



## Covidien Athlone , Ireland

### OVERVIEW

Covidien Athlone has operated a manufacturing facility in its current location since 1982. Originally as Mallinckrodt Laboratories it was purchased by Tyco in 2000, a large diversified multinational organisation. In 2007 Tyco separated into three independent companies, and Athlone became part of Covidien. The Facility has grown from 40,000 sq. ft. to its current 130,000 sq. ft.

### PRODUCTS

Covidien Athlone manufactures airway management products used during surgical operations and post-operation care throughout the world. The range consists of over 700 skus which includes:



- ◆ Mallinckrodt Endo Tracheal airway devices including Safety Flex, RAE and Broncho Cath.
- ◆ Shiley and Tracheosoft Tracheostomy tubes.
- ◆ Argyle Cardio Thoracic products.

The production technologies used include:

- ◆ Extrusion, blow moulding, injection moulding.
- ◆ PVC and PU cuff blow moulding.
- ◆ General plastic processing and assembly.
- ◆ Form fill and seal and ETO sterilisation.

The facility's products are sold all around the world.

### OUR PROCESS

Covidien Athlone had a focused operational excellence program for over seven years. The process has evolved from Lean and Six Sigma tool deployment on specific problems to a systematic approach to Lean deployment throughout the facility.

Covidien developed the Covidien Operating System (COS) which is a holistic approach to creating a culture of continuous improvement. The key drivers of COS are strategy deployment, end to end value stream and tactical execution. Each year the management team reviews the overall performance for the prior business period, and using the business unit strategic plan and

business objectives the team develops the high level objectives for the operation for the following year. From this, the detailed plans and objectives are developed for each area. These plans are then cascaded to all areas of the organisation through structured communication sessions and individual goal setting.

Performance against the plant objectives are tracked using a KPI scorecard which is reviewed monthly and quarterly.

Covidien Athlone uses a value stream structure to develop a culture of continuous improvement aligned with the plant objectives. This drives the tactical execution of Kaizens and other continuous improvement projects to deliver significant business results while engaging employees in continuous improvement on a daily basis.

Daily continuous improvement activities that our employees are involved in include:

- ◆ Kaizens, Autonomous Maintenance, 5S.
- ◆ Problem solving using A3 methodology.
- ◆ SMED techniques, Kanbans.
- ◆ SPC (Statistical Process Control), Behaviour Based Quality.
- ◆ Hazard observation program.
- ◆ Bright Ideas program, Six Sigma projects.
- ◆ Preventative maintenance.
- ◆ Energy reduction program, Waste recycling.
- ◆ Daily tracking and reporting of our key metrics.

The COVIDIEN CARES programme support's local charities and organisations and employees have participated in fund raising events such as cake sales, fun runs, Pink Friday and Global Autism day.



## ACHIEVEMENTS

### Safety / Environment and Morale

- ◆ Consistent World Class safety record over the last 5 years – TRIR less than 0.80.
- ◆ Awarded BEST (Building an Environmental and Safety Tradition) Certification for Health & Safety in 2011.
- ◆ Awarded BEST Certification for Environmental in 2012.
- ◆ Closed Hazard Observations identified by our employees increased from 257 in 2008 to 4964 in 2013.
- ◆ Beneficial and recycled waste in the plant has increased from 38% in 2008 to 90% in 2013.
- ◆ 400Kw CHP Plant implemented using natural gas and producing 30% of the plant's electricity demand.
- ◆ 54 Lean Leaders, DMAIC and DFSS Six Sigma Green and Black Belt Resources have been trained through Covidien's OpEx training programme.
- ◆ High level of participation by employees throughout the site on community partnership initiatives.

### Quality

- ◆ Excellent regulatory audit history with continued recertification since 1994 and no major Non Conformances issued by regulatory agencies over the past 6 years.
- ◆ 85% reduction in Non Conforming Reports between 2009 and 2013.

- ◆ Critical to Quality Features (CTQs) developed for all legacy products and components.
- ◆ 92% green or higher on all Quality KPI Metrics for the last 5 Years.
- ◆ Pioneer in the medical device industry in the implementation of parametric release for Ethylene Oxide (ETO) sterilisation.

### Customer Service and Supply

- ◆ Slow Moving & Obsolete Goods only 1% of Finished Goods value.
- ◆ Lead Time reduced from 25.0 to 10.0 days from 2000 to 2012.
- ◆ Supplier On time Delivery – increased from 97.2% in 2008 to 98.6% in 2012.
- ◆ Implementing SPC (Statistical Process Control) Programme with key suppliers.

### Cost / Productivity

- ◆ Plant OEE (Overall Equipment Effectiveness) improvement from 40% in 2006 to 85% in 2013.
- ◆ Inventory turns increased from 12.3 in 2005 to 16.1 in 2012 – 31% improvement.
- ◆ Productivity - The Top 5 products have shown a 31% improvement in direct labour hours per 1000 from 2007 to 2013.
- ◆ 37 autonomous maintenance teams in place in manufacturing led by production assistants and machine setters.

## Awards and Recognition

- ◆ Shingo Prize Bronze Medallion Recipient—2013
- ◆ Operational Excellence Award Best Large Plant in Covidien - 2013
- ◆ Quality Excellence Award Best Large Plant in Covidien - 2012
- ◆ 'Bring Home the Gold' Operational Excellence Award – 2011
- ◆ NISO – All Ireland Safety Quiz Finals Winners 2011.
- ◆ Bronze award – EH&S plant recognition program. 2011
- ◆ Quality Improvement Program (QIP) 2<sup>nd</sup> Highest in Covidien 2011
- ◆ 'Bring Home the Gold' Operational Excellence Award – 2010
- ◆ NISO – All Ireland Safety Quiz Finals Runner-Up 2010.
- ◆ Quality Excellence - Best Large Plant in Covidien – 2010
- ◆ Quality Improvement Program (QIP) Gold status achieved in 2010.
- ◆ Best Plant Safety Performance - Covidien 2009
- ◆ Most Improved Plant Award – Covidien 2009



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