



Oxford Pharmascience

Medicines Made Better

Update on NSAID Programme

January 2015

OXP - Medicines Made Better

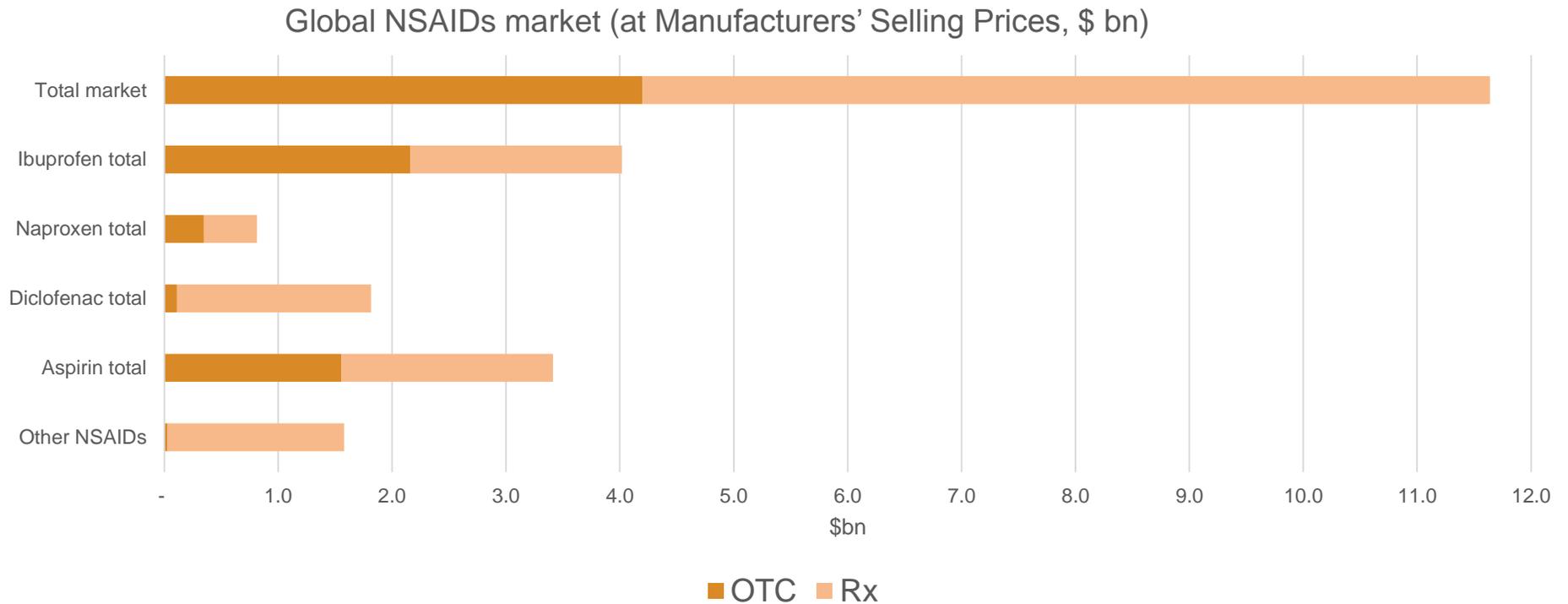


- We re-develop off-patent, approved medicines via proprietary drug delivery technologies to make them better, safer and easier to take
- OXP platform technologies leverage decades of R&D and are underpinned by strong IP and know-how
- Late stage pipeline with 2015 focus on \$12bn NSAIDs* market
 - prioritised on basis of shorter time to commercialise OXPzero™ products
- LSE AIM quoted (“OXP”), market cap c.£40m

* NSAIDs = Non-Steroidal Anti-Inflammatory Drugs, a category of medication widely used to treat a range of conditions including chronic (long-term) conditions including arthritis (rheumatoid, other inflammatory and osteoarthritis) and pain
Market size data – Source: Evaluate Pharma

