Verona Pharma plc

AIM: “VRP”

First-in-Class Drugs to Treat Unmet Needs in Respiratory Diseases

Presentation 28 April 2014

verona pharma

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Agenda

- **Richard Bungay, CFO**
  - Financial highlights
  - 2013 financials
  - 2014 financing
- **Jan-Anders Karlsson, CEO**
  - 2013 operational highlights
  - Update on Company strategy
  - VRP700 – a treatment for chronic, severe cough
  - RPL554 – a unique approach to COPD
  - Anticipated newsflow

Financials
Richard Bungay, CFO

2013 Financial Highlights

Strategic Focus, Clinical Progress and Financial Prudence

During 2013:

- Placing February 2013: gross proceeds £1.16m
- Placing October 2013: gross proceeds £0.8m
- Loss after tax: £2.52m (2012: £2.52m) or 0.74p (2012: 0.82p) per share
- Net cash outflows from operating activities: £2.34m (2012: £2.57m)
- Cash and cash equivalents at 31 Dec 2013: £0.60m (2012: £0.96m)

Post-period:

- Share placing, subscription and open offer March 2014: gross proceeds £14.0m

Income statement

	2013 £'000	2012 £'000
Revenue	-	-
R&D expenses	(1,657)	(1,675)
Admin expenses	(1,160)	(910)
Operating loss	**(2,817)**	**(2,585)**
Finance revenue	3	20
Loss before tax	**(2,814)**	**(2,565)**
R&D tax credit	289	48
Loss for the year	**(2,525)**	**(2,517)**

Share placing, subscription and open offer – March 2014

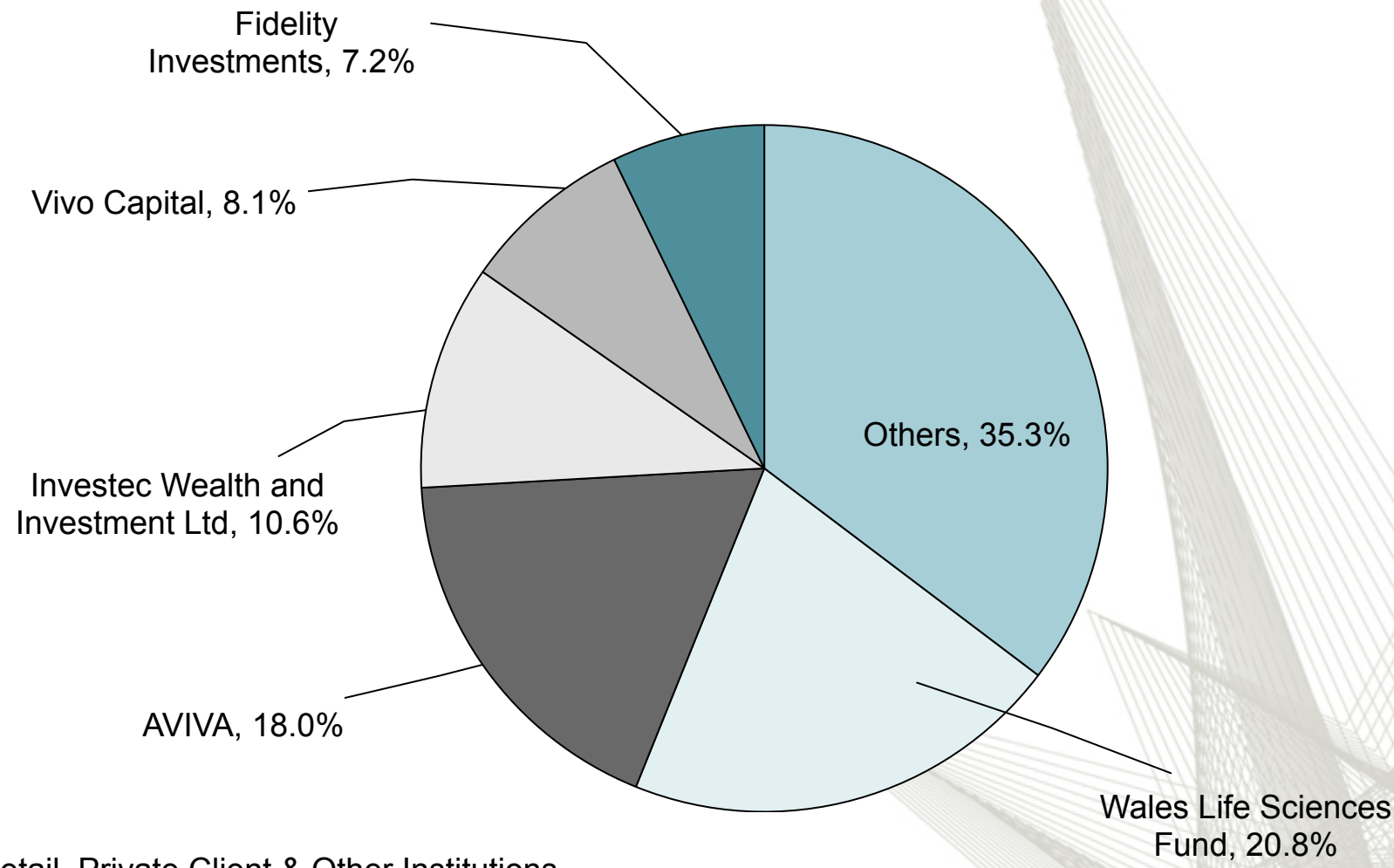
- Raised £14.0 million before expenses
- Use of proceeds:

  RPL554
  - Clinical trials £4.2m (tolerability, dose finding, combination)
  - Preclinical work £1.1m

  VRP700
  - Clinical trials £2.6m
  - Preclinical work £2.2m

- Balance to general working capital

Shareholder Register Analysis



Others: Retail, Private Client & Other Institutions

Source : Argus Vickers
Note: Ownership as at 6 April 2014

Corporate strategy
Jan-Anders Karlsson, CEO

2013 Operational Highlights

Strategic Focus, Clinical Progress and Financial Prudence

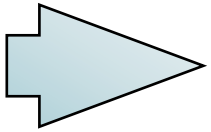
- Q1 RPL554: Demonstrated anti-inflammatory effect in clinical study (MEU) ✓
- Q2 RPL554: ATS conference in USA, asthma and COPD data ✓
- Q2 VRP700: First dosing in confirmatory anti-cough study ✓
- Q3 RPL554: ERS conference in Europe, asthma and COPD data ✓
- Q4 RPL554: Developed novel commercial formulation for nebulisation ✓

Additionally:

- Implemented strategy for faster route to market by developing RPL554 initially as a nebulised bronchodilator for treatment of patients with severe COPD in the hospital
- Filing of multiple patents on RPL554 and VRP700 to extend IP coverage
- Peer-reviewed papers, e.g. The Lancet Respiratory Medicine
- Closed operations in Vancouver and moved all activities to UK

Pipeline: two first-in-class respiratory drugs in Phase 2 development

Project	Indication	Mechanism of Action	Pre-clinical	Phase 1	Phase 2	Phase 3	Market
RPL554	Bronchodilator and anti-inflammatory for COPD	PDE3/4 inhibitor					Hospital / specialist care
VRP700	Chronic cough in lung disease	Novel (undisclosed)					Hospital / specialist care



Completed Phase

Senior management team with respiratory drug development expertise

Dr. Jan-Anders Karlsson, *Chief Executive Officer*

Richard Bungay, *Chief Financial Officer*

Chartered Accountant and previously CFO Chroma Therapeutics; Dir. Corp. Communications and Strategic Planning, Celltech Group Plc; CFO AstraZeneca respiratory therapy area

Grahaem Brown, *Clinical Development and Clinical Operations*

Formerly with Glaxo, Novartis, Pharmacia, UCB/Celltech

Peter Spargo, *SVP CMC and Manufacturing*

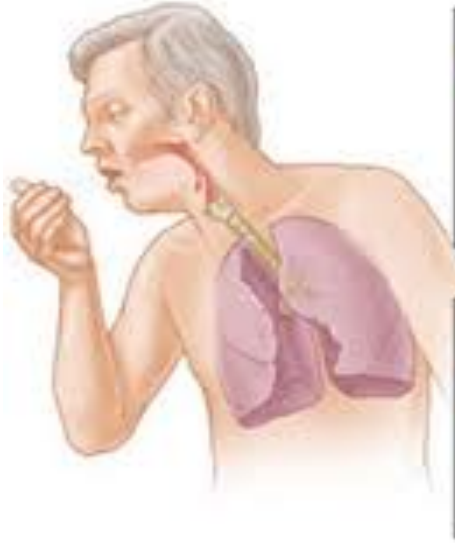
Formerly with Pfizer and Novexel

Kathy Banner, *Senior Scientist, Development*

Strong respiratory pharmacology background with experience in translational medicine and early clinical trials. Formerly with GSK, Pfizer and Novartis

