

Changing standards for medical device manufacturers

Cynthia Lewis, *Market Insight and Strategy Manager*
Ellen Turner, *Market Development Manager*

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- Standards under development
- New guidance published by the FDA around luers, Y-sites, and small-bore connectors
recommends:
 - Devices conform to new standard
 - Enteral connectors be tested to ensure incompatibility with nonenteral devices
 - Proprietary connectors, or transition connectors, be designed and tested using new standards

ISO 80369

- Small bore—inner-fluid pathway of a connection with a diameter less than 8.5 mm
- Connection—union or joining of mating halves of a connector
- Connector—mechanical device, consisting of one of two mating halves and designed to join a conduit to convey liquids or gases

Case studies from the FDA

- Feeding tube connected to trachea tube
- Epidural tubing connected to IV tubing
- Oxygen tubing connected to needleless IV port
- IV tubing connected to enteral feeding tube
- Foley catheter connected to NG tube
- Enteral feeding tube connected to ventilator
in-line suction catheter

Product safety concerns

Flexible connector safety concerns

The screenshot shows the FDA website's 'Medical Devices' section. The main heading is 'Preventing Tubing and Luer Misconnections'. A sidebar on the left lists various resources, with 'Preventing Tubing and Luer Misconnections' highlighted. The main content area includes a list of links such as 'Preventing Tubing and Luer Misconnections', 'Information for Manufacturers of Small-Bore Connectors and Medical Devices with Connectors', and 'Recommendations for Health Care Facilities'. Below the links, there is a paragraph explaining that patients in health care settings receive food, medication, and other therapies through a variety of tubes and catheters, and that these delivery systems are often connected to one another by small-bore connectors (e.g. Luer connectors). It also mentions that because these connectors are compatible between different delivery systems, patient injuries and deaths have occurred when medicines, liquid feeding formulas, or air were accidentally delivered through the wrong tubing. The page concludes with a note that on February 11, 2015, the FDA published final guidance for small-bore connectors used in enteral applications.



International problem solving

- International working group of product designers and clinicians
- Working on the problem since 2010

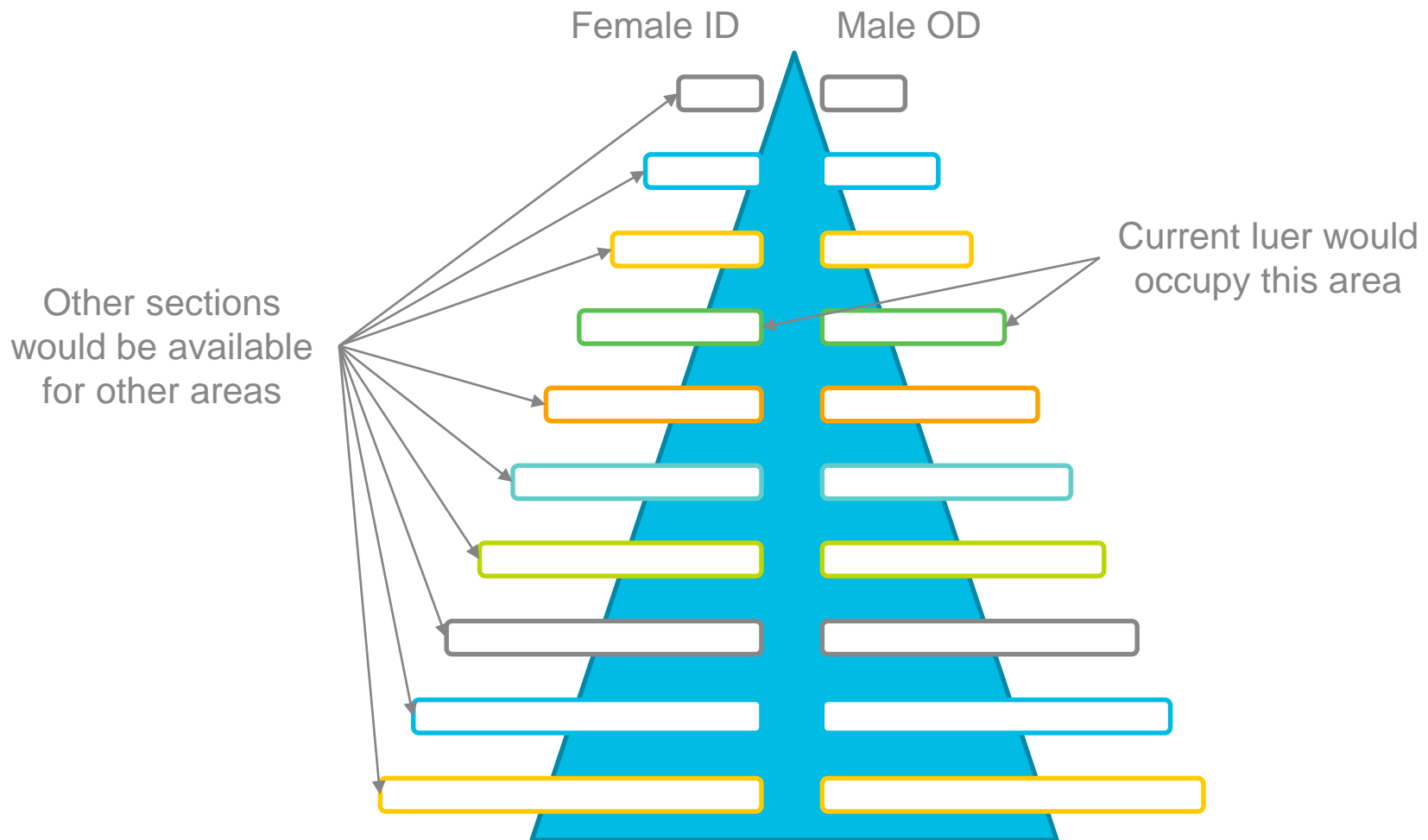
Move to create and adopt new international standards