NSAIDs: Amongst the most widely used drugs worldwide

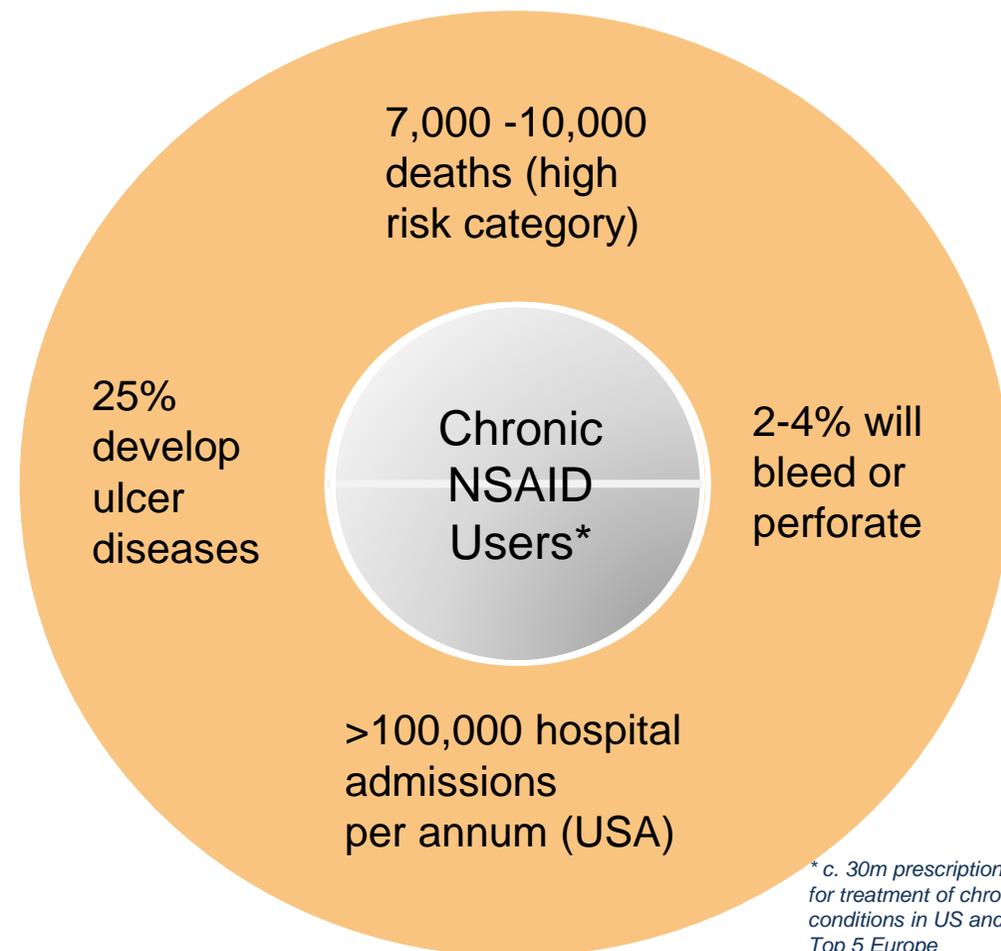
- **OXF is selectively targeting at the largest components of the massive \$12bn Global NSAIDs market**



Source: Evaluate Pharma

NSAID induced GI Injury: A Silent Epidemic

- NSAIDs cause injury along the entire GI tract, e.g:
 - Erosions
 - Ulcers
 - Bleeding
- Gastric bleeding imposes significant healthcare costs with an average annual cost of ~ \$20,000 per patient (US)
- Even at lower OTC doses there is measurable endoscopic injury



Guidelines for prevention of NSAID-related ulcer complications, Lanza et Al., [Am J Gastroenterol](#). 2009 Mar;104(3):728-38. doi:10.1038/ajg.2009.115.

