthalaldehyde (OPA) • Hydrogen Peroxide (apx. 7%) • Hot Water Pasteurization
NON-CRITICAL	Intermediate or Low-Level Disinfection	<ul style="list-style-type: none"> • Alcohol (70%) • Phenolics • Moist heat • Halogens (Chlorine & Iodine) • Hydrogen Peroxide (apx. 3%) • Quaternary Ammonium Compounds (QUATS)

The second step is to identify the alternatives that will provide the minimum reprocessing level necessary to keep patients safe. Use Table 2.

The third step is to compare the choices within a selected category. Use Table 3 to identify the issues for comparison of the selected reprocessing methods.

EFFICACY

In reviewing any reprocessing method, the first criterion to consider is efficacy. If the method is not effective against the spectrum of microorganisms of concern, patients will not be safe from infection. For example, during the reprocessing of anaesthetic equipment, tuberculosis is always a concern. Equipment must therefore receive high-level disinfection. The processing time for high-level disinfection is based on the time needed to kill *M. tuberculosis var. bovis*. Low-level disinfection procedures are not as potent as high-level disinfection and were not designed to be used on instruments. Following Spaulding's classification will ensure appropriate spectrum efficacy.

Once efficacy is confirmed, a short cycle/contact time is usually preferable. This will allow instrument inventory to be turned around quickly as possible.

The effectiveness of any sterilization or high-level disinfection process must be monitored.^{2,3} Some monitoring requirements may be more onerous than others and this will have implications for ease of use.

SAFETY

Once it is determined that the efficacy of a system is appropriate, the next issue to address is safety. Staff using any system must be safe. Ideally, a reprocessing method will pose no occupational health or safety risks. If that is not possible, the risks associated with any process must be mitigated. Include the costs of mitigation when comparing systems or methods. Environmental safety is also a concern and the same considerations apply to it as to staff safety. Ideally, the method should cause no harm but, if it might, the costs of mitigation must be factored in to any comparison.

Confirm device compatibility with the reprocessing method(s) being considered. Contact the device or the reprocessing method

Table 3

CRITERIA	ISSUES FOR COMPARISON
EFFICACY	<ul style="list-style-type: none"> • Spectrum • Cycle/Contact time • Monitoring protocols
SAFETY	<ul style="list-style-type: none"> • Staff OH&S • Instrument & equipment compatibility • Environment
BENEFITS & LIMITATIONS	<ul style="list-style-type: none"> • Ease of use • Cost per use or per item processed • Total processing time