VRP700

A unique approach to treat chronic, severe cough in lung disease



Cough: Common complaint but limited treatment options available

- **Current therapies are ineffective or have significant side effects**
  - e.g. codeine, hydrocodone, benzonatate, dextrometorphan
  - Potentially significant side effects like nausea, constipation, respiratory depression and addiction
- **New formulations of existing compounds developed for bacterial and post-viral cough in out-patients**
  - e.g. based on codeine, hydrocodone, benzonatate, dextrometorphan
- **Few novel classes of compounds in development to treat cough**
  - trpv1 antagonist, P2X3 inhibitors, etc.; limited data available

Chronic Severe Cough (>8 weeks)

Patients with Interstitial Lung Disease and Lung Cancer

- **Interstitial Lung Disease (ILD)** is a heterogeneous group of disorders that distort the architecture of the lung parenchyma with inflammation & fibrosis
- Overall incidence of **idiopathic pulmonary fibrosis (IPF**), a subset of ILD, is 2.6-3.2 per 10,000 and this condition accounts for >45% of diagnoses of ILD
- **Primary bronchogenic carcinoma** is the most common lethal malignancy in the United States, with >172,000 new cases expected in 2003[1]
- **Small Cell Lung Cancer:** Cough is present in >55-65% of patients at the time lung cancer is diagnosed[2,3] and a dry cough persisted in 30-40% of patients surviving >3-5 years[3]

No effective and safe anti-cough therapy available for these groups of patients

* Jemal, et al (2004) Cancer statistics, 2004.CA Cancer J Clin54,8-
** Vaaler, et al Chest1997;111,115-
*** Myers, et al, CHEST 2005; 128:3261–

Verona Pharma's solution: VRP700

- **A first-in-class inhaled drug with novel mechanism of action**
  - VRP700 site of action is in the lung (vs. CNS for existing drugs)
- **Significant anti-tussive activity demonstrated in pre-clinical models**
- **Highly effective in pilot clinical study in patients with underlying lung disease and chronic cough**
  - Reduced number of coughs (p=0.001) compared to placebo and pre-treatment values
- **Well tolerated without opioid-like side effects (constipation, addiction)**

VRP700 – on-going clinical anti-cough study in IPF
VRP700-002-2012

- Assessment of a single dose of nebulized VRP700 in patients with intractable persistent cough in the University of Manchester (J Smith)
- Randomized, double blind, placebo controlled, cross over study
- 20 patients with Idiopathic Pulmonary Fibrosis
- Each patient randomly assigned to receive either VRP700 or placebo via nebulizer.
- VRP700 100 mg or placebo

Data expected Q2 2014

VRP700 – next steps

Key questions to be answered in next series of pre-clinical and clinical studies

- Identify optimal route of administration, device and formulation
- Identify active dose and tolerability on repeat dosing
- Dosing frequency – once a day?
- Identify patients benefitting from this new treatment

Near-term studies required to reach Phase 2b

- Optimize delivery and formulation
- Tolerability and dose-dependent anti-cough effect
- Dose-response in patients with chronic, severe cough

VRP700 – the opportunity

High unmet medical need in chronic, severe cough

Little competition in late stage clinical development

Specialist setting provides interesting commercial opportunity

Access to community and out-patient settings through partnering

The Chronic Obstructive Pulmonary Disease (COPD) Market Opportunity

RPL554 nebulised suspension for treatment of COPD exacerbations in hospital

COPD: A growing market with significant unmet medical need

- 65 million people worldwide suffer from moderate to severe COPD: WHO expects COPD to be the 3rd leading cause of death globally by 2020
- Majority of current drugs are aimed at long-term maintenance therapy: 'mass market' dominated by Big Pharma (e.g. GSK, AZN, BI, Novartis)
- Despite widely available maintenance therapy, acute periods of worsening symptoms (exacerbations) cause(d):
  - 1.5 million **emergency room visits** in the US in 2000
  - 726,000 **hospitalisations** in the US in 2000
  - 120,000 **deaths** in the US in the US in 2000
  - > 25,000 **deaths** per year in the UK: estimated 15% of COPD patients **die** within 3 months of being admitted to hospital

