

Mallinckrodt Pharmaceuticals

Investor Briefing 2017 Presentation
Hospital Portfolio

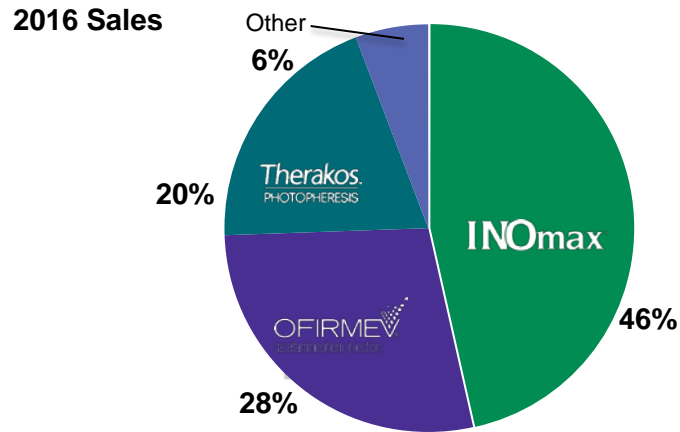
Ron Lloyd
EVP and President, Hospital Therapies

October 4, 2017



Mallinckrodt is becoming major hospital pharmaceutical player

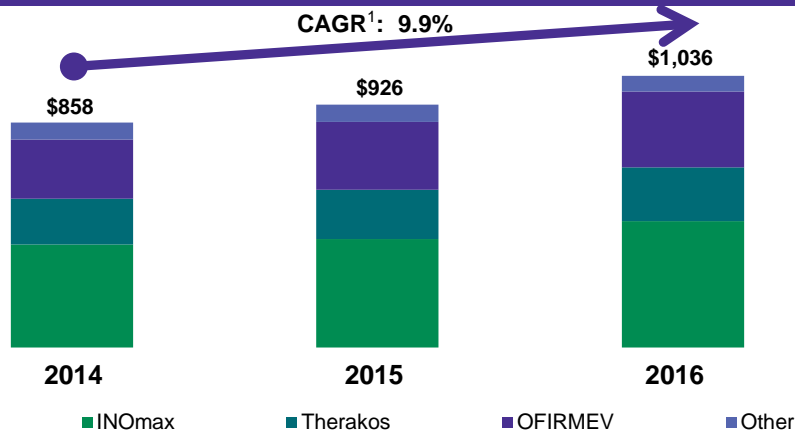
Mallinckrodt's Hospital Products



Mallinckrodt's Hospital Focus

- Growing presence in fragmented hospital market; one of few companies with hospital focus
- Category-leading products; hospital net sales >\$1 billion
- Emerging pipeline of first-in-class products to address areas of high unmet needs
- Reach and experience to effectively develop and commercialize hospital products
 - Established commercial presence in U.S., EU, Japan, Australia and Canada
 - Unique drug/device expertise, service infrastructure
 - Decision-maker access – with deep relationships and proven ability to execute unique, value-based contracts

MNK Hospital Net Sales† Have Grown Steadily (\$MM)



Note: All data in calendar years

† Pro forma sales; historical net sales includes revenues prior to MNK ownership. Net sales include \$663 million in 2014, \$322 million in 2015 and \$3 million in 2016, representing net sales of acquired products prior to Mallinckrodt's ownership.

