

#### **BELL POTTER HEALTHCARE CONFERENCE**

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## **COMPANY OVERVIEW**

Cyclopharm Limited (CYC) is a leading diagnostic lung imaging company

Lead nuclear medicine product **Technegas®** is currently available in 60 countries with significant opportunity to expand into the USA with sales targeted for 2021 following completion of USFDA New Drug Application review

The gold standard & world leader in functional lung ventilation imaging technology - supported by 4.3 million patient studies and 100's of peer reviewed published studies with COVID-19 applications for use

Recurring consumables and capital equipment revenue streams

A profitable and growing company with a history of **dividend** payments

Opportunity to broaden Technegas<sup>®</sup> applications Beyond pulmonary embolism diagnosis into large addressable markets such as COPD and Asthma



## PULMONARY EMBOLISM

![](_page_3_Picture_1.jpeg)

~3 million cases of PE p.a. but could be much higher

![](_page_3_Picture_3.jpeg)

#### **Symptoms**

are varied with diagnosis confirmed either through CTPA or a nuclear medicine ventilation-perfusion study

![](_page_3_Picture_6.jpeg)

**30%** of pulmonary embolisms are fatal if left untreated

![](_page_3_Picture_8.jpeg)

#### **Nuclear Medicine**

using 3-D imaging is the most accurate method of diagnosis

![](_page_3_Picture_11.jpeg)

## WHAT THE GUIDELINES SAY ABOUT TECHNEGAS® :

Endorsed by the guidelines from the <u>European<sup>1-2</sup></u> and the <u>Canadian<sup>3</sup></u> Associations of Nuclear Medicine (EANM & CANM)

- 1. 1Bajc M, et al. Eur J Nucl Med Mol Imaging 2019; [Epub ahead of print]: https://link.springer.com/content/pdf/10.1007%2Fs00259-019-04450-0.pdf
- 2Bajc M, et al. Eur J Nucl Med Mol Imaging 2009; 36(8): 1356-70; https://eanm.org/publications/guidelines/gl\_pulm\_embolism\_part1.pdf
- 3. Leblanc M, et al. CANM 2018; https://canmacmn.ca/resources/Documents/Guidelines\_Resources/MasterDocument\_Final\_Nov\_21\_incl-Exec-Sum\_ver3\_Dec.%2012\_;pdf 2.a

- " Using 99m-Tc-Technegas is according to clinical experience **better than the best aerosols** "
- " Technegas® **facilitates interpretation**, particularly in COPD"

" For ventilation,  $99m\mathcal{Tc}$  Technegas  $^{\mbox{\tiny B}}$  is the best-aerosol particularly in patients with COPD "

" Liquid aerosols are inferior for SPECT and should not be used unless Technegas  $^{\mbox{\tiny B}}$  is not available "

" The **best widely available agent for ventilation** is 99m-Tc-Technegas "

" Because of the very small particle size, this agent is distributed in the lungs almost like a gas and deposited in alveoli by diffusion, where they remain stable, thus **providing the best possible images for ventilation** SPECT "

" Another advantage is that only a few breaths are sufficient to achieve an adequate amount of activity in the lungs, **reducing time and personnel exposure to radiation** "

" Technegas<sup>®</sup> is considered the **agent of choice** in the COPD population as there is less central airway deposition, better peripheral penetration, and it does not wash out as quickly as traditional aerosols "

![](_page_4_Picture_14.jpeg)

## RADIATION DOSIMETRY

#### A nuclear medicine V/Q scan is exponentially lower in dose than CTPA

Technique	Effective dose (mSv/MBq)	Effective dose (mSv)	Breast absorbed dose (mGy)	Lung absorbed dose (mGy)	
Ventilation Technegas (20MBq) <sup>1-3</sup>	0.015	0.30	0.13	2.2	
Ventilation <sup>99m</sup> Tc- DTPA (20MBq) <sup>1-2</sup>	0.007	0.14	0.04	0.30	
Ventilation <sup>133</sup> Xe (800MBq) <sup>1</sup>	0.0014	1.12	0.09	0.89	
Perfusion MAA (120MBq) <sup>1-3</sup>	0.012	1.44	0.60	7.92	
Low dose CT non-contrast <sup>4</sup>	NA	~ 1.00	-	-	
CTPA 16 slice <sup>1</sup>	NA	14.4	10-20	10	
CTPA 64 slice <sup>1,3</sup>	NA	19.9	22	20	