Urgent need for new and more effective treatments of exacerbations

Mer, CHE April 2009 Vol 27, no.4
www.hse.gov.uk/statistics/caus/dis/COPD

All COPD exacerbations are treated with bronchodilator drugs

Global Initiative for Chronic Lung Disease (GOLD) criteria, 2013

Short-acting bronchodilators preferred in acute treatment

- Short-acting inhaled beta$_2$ agonists (SABA) with or without short-acting anti-cholinergics are the preferred bronchodilators for the treatment of an exacerbation

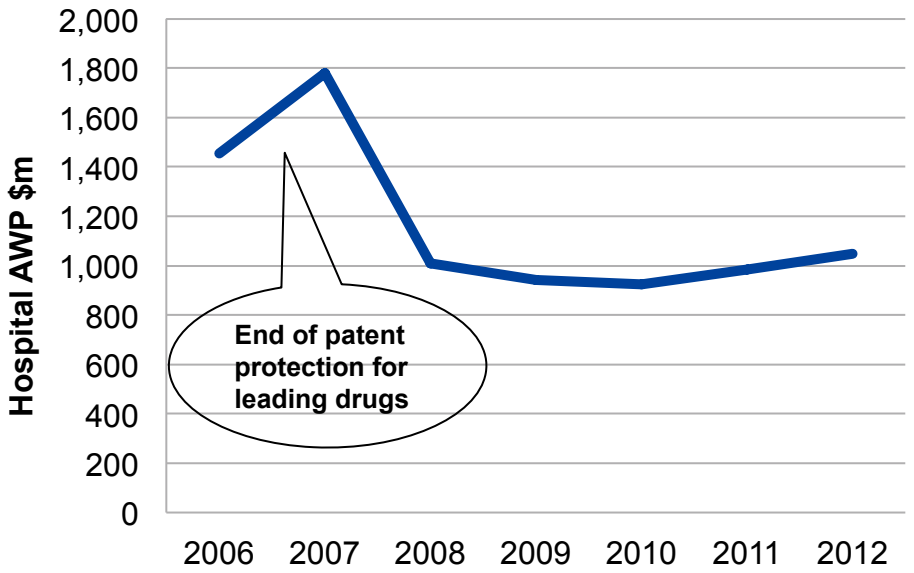
Combining drug classes better than increasing the dose of one drug

- "…combining bronchodilators of different pharmacological classes may improve efficacy and decrease the risk of side effects compared to increasing the dose of a single bronchodilator"

RPL554 is the only novel class of bronchodilator drug in clinical development worldwide

Near-term opportunity: hospital market for nebulised bronchodilators

Hospital sales of nebulized bronchodilator drugs in US



- Shorter development time, manageable cost (vs. 'mass market' indication)
- Less competition:
  - Large pharma has less presence in the hospital market
  - No new classes of bronchodilator drugs in clinical development
- Chronic treatment in US home care market is an even larger opportunity with a partner

Source(s): Symphony Health Solutions, Bloomberg Ind.

A dual PDE3 and 4 inhibitor would be very attractive as a novel treatment for COPD

Dual inhibition of PDE3 and PDE 4

X

X

PDE3
Airway Smooth muscle

Airway smooth muscle
(PDE3A,3B,4D)

Relaxation

PDE4
Inflammatory cell types

Neutrophils
PDE4A,B,D

↓ MPO
↓ NE
↓ MMP-9
↓ Respiratory burst

Eosinophils
PDE4A,B,D

↓ LTC4

Epithelial cells
PDE3,4A,C,D

↓ TNF-a
↓ GM-CSF
↓ IL-6

Lymphocytes
PDE3,4A,B,D

↓ IL-4
↓ IL-5

Macrophages
PDE3,4A,B,D

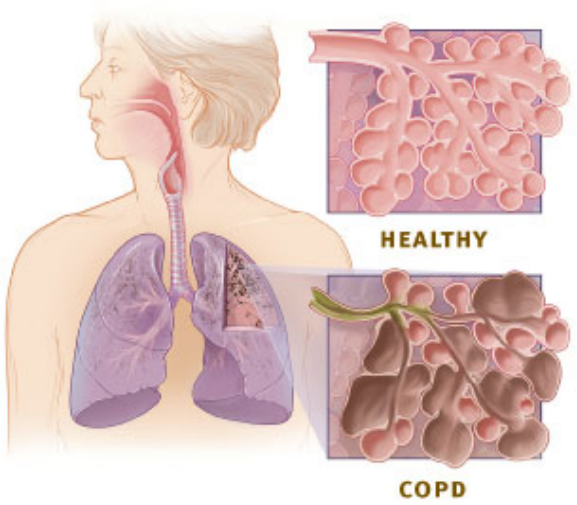
↓ TNF-a
↓ superoxide

Bronchodilation

Anti-inflammatory effects

RPL554: clinical data supports effectiveness and positioning

- **Significant positive clinical benefit demonstrated**
  - >100 patients treated in Phase 1 and 2 studies
  - Clinically significant bronchodilation in COPD patients
  - Anti-inflammatory effect relevant to COPD also
    - demonstrated in clinical trial
  - No clinically relevant side effects observed