The economics of upper gastrointestinal bleeding in a US managed-care setting: a retrospective, claims-based analysis, Cryer et Al., *Journal of Medical Economics*, 2010; 13(1): 70–77

Lead Programme: Gastric Safe NSAIDs



- Reinventing the most commonly used drugs NSAIDs: Ibuprofen, Naproxen, Diclofenac, Aspirin
 - Significantly milder in the gastrointestinal (GI) tract than current standard NSAIDs
 - Initial Proof of Concept (PoC) established with Ibuprofen
 - Now applying OXPzero™ technology across most common NSAIDs, leveraging OXP's Layered Matrix Drug delivery platform
 - Proceeding to PoC Trials with immediate release Ibuprofen and Naproxen in Q1/Q2 2015
 - Initiating commercialisation (partnering) discussions from mid 2015

Major commercial opportunity, poised to create significant value from mid 2015

OXP NSAIDs: Significant Reduction in GI Irritation



- In a previous PoC clinical trial with Ibuprofen, it has been demonstrated that the technology can significantly reduce GI injury:
 - OXPzero™ Ibuprofen exhibited significant reduction of gastrointestinal irritation compared to standard ibuprofen
 - Median number of erosions significantly reduced ibuprofen
 - Erosions in stomach reduced by 73% (p=0.007)
 - Erosions in duodenum reduced by 89% (p=0.020)
- Achieved successful optimisation of OXPzero™ Ibuprofen achieved to deliver immediate release of the drug and *in vitro* equivalence to standard ibuprofen

The OXPzero™ Technology and NSAIDs



- Layered Matrix Drug Delivery Platform, IP from Oxford University, University of Queensland and In-House
- Dual mode of action across the major NSAIDs:
 - Releases the drug in its molecular ionized form, reducing localised concentration so that the drug is less irritant to the mucosa
 - Neutralises luminal aggressors and strengthens factors that support the mucosal defence and restoration processes of the GI tract
- Materials are tasteless and stable and are easy to formulate, enabling tasteless "burn-free" non-tablet forms
- Manufacturing process is scalable and cost competitive