6

4. Ling IT, et al. Intern Med J 2012; 42(11): 1257-1261

![](_page_5_Picture_6.jpeg)

## NUCLEAR MEDICINE PROVIDES BETTER DIAGNOSTIC OUTCOMES IN DIAGNOSING PE

![](_page_6_Figure_1.jpeg)

Table: Diagnostic ability of V/Q SPECT/CT<sup>1</sup>, V/Q SPECT<sup>1</sup>, CTPA<sup>1</sup> and V/Q Planar<sup>2</sup> to detect PE (adapted from Hess and al, 2016<sup>1</sup> and from Reinartz et al, 2004<sup>2</sup>)

- V/Q SPECT and V/Q SPECT/CT have shown that V/Q SPECT/CT is superior in most clinical settings with better overall diagnostic performance<sup>1</sup>
- In situation of acute PE, chronic PE pregnancy, paediatrics and the COPD population, V/Q SPECT, with or without low-dose CT, can be considered as a first-line investigation to detect PE3 due to:

![](_page_6_Figure_5.jpeg)

Its low radiation and no adverse reactions<sup>3</sup>

Its higher accuracy, sensitivity and negative predictive value when compared to CTPA<sup>3</sup>

3. Leblanc M, et al. CANM guidelines; Nov 2018: www.canm-acmn.ca/guidelines

![](_page_6_Picture_11.jpeg)

## **TECHNEGAS® AROUND THE WORLD**

![](_page_7_Figure_1.jpeg)

![](_page_7_Picture_2.jpeg)

Technegas<sup>®</sup> was introduced to the medical community in 1986 1

![](_page_7_Picture_4.jpeg)

Technegas<sup>®</sup> revenues are generated in **60 countries** via a combination of direct and distributor sales models

![](_page_7_Picture_6.jpeg)

Over 4.3 million patient procedures to date

![](_page_7_Picture_8.jpeg)

![](_page_7_Picture_9.jpeg)

## BENEFITS OF USING TECHNEGAS®

![](_page_8_Figure_1.jpeg)

## SUPERIOR TO COMPETITIVE NUCLEAR MEDICINE PRODUCTS

![](_page_9_Figure_1.jpeg)

#### - Xenon - 133 -

![](_page_9_Picture_3.jpeg)

True radioactive gas inhaled with full face mask

![](_page_9_Picture_5.jpeg)

![](_page_9_Picture_6.jpeg)

Constant inhale -exhale breathing for 15 mins

![](_page_9_Picture_8.jpeg)

**Requires special rooms** to contain radioactive gas in the event of a release

No 3D images

imaging resulting in

inferior clinical outcomes

#### - DTPA Tc99m

![](_page_9_Picture_11.jpeg)

Wet Aerosol impacts efficacy and clinician interpretations

![](_page_9_Picture_13.jpeg)

**Creates hotspots** in presence of small airways lung diseases, which is a frequent comorbidity in PE

![](_page_9_Picture_15.jpeg)

## SUPERIOR TO COMPETITIVE IMAGING MODALITIES

![](_page_10_Figure_1.jpeg)

### **TECHNEGAS®** The Canadian Case Study

![](_page_11_Figure_1.jpeg)

#### Canada is Cyclopharm's largest single country market

Market leader for diagnosing PE

2

3

5

6

7

14 consecutive years of PAS growth

Represents a strong indicator of USA acceptance

Xe-133 rapidly displaced by early adopters

Direct correlation with the number of active generators and annual consumable sales

Market driven by public healthcare sector

Market launch initiated province by province, leveraging off pilot sites

![](_page_11_Picture_11.jpeg)

## TECINEGAS

## COMING TO AMERICA

![](_page_12_Picture_2.jpeg)

![](_page_13_Picture_0.jpeg)

![](_page_13_Picture_1.jpeg)

#### 600K Nuclear Medicine Ventilation Procedures p.a.

- 4,000,000 patient procedures conducted in the USA per annum to diagnose pulmonary embolism (15% Nuclear Medicine 85% CTPA)
- 600,000 Nuclear Medicine Ventilation procedures equals \$90m USD
- Target market for Technegas<sup>®</sup> in the USA equates to ~480,000 patient procedures of the total 600,000 procedures.
- The USA represents the single largest market for Technegas<sup>®</sup> with half of the world's nuclear medicine departments
- Subject to a successful FDA approval, the Company is targeting US commercialisation in 2021
- First priority following USFDA approval is to repeat our Canadian experience by first **displacing Xe133 followed by DTPA** as the standard of care diagnostic product
- 3D SPECT imaging using Technegas<sup>®</sup> is proven to be **clinically superior and safer than CTPA**. Once commercialised Cyclopharm will target to **double the existing nuclear medicine PE market** dominated by CTPA from **15% to 30%**.
- Once established in the USA market, the company will seek to expand the use of Technegas<sup>®</sup> into disease states exponentially larger than the existing markets Beyond PE