Source: IMS sales of non-biologic brands and branded generics; MNK net sales include OFIRMEV® (acetaminophen) injection, INOMAX® (nitric oxide) gas, for inhalation, Therakos® immunology platform and other hospital products

Portfolio of complementary, innovative products and established hospital touch points

	Intensivist/ Neonatologist	Surgery, Transplant and Other Specialists*	Pharmacy/ Purchasing	Device/ Delivery**
INOmax (nitric oxide) FOR RESPIRATION	█		█	█
Stansporfin	█		█	
Inhaled xenon gas	█		█	█
Terlipressin	█		█	
Therakos		█	█	█
OFIRMEV		█	█	
StrataGraft® regenerative skin tissue		█	█	
RECOTHROM THROMBIN TOPICAL (RECOMBINANT)		█	█	
RAPLIXA (Fibrin sealant human) for topical use		█	█	
PREVELEAK Surgical sealant		█	█	

Phase 3 assets
MNK commercial presence



- Broad presence and hospital focus makes Mallinckrodt a compelling partner for companies looking to license out developmental or marketed assets
- Strong HEOR¹ capabilities and hospital/GPO² contracting experience allows MNK to maximize value of transformational therapies

1 Health Economics and Outcomes Research
2 Group Purchasing Organizations

* Therakos approved for use in transplant and other indications in EU
** Includes respiratory therapists, specialty nurses and apheresis specialists



- INOmax[®] is Mallinckrodt's 2nd largest product with sales of ~\$500 million
- >55% of 22,000² U.S. babies born annually with HRF treated with INOmax
- Ex-U.S. footprint covers Japan, Canada, Australia and other markets
- Multi-pronged durability based on:
 - Regulatory requirements compliance
 - Intellectual property
 - Strong, 15-year market acceptance built on patient safety dedication, unmatched customer service and continuous investment in innovation
- INOmax DS_{IR}[®] Plus delivery device is most advanced system in the world
 - Designed with key safety features needed for fragile infants
 - Installed base of over 4,000 devices in hospitals across the U.S.
- INOmax offered as a total service package



1 Hypoxic Respiratory Failure

2 Includes babies born in or transferred to hospitals with access to INOmax

offering is a high-touch, full-service model

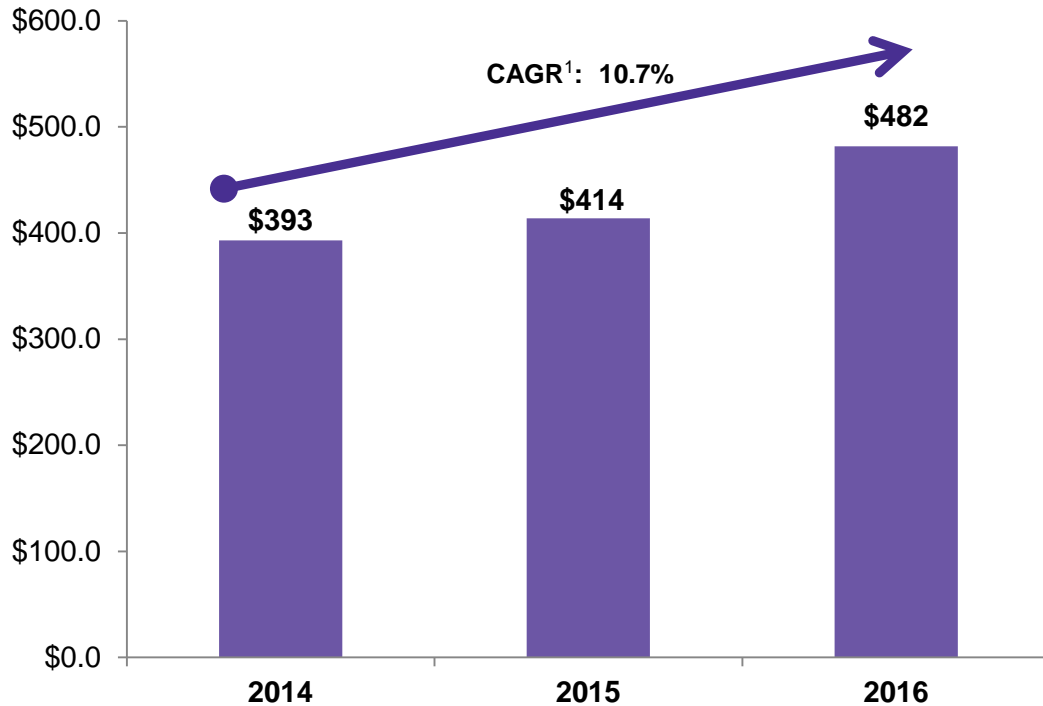


INOMAX SERVICE MODEL INCLUDES:

- Drug
- Device use (+ backups)
- Training
- Emergency delivery (≤4 hours)
- 24-hour customer service
- Device servicing
- Free upgrades
- Unlimited supplies
- Reimbursement support

growth drivers: execute on strengthening value proposition to customers

Calendar Year Net Sales[†] (\$MM)



Note: All data in calendar years

[†] Pro forma sales; historical net sales may include revenues prior to MNK ownership

Includes net sales prior to the acquisition of INOmax (on April 16, 2015) of \$118 million for calendar 2015 that are excluded from Mallinckrodt's historical financial information.

¹ Compound Annual Growth Rate

Growth Drivers

Enhance customer experience

- Continue to deliver and ensure customers understand the full value of our comprehensive service model

Provide flexible contracting

- Allow customers flexibility to choose pricing option that best fits their needs

Advance device technology

- Develop next-generation, compact, portable device aimed at further enhancing safety and simplifying use, with flexibility to use in a number of settings



photopheresis platform is only U.S.-approved ECP² system for CTCL^{1*} patients

- Non-Hodgkin's CTCL presents as red, scaly patches or thickened plaques of skin
- Therakos can effectively treats skin manifestations of CTCL
 - Available >30 years
 - Over 1 million treatments delivered worldwide
- ECP² generally used in patients whose disease has progressed beyond early stages
 - Therakos' estimated use in ~10% of ~7,500 eligible U.S. patients with systemic CTCL
 - Available primarily at major MSA³ academic centers
- Therakos has broad European label covering CTCL, GVHD⁴ and other immune-modulating diseases
- Pursuing opportunities to expand into other geographies, including Japan



1 Cutaneous T-Cell Lymphoma
2 Extracorporeal Photopheresis
3 Metropolitan Statistical Area
4 Graft versus Host Disease

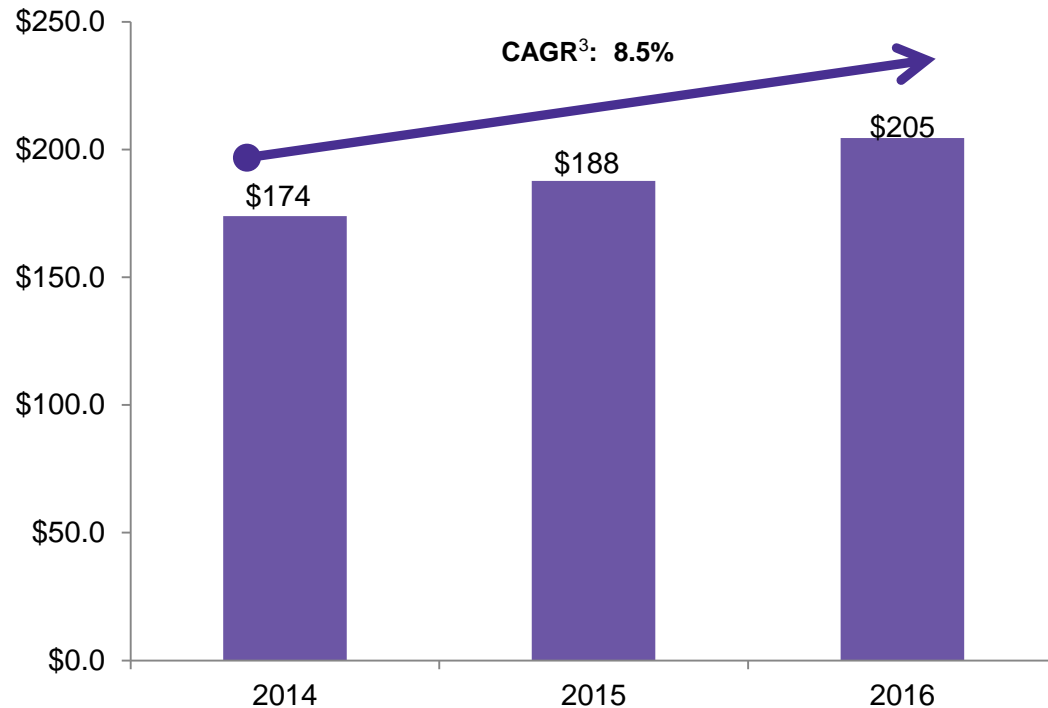
5 Photos shown from CTCL 1 clinical trial. CTCL 1 trial included patients with advanced stage of the disease who were treated with oral formulation of methoxsalen in conjunction with UVAR XTS[®] photopheresis system, and were permitted to receive topical steroids.
* All references to CTCL are intended to refer to skin manifestations of CTCL