- **Dual PDE3/4 inhibition represents a unique approach**
  - Different class from beta2-agonists and muscarinic receptor antagonists

- **Pre-clinical data demonstrating evidence of synergistic bronchodilator effects with existing standard of care treatments**

RPL554 exhibits a very attractive profile for a COPD add-on therapy in hospitals and homecare

RPL554: an attractive profile vs. other treatments

	RPL554 (Dual PDE3/4 inhibitor)*	Beta2 agonists SABA, LABA	Anti-muscarinics SAMA, LAMA	PDE 4 inhibitor Daxas®
Bronchodilation				
Rapid onset of action	✓	✓	-	-
Significant peak effect	✓	✓	✓	-
Anti-inflammatory effect	✓	-	-	✓
Adverse events				
Tremor	-	✓	-	-
Hypokalemia	-	✓	-	-
Dry mouth / anti-cholinergic effects	-	-	✓	-
Tachycardia	-	✓	✓	-
Nausea, vomiting, diarrhea	-	-	-	✓
CNS	-	-	-	✓

* At currently used clinical dose

RPL554: Clinical development plan for “in-hospital use”

Milestones to be achieved through this investment by 2H 2015

- Establish bronchodilator dose and therapeutic window of RPL554
- Confirm safety of dosing RPL554 together with Standard of Care
- Drug product for start of Phase 2b

Phase 2b

- Confirm effective dose and safety in hospitalized COPD patients
- <2 weeks treatment, hospital setting