![](_page_13_Picture_12.jpeg)

## **USA REIMBURSEMENT IS ESTABLISHED**

![](_page_14_Picture_1.jpeg)

#### MEDICARE HOPPS (HOSPITAL OUTPATIENT PROSPECTIVE PAYMENT SYSTEM) \$USD

WWW.SNMMI.ORG

CPT/		Trade	Oct 2019	Jan F 2020	Oct 2019	Jan F 2020	Oct 2019	Final January CY 2020	%
HCPCS	Description	Name	APC	APC	SI	SI	Payment Rate	Payment Rate	Change
78579	Pulmonary ventilation imaging (eg, aerosol or gas)		5591	5591	S	S	\$353.49	\$368.08	4.0%
78580	Pulmonary perfusion imaging (eg, particulate)		5591	5591	S	S	\$353.49	\$368.08	4.0%
78582	Pulmonary ventilation imaging (eg, aerosol or gas) and perfusion imaging		5592	5592	S	S	\$455.52	\$471.93	3.5%
78597	Quantitative differential pulmonary perfusion, including imaging when performed		5591	5591	S	S	\$353.49	\$368.08	4.0%
78598	Quantitative differential pulmonary perfusion and ventilation (eg aerosol or gas), including imaging when performed		5592	5592	S	S	\$455.52	\$471.93	3.5%
78599	Unlisted respiratory procedure, diagnostic nuclear medicine		5591	5591	S	S	\$353.49	\$368.08	4.0%

Nuclear medicine lung imaging reimbursement is based on established procedures and is agnostic as to the ventilation agent used

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![](_page_14_Picture_10.jpeg)

Helping in the fight

against COVID-19

Nuclear Medicine Imaging In COVID19

![](_page_15_Picture_2.jpeg)

![](_page_15_Figure_3.jpeg)

Helping in the fight against COVID-19

![](_page_16_Picture_2.jpeg)

Technegas featured as the April "Image of the month" in diagnosing COVID-19 related Tracheobronchitis seen in ARDS

![](_page_16_Picture_4.jpeg)

![](_page_16_Picture_7.jpeg)

+

Helping in the fight against COVID-19

![](_page_17_Picture_2.jpeg)

![](_page_17_Picture_3.jpeg)

100-patient clinical trial designed to use ventilation perfusion SPECT-CT with Technegas\*:

#### Primary Endpoint:

To investigate and characterize the extent of COVID-19 infection related ventilation and perfusion injury at  $\leq$ 4-weeks and 6-months post infection recovery in asthmatic and healthy populations.

#### Secondary Endpoints:

To investigate if COVID-19 infection related ventilation and perfusion injury ≤4-weeks and 6-months post infection recovery is related to inflammatory markers, symptoms (quality of life, dyspnea, exercise limitation) and clinical measurements (airflow in asthmatic and healthy populations

To investigate if COVID-19 infection related ventilation and perfusion injury ≤4-weeks post infection recovery is predictive of symptoms and clinical outcomes 6-months post infection recovery in asthmatic and healthy populations

#### Exploratory Objective:

To determine if COVID-19 infection related ventilation and perfusion injury) ≤4-weeks and 6months post SARS-CoV2 infection recovery is less pronounced in asthmatic compared to healthy populations and if this difference can be explained by protective mechanisms due to skewing of immune response (Th2/Th1 in asthma) and/or dampening of Th1 cytokine storm due to maintenance corticosteroid therapies.