**Innovation by improving existing medicines:
Over-The-Counter (OTC) and Prescription (Rx) opportunities**

NSAID Pipeline

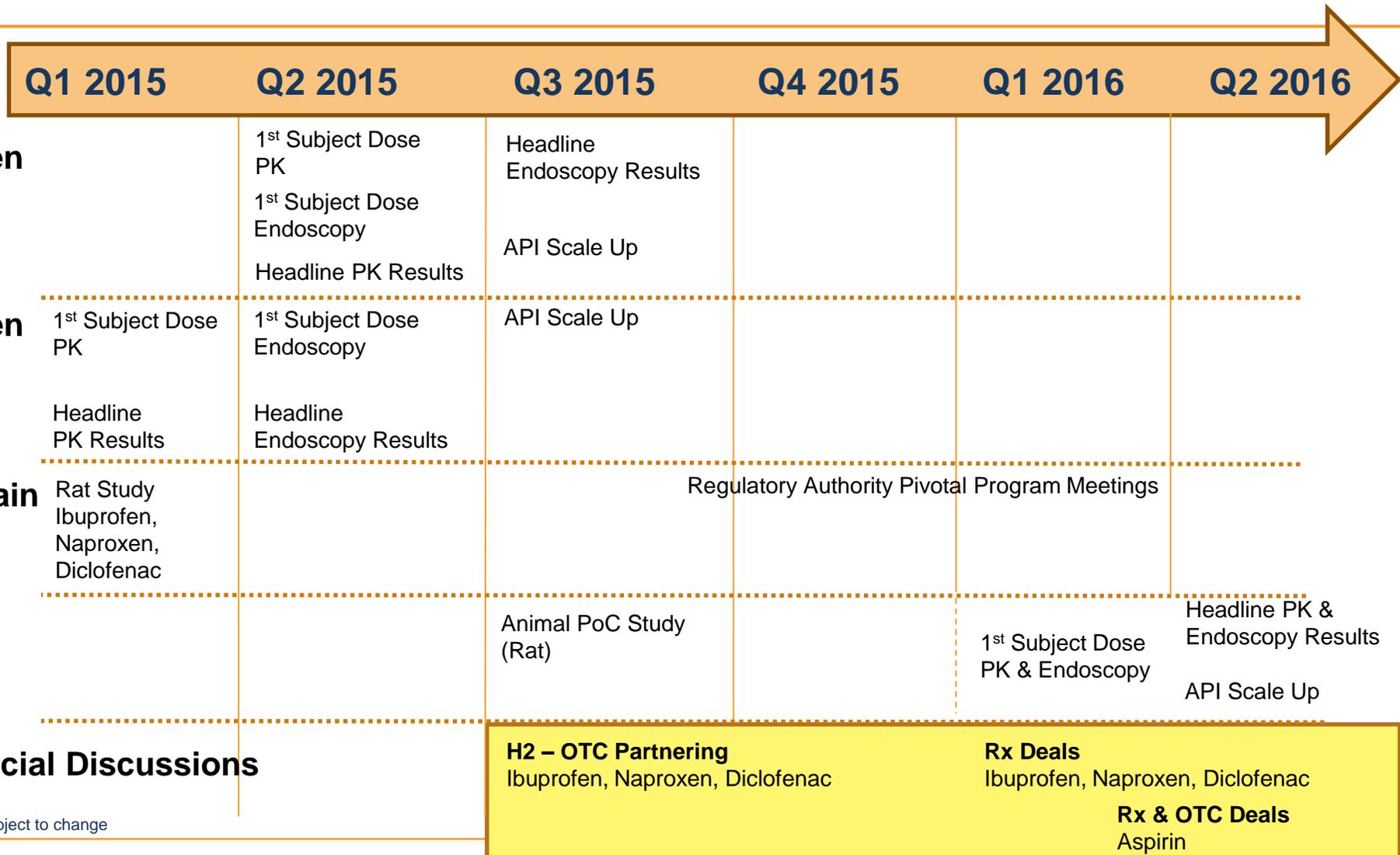


Current status and Next Steps			
Product	API Development	Formulation Development	POC Clinical
OXP Ibuprofen			
OXP Naproxen			
OXP Diclofenac			
OXP Aspirin			

Assets expected to be partnered after PoC stage, prior to “pivotal” registration trials



OXF NSAIDs: Indicative Timeline



* Timelines subject to change

Value Case: OTC Pain Management

- OTC Ibuprofen, Naproxen and Diclofenac **global annual sales of \$2.9bn**
- Growing at 4% per annum
- Opportunity to create strong competitive tension: top 6 players in OTC Pain sell > 50% of all drugs worldwide, keen for differentiation
 - Recent OTC drug transactions* achieving up to c.8x trailing 12-month sales
 - Bayer acquired Merck's consumer unit in October 2014 on 6.5x sales and 21x EBITDA
- Significant opportunity for brand owners to establish competitive advantage and capture market share
 - Every 1% of sales captured equates to **\$29m**
 - Estimated **partnered peak sales of 20%** equates to **\$650m**



OXP seeks to partner its OTC pain assets via auction amongst leading global brand owners

Value Case: Prescription Pain Management



- Rx Ibuprofen, Naproxen and Diclofenac global annual sales of c.\$4bn; c. 30m prescriptions for treatment of chronic conditions in US and T5 Europe
- Opportunity to improve the quality of care and reduce health system costs in Rx markets
- OXP commissioned market research indicates a very robust business case in the US:
 - Payor responses indicate broad reimbursement acceptance at \$2 per day (vs. standard ibuprofen cost of \$0.40 per day). **Significant premium for higher risk patients reflects perceived healthcare economic benefit**
 - Large potential prescription base across all the chronic conditions tested (10-32%)
 - Estimated partnered peak sales in excess of **\$500m**
 - OXPzero cost of goods allows for strong gross profit margin
- EU and RoW opportunity (Rx) together are generally the same size
- Most likely commercialise after OTC rights partnered