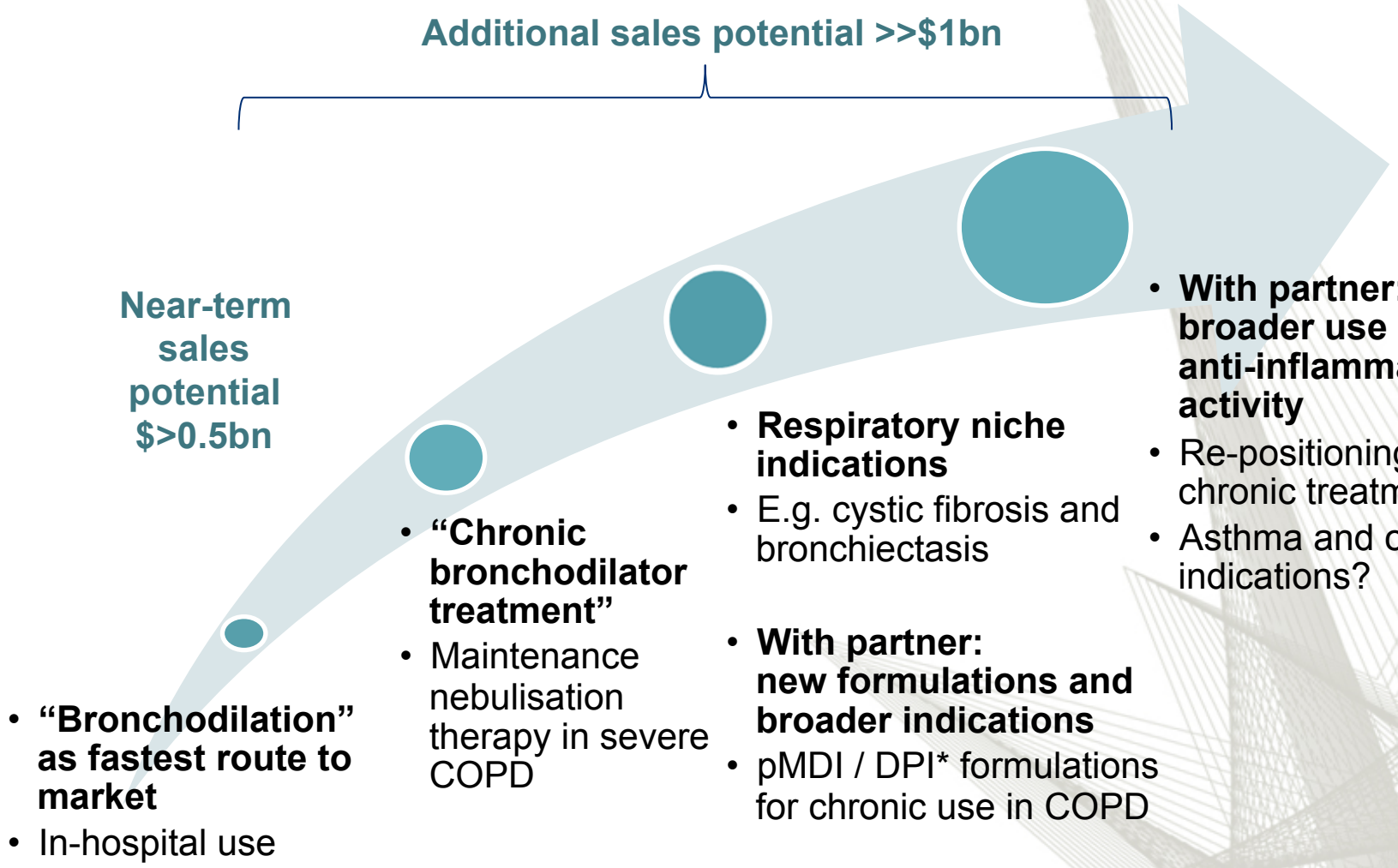
Phase 3

- Expanded study population for efficacy and safety

Shorter development time and manageable cost

Well established regulatory endpoints

Broad commercial potential for RPL554



* pMDI = Pressurised metered dose inhaler
DPI = Dry Powder Inhaler

Anticipated 12 month milestones

2014

- Q1 RPL554 MHRA Scientific Advice meeting ✓
- Q1 Financing to support strategy ✓
- Q2 VRP700: Data from confirmatory anti-cough study
- Q3/4 RPL554: First dosing in clinical study with new formulation

2015

- H1 RPL554: year of data

Building a respiratory disease – focused biopharma company

High value drugs for specialist indications

- **First-in-class differentiated drugs, addressing high unmet needs in growing respiratory markets**

- **Focused on the commercially attractive hospital market**
  - RPL554 for COPD in hospitalized patients
  - VRP700 for chronic cough in hospital setting
  - Shorter development time lines and less costly clinical trials

- **Opportunity to access community / out-patient settings through partnerships**
  - DPI / pMDI inhalers provide convenient maintenance treatment
  - Demonstrated that DPI and pMDI manufacturing is technically feasible

Appendix

Board of Directors: Extensive experience

Prof. Clive Page, *Non-Executive Chairman*

Company co-founder. Recognised international authority on lung diseases and inflammation. Co-inventor of NAIP technology. Joint Head of Institute Pharmaceutical Science, King's College London.

Dr. Jan-Anders Karlsson, *Chief Executive Officer*

Former CEO of S*BIO Pte Ltd, Singapore. Previously R&D roles in pharmaceutical industry, incl. EVP Research Bayer Healthcare AG, Rhone Poulenc Rorer and Astra.

Claire Poll, *Corporate Director*

Legal & corporate executive. Previously Corporate Development Director Inmarsat Ventures plc (LSE: c. £2.5b market cap).

Prof. Trevor Jones, *Non-Executive Director*

Former Director General, Association of the British Pharmaceutical Industry. Successfully led development of numerous drug treatments as R&D Director at The Wellcome Foundation.

Dr. Patrick Humphrey, *Non-Executive Director*

Former Director of GlaxoSmithKline's Division of Pharmacology. Instrumental in the discovery of numerous respiratory and CNS drugs on the market. Latterly the EVP and Head of Research at Theravance in San Francisco from 2001 to January 2008.

Stuart Bottomley, *Non-Executive Director*

Financier & former leading fund manager .

GOLD guidelines 2011: intensify treatment during COPD exacerbations in-hospital

Treatment changes in hospital during exacerbations

1) Increase existing treatment — Beta2-agonists, theophylline

2) Add treatment — Bronchodilators, antibiotics, oral corticosteroids, diuretics, oxygen

3) Change administration form:
   * Inhalation to oral — Corticosteroids
   * New inhalation form — pMDI to nebulized drug
   * Oral to i.v — Diuretics, corticosteroids,theophylline

4) Support respiration — NIV, respirator