growth drivers: new device placements, strong clinical and patient focus, and expanded access

Calendar Year Net Sales† (\$MM)



Growth Drivers



Conversion from XTS[®] to CELLEX[®] device

- Complete customer conversion to advanced CELLEX devices
- Normalized kit inventory levels

Drive use in key indications

- Increase U.S. CTCL^{2*} use via clinical focus and patient education campaign

Expand access in key markets

- Enhance European reimbursement across broad label with HEOR¹ and clinical data

Note: All data in calendar years

† Pro forma sales; historical net sales may include revenues prior to MNK ownership

Includes net sales prior to the acquisition of Therakos (on September 28, 2015) of \$138 million for calendar 2015 that are excluded from Mallinckrodt's historical financial information.

1 Health Economics and Outcome Research

2 Cutaneous T-Cell Lymphoma

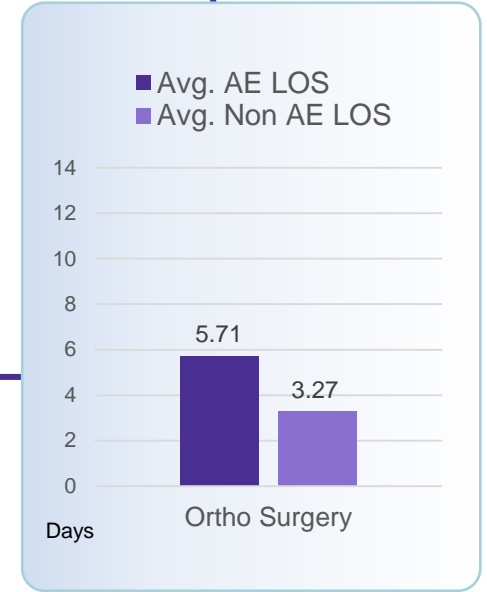
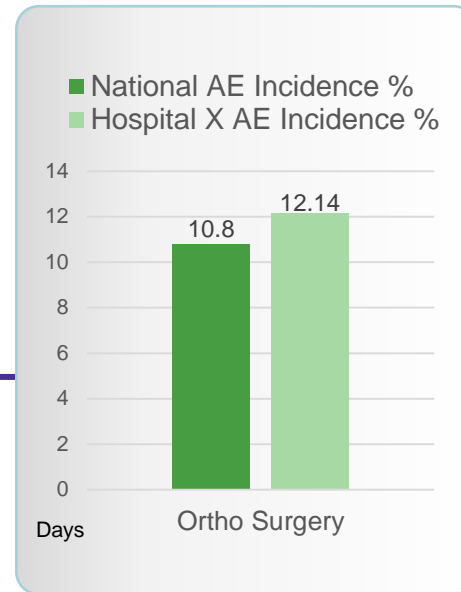
3 Compound Annual Growth Rate

* All references to CTCL are intended to refer to skin manifestations of CTCL.

is leading branded IV analgesic in U.S.