\*https://clinicaltrials.gov/ct2/show/NCT04549636

![](_page_17_Picture_13.jpeg)

Helping in the fight against COVID-19

![](_page_18_Picture_2.jpeg)

## Technegas is viewed as the safest nuclear medicine ventilation agent globally

![](_page_18_Picture_4.jpeg)

#### Potential Operator and Environmental Exposure:

Xe-133 requires continuous rebreathing for up to 15 minutes. DTPA requires 3-5 minutes of periodic administration to deliver the target dose Technegas only requires 3-5 tidal breaths (~30 seconds)

#### Smalll hydrophobic particles:

DTPA is an aqueous droplet measuring ~1,700 nm in size is an ideal carrier for the COVID-19 virus

Technegas is made up of carbon-Tc99m particles ~250 nm in size that adheres to the alveolar & is not likely to carry the COVID-19 virus equal to ~125 nm

#### Less likely to induce cough reflex:

Xe-133 – patient likely to experiencing coughing during the prolonged procedural administration

DTPA- method of administration is likely to stimulate the cough reflex

Technegas- ~50ug of hydrophobic particles combined with ultrashort administration is not likely to cause bronchospasm

#### Significant US Clinical Support

22 June 2020 – **77 USA Nuclear Medicine Physicians** petition the USFDA to expedite the review of Technegas

2 November 2020 – **90 USA Nuclear Medicine Physicians** petition as a matter of clinical urgency the approval of Technegas in light of the surge in COVID-19 patients

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## **USA 2021 COMMERCIALISATION PLAN**

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![](_page_19_Picture_2.jpeg)

Investor Update

# $\frac{\mathsf{EXPANDING}}{\mathsf{INDICATIONS}}$

![](_page_20_Picture_1.jpeg)

## **BEYOND PE : Clinical Initiatives**

Clinical Trials Sponsored by Cyclomedica

- Hunter Medical Research Institute (Newcastle, AU): Diagnosis and response to therapy in severe asthma and COPD<sup>1</sup>
- Woolcock Institute (Sydney, AU): Diagnosis and response therapy in mild to moderate COPD<sup>3</sup>
- CHUM (Montreal, CA): Early detection of COPD in asymptomatic smokers<sup>4</sup>
- Dalhousie (Halifax, CA): Post-lung transplant patients
- McMaster University Firestone Institute (Hamilton, CA): Prevalence and clinical relevance of ventilation heterogeneity and luminal cellular inflammation in lung cancer patients pre and post lung resection<sup>2</sup>
- McMaster University Firestone Institute (Hamilton, CA): COVID-19 Related Lung Ventilation and Perfusion Injury<sup>5</sup>

Other Non-Sponsored Clinical Initiatives

- Macquarie University (Sydney, AU): ELVR with endobronchial valves in severe COPD patients
- Macquarie University (Sydney, AU): Bronchial Thermoplasty procedure in asthma patients

1. ACTRN12617001275358 - Can functional lung ventilation imaging identify treatable traits in obstructive airway disease?

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https://ichgcp.net/clinical-trials-registry/NCT03728712
https://clinicaltrials.gov/ct2/show/NCT04549636
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![](_page_21_Figure_15.jpeg)

#### INTERVENTIONAL THERAPIES LVRS, ELVR, Transplant, Lung Cancer

**CHRONIC AIRWAY DISEASES** COPD – Asthma

PULMONARY EMBOLISM (PE) VTE – CTEPH - PH

![](_page_21_Picture_19.jpeg)

<sup>2.</sup> https://clinicaltrials.gov/ct2/show/NCT04191174?term=technegas&draw=2&rank=3

<sup>3.</sup> http://investor.cyclopharm.com/site/PDF/1561\_0/BetterDefiningAirwaysDiseasewithTechnegas

## **THREE VALUE HORIZONS**

![](_page_22_Figure_1.jpeg)

## CYCLOPHARM INVESTMENT CASE

![](_page_23_Picture_1.jpeg)

![](_page_23_Picture_2.jpeg)

**Profitable and** 

**Growing MedTech** 

Underlying business

is cash positive

and issuing dividends

![](_page_23_Picture_3.jpeg)

![](_page_23_Picture_4.jpeg)

#### First in Class

Established Gold Standard Proprietary product sales to 60 countries with over 4.3 million studies to date

Clinical Agent of Choice referenced by name in multiple clinical guidelines

#### Recurring Revenue

From single patient consumables Similar to an annuity model

![](_page_23_Picture_10.jpeg)

#### USFDA Approval

Set to quadruple the size of the existing PE business, based on significant existing demand with a COVID-19 as an accelerator.

> Further leverage penetration into the CTPA market

![](_page_23_Picture_14.jpeg)

#### Optionality

Into indications beyond PE into chronic respiratory disease management could deliver exponential growth

![](_page_23_Picture_17.jpeg)

![](_page_24_Picture_0.jpeg)

## THANK YOU