Value Case: Cardiovascular Therapy (Aspirin)



- **Rx Aspirin**

- **Prospective Opportunity:**

- Rx Aspirin global sales of \$1.8bn, growing at 1% per annum
- 24m US patient population for Secondary Prevention
- OXPzero™ prescribed to the highest risk patients (top 20%)
- Highly competitive pricing model of \$0.40 per day whilst maintaining strong gross margin
- Peak partnered sales in excess of **\$450m** (US only)

- **OTC Aspirin**

- **Prospective Opportunity:**

- OTC Aspirin has worldwide sales of \$1.6bn, growing at 1% per annum
- Every **1%** of sales captured equates to **\$16m**
- Estimated **peak sales of 20%** equates to **\$430m**
- GI damage is the main usage deterrent as a Primary Prevention

Summary

- Set to revolutionise the vast NSAIDs market through multiple programmes
- With c £6.7m on balance sheet at end of December 2014, OXP is well funded to deliver its NSAID portfolio through to commercial inflection points
- Blue chip investor base
- On track to achieve significant progress from 2H 2015 and beyond

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Appendix

Financial Highlights



Statement of Comprehensive Income

	Six months to 30 June 2014 (Unaudited) £'000	Six months to 30 June 2013 (Unaudited) £'000	Year to 31 December 2013 (Audited) £'000
Revenues	336	501	1,029
Cost of sales	(219)	(321)	(693)
Gross Profit	117	180	336
Research and development	(1,106)	(274)	(691)
Administrative expenses	(740)	(491)	(1,203)
Total administrative expenses	(1,846)	(765)	(1,894)
Operating loss	(1,729)	(585)	(1,558)
Finance income	-	-	22
Loss before tax	(1,729)	(585)	(1,536)
Taxation	-	-	49
Loss after tax attributable to equity holders of the parent	(1,729)	(585)	(1,487)