- Offers physicians non-opioid analgesic as part of multimodal analgesia (MMA) protocol
- MMA widely recommended by nationally recognized organizations including The Joint Commission, American Society of Anesthesiologists and American College of Surgery
- ~15% market share of patients in targeted surgical procedures¹
- Can reduce length of stay and hospital costs per HEOR² data
 - Potential \$4.7MM annual savings in medium-sized hospital³
- Unmet need still exists: hospital-level Medicare data shows link between opioid-associated adverse events and longer hospital stays⁴



1 Includes patients with analgesics undergoing bariatric, colorectal, joint replacement, spine, cardiothoracic, hysterectomy, C-sections, and general surgery; Source: Company analysis of Premier DB based on 2015 Inpatient Discharges, HCUP NIS Data

2 Health Economics and Outcomes Research

3 Shaffer, *Advanced Therapy*, Nov. 2016

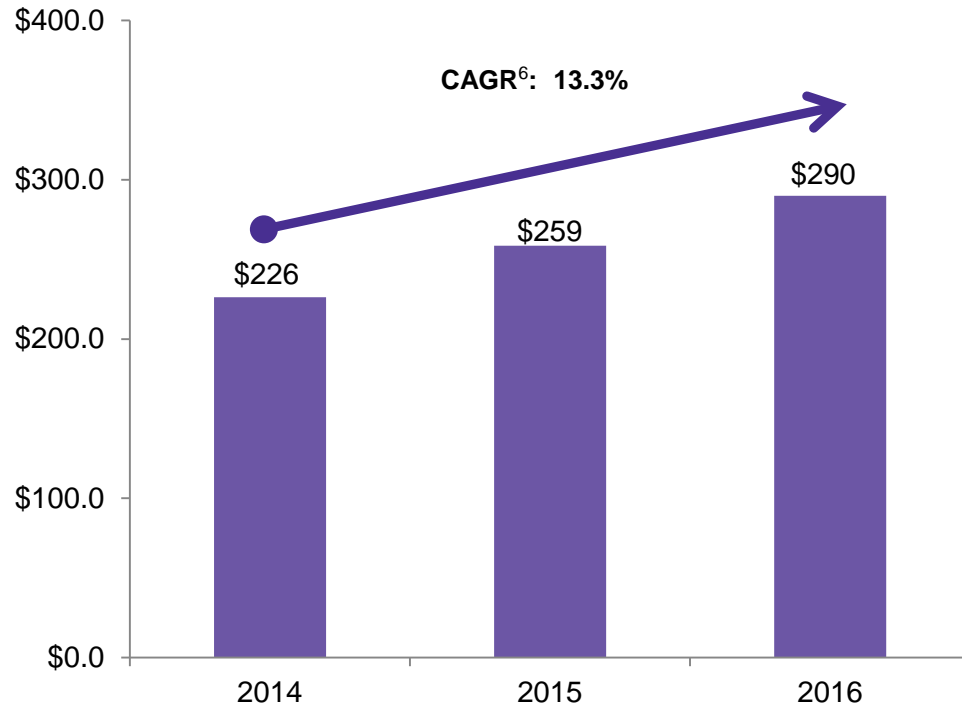
4 Use of Ofirmev has an attendant decrease in opioid consumption, the clinical benefit of which was not demonstrated in clinical trials

growth drivers: educate customers on OFIRMEV value proposition

Calendar Year Revenue† (\$MM)



Growth Drivers



Highlight true IV opioid costs with CMS¹ data

Demonstrate OFIRMEV's value proposition

Drive innovative contracting

- Focus on hospital-level, Medicare data showing link between adverse events associated with opioids and longer hospital stays⁵
- Demonstrate reduced length of stay, reduced discharges to skilled nursing facilities and improved hospital costs through HEOR² data
- Leverage innovative contracting to pull-through OFIRMEV's value proposition
- Major contract wins with GPOs³ and IDNs⁴

Note: All data in calendar years

† Pro forma sales; historical net sales may include revenues prior to MNK ownership

Includes net sales prior to the acquisition of Ofirmev (on March 19, 2014) of \$31 million for calendar 2014 that are excluded from Mallinckrodt's historical financial information.