- ISO 80369
- First published in 2013
- Areas to be included
 - Enteral feeding and gastric
 - IV or hypodermic
 - Breathing systems, driving gases
 - Urethral and urinary
 - Limb cuff inflation
 - Neuraxial devices

<http://www.fda.gov/MedicalDevices/Safety/AlertsandNotices/TubingandLuerMisconnections/default.htm>

What if your current connectors do not meet new standards?

How ISO standards would prevent misconnections



Stay connected

- Top GPOs and The Joint Commission are on board for standardization.



Device manufacturers face many challenges.



Changes in product standards

How does this impact your business?

New product development projects require time and \$\$



If no new product



Changes in product quality perceptions



Hospital penalties for poor outcomes

- Health care systems hypersensitive



Lost market share

- End users use competitor's new product.
- Brand equity damage
- Lost sales

Your challenge... staying ahead of standard shifts

Today...

- Lose share
- Lose margins
- Compete on price
- Several design rounds before successful part manufactured



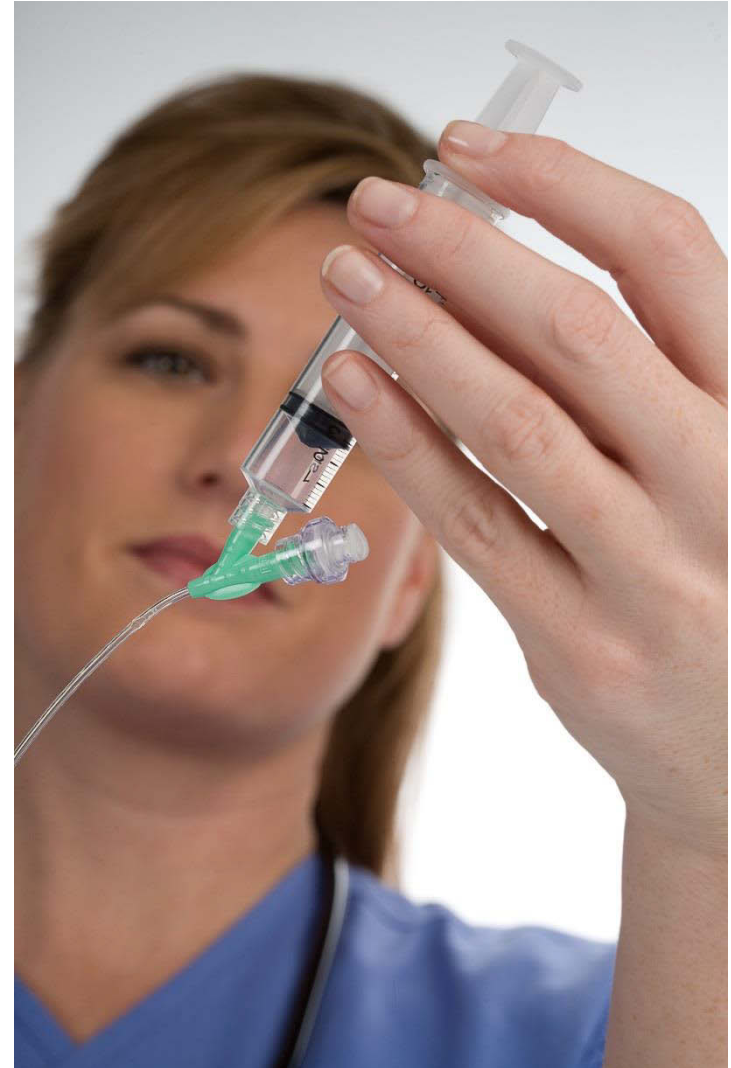
Wouldn't you rather commit company resources to...

- Developing
- Marketing
- Selling your higher quality products



What if you could ...

- Comply with anticipated shifts in standards
- Make changes quickly to materials that meet new standards
- Eliminate rework in part and mold design
- Improve end users perceptions of your product quality and safety



Value to you—*with one material change!*

Eastman Tritan™ copolyester for small-bore connectors

- Rigid material meeting ISO 80369 standards
- Excellent solvent bonding to PVC or TPU tubing
- Chemical resistance, toughness, clarity
- Color stability after E-beam or gamma sterilization
- Technical design and molding services



**Increased
product
quality**

One material choice helps you hit these targets!

Value to you—*with one material change!*

Resulting benefits to you...

- Improved patient safety
- Enhanced and protected brand image
- Improved part development and molding efficiency



**What's keeping you
from adopting
Eastman Tritan™ copolyester
for your small-bore connector
applications?**

Check out the new ISO Standards today

http://www.iso.org/iso/catalogue_detail.htm?csnumber=45976

See how a group purchasing organization is educating the industry on this new standard

<https://www.premierinc.com/events/advisor-live-new-standards-medical-tubing-connectors-ready/>

Thank You