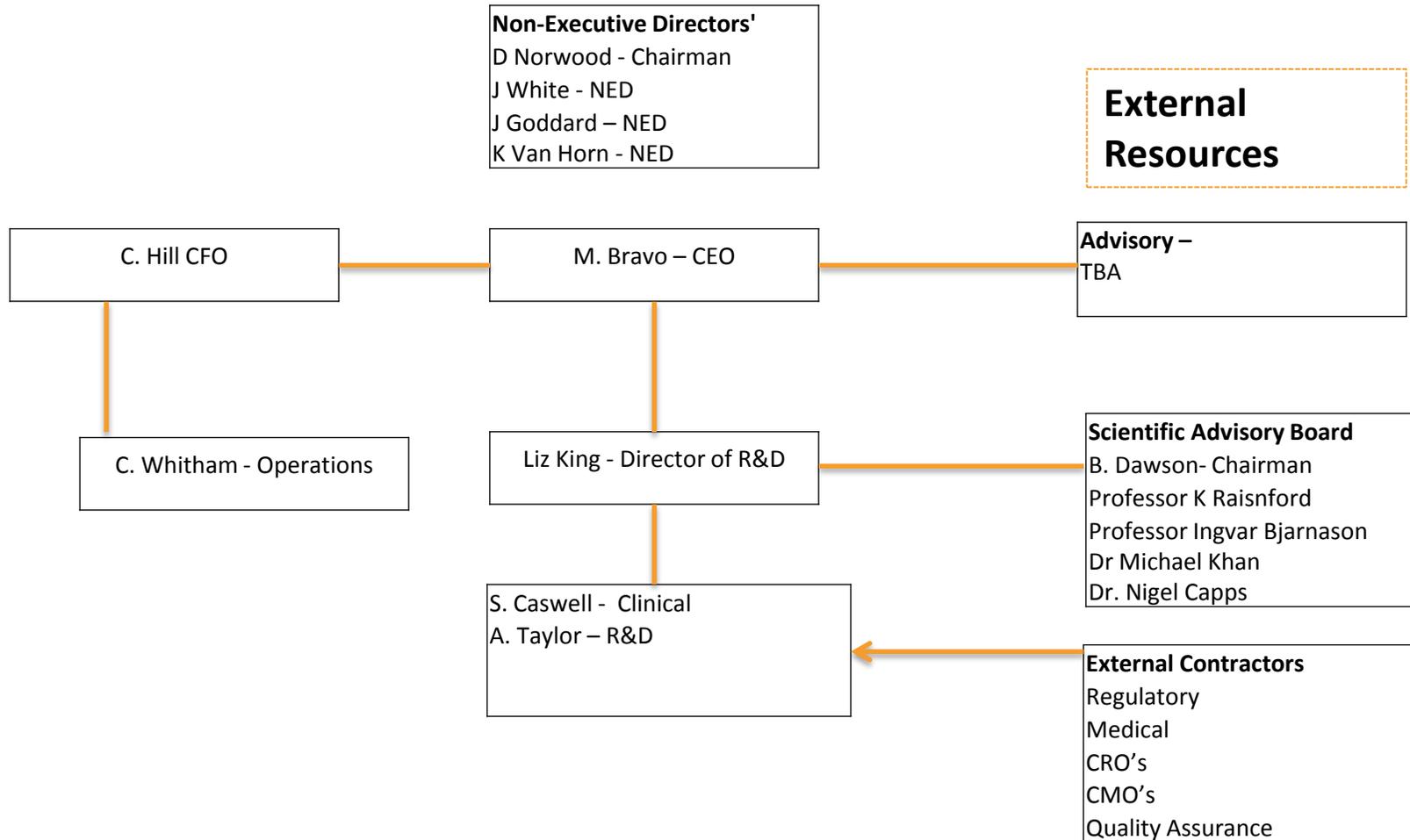
- First half operating loss for 2014 of £1.7m (2013: £0.6m) reflecting planned increase in R&D spend
- Cash and cash equivalents at 31 December 2014 of £6.7m (30 June 2014: £8.2m, 31 December 2013: £9.9m)

Shareholders



Shareholder	Holding (Number)	Holding (%)
Woodford Investment Management	294,266,667	29.26
R I Griffiths	171,222,260	17.03
D Norwood	105,938,633	10.53
M Bravo	65,000,000	6.46
Southern Fox Investments	56,161,538	5.58
Polar Capital	39,538,462	3.93
Aviva	10,258,926	1.02
Craig Drill Capital	8,750,000	0.87

Organisation & Operations



IP Portfolio



Patent	Scope	Stage	Status
Drug Delivery System	Application of Layered Double Hydroxides ("LDH") materials to drug delivery	Granted in UK, France, Germany, US (Parent case and Divisional)	License signed from Oxford university
Preparation of Suspensions	Manufacture of LDH materials	Granted in Australia, Canada, pending in China, India, Europe, USA, Japan	License signed for NSAIDs from University of Queensland
"Layered Double Hydroxides"	Novel highly robust LDH-active anion materials, a procedure for making them, and their use.	New PCT filed on Oct 1 2013.	Owned by OXP
Colonic Drug Delivery formulation	Drug delivery system for proximal large intestine and colon	Parent case granted in Europe, Australia, China, Hong Kong, Iran, Japan, Lebanon, New Zealand, Russian Federation, Saudi Arabia, Turkey. Pending in USA, UAE, Taiwan, Korea, Norway, Mexico, Kuwait, India, Egypt, Colombia, Canada, Brazil. Divisional pending in Russian Federation, Mexico, New Zealand, Japan, Australia and Colombia.	License signed for statins from UCL. Option on further 53 molecules.

- Further patents on NSAIDs technology to be filed in coming months
- Confidential know-how in formulation and manufacture of materials and finished products