Improvising Dressing Procedure for Patients with Bed Sores

By Hafizah Sith

Tampin Hospital has been serving residents from surrounding areas since 1920. Initially it was an 85-bed hospital, however now, after 93 years it has been upgraded to a 108-bed facility. This hospital is equipped with ultra-modern facilities and has six areas of speciality namely medical, obstetric & gynecology (O&G), anaesthetic, orthopaedic, paediatric and surgery.

This hospital provides medical services to 30,000 residents in the district. Tampin Hospital enhances its services by managing more outpatients and inpatients. This is implemented through a well-equipped infrastructure in delivery rooms and operation theatres and also by having advanced medical equipment. With these facilities, the staff are able to attend and manage cases thus helping in the reduction of referrals to tertiary hospitals.

Providing the best care for patients

The employees in Tampin Hospital are aspired by its vision of being a medical institution which provides quality and efficient medical services. Therefore a team of employees from different department joined force to improve the service in the hospital. They were called Kejora. They targeted to tackle a few issues to improve the service of the hospital through Innovation and Creative Circle (ICC). Following that, a brainstorming session led to 33 problems related to daily routine tasks and customer needs. Therefore, Kejora used Force Ranking Analysis and shortlisted 10 most concerning problems that occurred in Tampin Hospital.

Next, Kejora used three ICC tools to come up with a detailed analysis on the problems. Mind mapping technique, urgency and seriousness scale and benefit analysis was constantly used to identify the most critical problem that needs an immediate solution. Upon an analysis, it was identified that the most critical problem was delay in dressing among inpatients with bed sores.

Bed sores or also known as pressure sores are injuries to skin and underlying tissues resulting from prolonged pressure on skin. It is often developed on skin that covers bony areas of the body such as heel, ankles, hips and tailbone. Bed sores often occur when a person has prolonged immobilisation secondary to medical complications such as spinal injury, paralysis, coma or surgery. Bed sores can range from red areas on the surface of the skin to severe tissue damage that goes deep into muscle and bone. It may also occur in places where the skin folds over itself or where medical equipment creates pressure on the skin.
If bed sores are left untreated, it can lead to a wide variety of secondary conditions, including sepsis (bacteria entering the bloodstream), cellulitis (inflammation of body tissue, causing swelling and redness), bone and joint infections, abscess (a collection of pus) or in serious cases will lead to cancer (squamous cell carcinoma).

Therefore, this issue needed an immediate solution as Tampin Hospital upholds a reputation for providing the best medical care for its patients. Moreover, Tampin Hospital reflects on the service delivery by Ministry of Health Malaysia. Therefore Kejora realised that it was a priority to overcome this issue as soon as possible.

Subsequently, Kejora conducted a research and benchmarking activities by communicating with representatives and person in charge from other hospitals. It was indeed a dismay to discover that there were no special tools to mobilise inpatients and clean the bed sores.

In conjunction to the seriousness of the problem, the issue regarding delay in dressing bed sores was chosen as a major problem that needs immediate attention. As a matter of fact bed sores are a life threatening issue if untreated and may lead to amputation. In addition to this, the data obtained from Customer Satisfactory Survey conducted in Tampin Hospital pointed out that delay in cleaning bed sores is indeed a major issue.

An innovative Kejora Portable Bed (KPB)

With this issue in mind, Kejora aimed to expedite the process of cleaning and dressing bed sores for inpatients at Tampin Hospital from 14 minutes to 5 minutes. The management of Tampin Hospital was more than happy to approve this project as they strongly believe that this will lead to the betterment of the service in the hospital. Moreover Kejora’s aim was in line with Ministry of Health Malaysia to provide the best treatment for the people.

Following that, Kejora reviewed the process flow and used the cause and effect diagram to identify the probable root causes. They managed to identify five
root causes that led to the delay of cleaning and dressing bed sores. The three potential root causes are unavailability of specific place to clean bed sores apart from using the hospital bed, lack of man power in handling the patients during the procedure and unavailability of proper tools or equipment required for the procedure.

However, an analysis that used Pareto Diagram concluded that the most outstanding cause was unavailability of specific place to clean the bed sores as the hospital beds were not quite useful in this procedure. Following that, Kejora used the tree diagram and SWOT analysis to short list three solutions for the problem.

The solution to this problem is to create an equipment or tool that can be used to turn patient while the staff in charge is cleaning bed sores. After several brainstorming sessions, Kejora decided to design a portable platform that can be placed on top of hospital bed and used to turn the patient during the dressing of bed sores. They also aimed to ensure that only one staff will be able to handle this bed, hence creating a reduction in manpower.

Therefore in April 2013, Kejora diligently worked on the design and construction of a portable bed. It took about four months to complete the invention and it is known as Kejora Portable Bed (KPB). KPB uses stainless steel and plastic aluminium which makes the bed light, durable and easily handled. The development cost for one unit KPB is RM1,550 and it only takes one person to handle the bed. With this, they have successfully achieved their target.
Analysis of ICC project in Tampin Hospital

Upon the implementation of Kejora Portable Bed (KPB), percentage of delay in cleaning bed sores has reduced significantly from 48 percent to zero. The project showed improvement in work flow, increased work output and led to zero complaint by staff/person in charge and patients. In addition to this, these changes led to reduction in operational cost of RM 171,464 and also savings in time spent on cleaning bed sores from 14 minutes to 2 minutes for one patient after the implementation of KPB. This was indeed an achievement for Tampin Hospital.

The innovation that led to invention of KPB motivated the team members in generating creative and innovative ideas. In addition to this, the usage of KPB has been incorporated into work flow chart, ‘fail meja’ and the check list for all care takers in Tampin Hospital. Tampin Hospital is indeed pleased with the implementation of KPB as they strongly believe this will lead in providing a better service.

Matrix before and after ICC project:

<table>
<thead>
<tr>
<th>Description</th>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total saving on operation cost (RM/year)</td>
<td>0</td>
<td>171,464</td>
</tr>
<tr>
<td>Time spent on cleaning bed sores (minutes/patient)</td>
<td>14</td>
<td>2</td>
</tr>
</tbody>
</table>