1 Centers for Medicare and Medicaid Studies
2 Health Economics and Outcome Research
3 Group Purchasing Organization
4 Integrated Delivery Network

5 Use of Ofirmev has an attendant decrease in opioid consumption, the clinical benefit of which was not demonstrated in clinical trials
6 Compound Annual Growth Rate

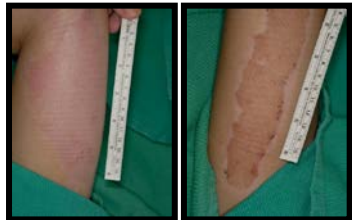
Longer-term growth: build pipeline of first-in-class products for critically ill patients in areas with high unmet need

Stannosporfin

- Treatment of severe bilirubin (jaundice) when phototherapy is insufficient
- Extended levels of high bilirubin can impact neurological development
- No currently approved pharmacological therapies; exchange blood transfusion is last-resort option



Neonate with high bilirubin counts manifested as jaundice



StrataGraft

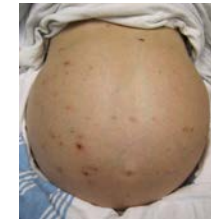
Autograft

StrataGraft regenerative skin tissue

- Treatment of burn patients with off the shelf treatment
- Helps avoid autografts - the removal and reuse of skin from another part of patient's body
- Among first products designated a Regenerative Medicine Advanced Therapy (RMAT) by the FDA

Terlipressin

- Treatment of hepatorenal syndrome (HRS) Type 1, a serious consequence of cirrhosis with high mortality rates
- No U.S.-approved therapies; terlipressin is approved in several other countries for HRS¹ and other conditions



HRS-Type 1 patient depicting liver failure with ascites



Patient undergoing resuscitation after cardiac arrest

Inhaled xenon gas drug-device

- Treatment of resuscitated cardiac arrest patients' to improve survival and functional outcomes
- No approved pharmacological therapies; hypothermia most commonly used therapy

Expected near-term launches can contribute significantly to strategic plan growth

Product	Proposed Indication	Market Overview	Expected Launch	Loss of Exclusivity	Est. Global Peak Net Sales ¹
Stannsoporfin	Reduction of bilirubin levels in neonates	~70,000 to 125,000 babies annually in the U.S. with severe jaundice and resistance to phototherapy or readmitted	2018	2032	>\$125mm
StrataGraft	Treatment of partial thickness and full thickness burns	~10,000 hospitalized burn patients annually in U.S. require autografting	2020	2032	>\$125mm
Terlipressin	Reduce mortality and time to discharge in Hepatorenal Syndrome (HRS) Type1	~10,000 to as many as ~30,000 in U.S. are impacted by HRS Type 1, with a larger population impacted by HRS Type 2	2020	2027	>\$300mm
Inhaled xenon gas	Improve neurological function after cardiac arrest	~200,000 patients annually in U.S. are resuscitated after cardiac arrest	2020	2027	>\$125mm

¹ Net sales estimates assume regulatory and commercial success as planned

Mallinckrodt has built strong hospital presence – well positioned for the future

- Building a growing product portfolio, with over \$1 billion in hospital net sales
- Developing and expanding unique capabilities required to succeed: deep relations across key hospital decision makers, unique drug-device expertise, value-based contracting, and global scale
- Capitalizing on deep pipeline with the potential for four launches in next three years
- Becoming a leading hospital pharmaceutical company for critical care patients, and the leader in the neonatology and NICU¹ space



1 Neonatal intensive care unit

Thank You

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