Investment Memorandum 2019

Confidential. (Version:1.05)

Table of contents

1. *Executive Summary* 2.
2. *Management* 3.
3. *The Market* 4.
4. *Health Tourism* 5.
5. *The Business Mode* 6.
6. *Milestones* 7.
7. *P4ML – Our NIPT Technology* 8.
8. *Research & Development* 9.
9. *Dubai future Accelerators* 10.
10. *P4ML – Pregnancy/Birth Roadmap* 11.
11. *Laboratory* 12.
12. *Key Financials* 13-14.
13. *The Company* 15.
14. *Key Project Advisors* 16.
15. *FAQ* 17.
16. *Disclaimer*

1. Executive Summary

Company Overview

P4 Medical Laboratory is Ireland's first ever precision medicine company. We aim to revolutionise the way we think about health by promoting the maintenance of wellness and the prevention of disease.

- ***Our Vision*** is one of collective health intelligence through the building of a global medical community, where data and knowledge is shared.
- ***Our Mission*** supports connectivity of clinicians and data sharing in order to inform, empower and transform health and wellness.

Our Mission

P4 refers to precision medicine which provides Predictive, Preventive, Personalised and Participative information, allowing for the creation of a unique and personalised medical pathway for each individual.

Our objective is to make genetic testing and genome sequencing an integral element in mainstream healthcare. This, along with a MultiOMICS approach, will deliver a more targeted approach in dealing with potential DNA mutations. Our goal is to provide new possibilities and actionable insights to improve the lives of patients.

Why Invest in P4ML

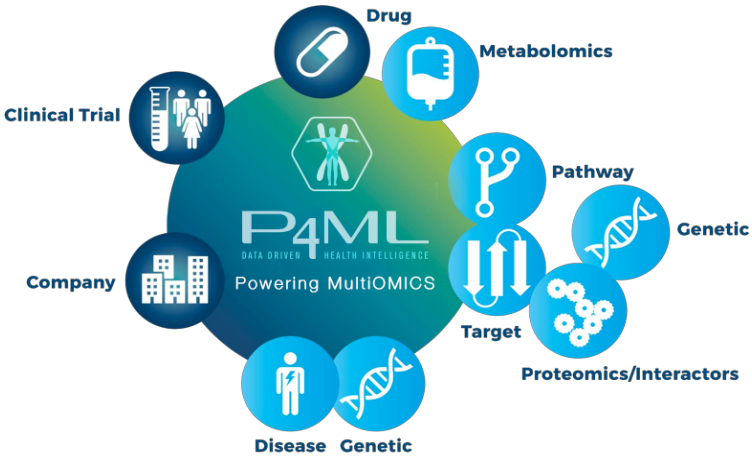
According to the World Health Organisation 1 in 6 women develop complications that threaten her or her baby's life. Every 2 minutes a mother dies from complications related to pregnancy or childbirth. Every minute around the world 250 babies are born. 29 of these are born too early; sadly 5 are stillborn, and 5 more die of complications.

The global non-invasive prenatal screening market is a multi- dollar market, it is competitive, dynamic and growing fast. P4ML's key geographical markets are currently Europe, the Middle East with market opportunities for the future in new regions. In addition, P4ML is looking to expand our product and services portfolio further into newborns screening and into new high value fields such as oncology.

The 'EOLAS' test is (CE-IVD) and FDA Approved, which removes barriers to entry in the Healthcare market. This is a significant advantage to scaling this service Globally. P4ML has also been endorsed and supported by Global clinicians. P4ML is the only EMEAI company which works directly with clinicians, thus ensuring consent, data protection regulations and ethical requirements are complied with.

P4ML has successfully 'Beta Tested' its test send out for Irish and UAE maternity hospitals. Now clinicians have specifically requested that an onshore accredited laboratory analyze these blood specimens from expectant mothers in Ireland. An opportunity in the UAE also exists for such a service which P4ML will deliver.

P4ML are regarded as one of the most disruptive and innovate companies in the Pregnancy and Newborn Screening, healthcare sector. Our growth and success is clearly indicated in our milestones, and as such P4ML will become the market leader and disruptor in the next 3 years.



2. Management

Since the incorporation of P4ML, a Global leadership team of industry experts and clinicians in Precision Medicine has been identified and chosen for success. The people behind P4ML and the underlying companies have a deep inside knowledge about the industry. This is then combined with venture capital and fund management experience, together with long and successful experience of starting and operating companies. P4ML was founded by PJ Moloney and Diarmuid Cahalane.

❖ Leadership Team

Pat McGrath / *Chairman*

Pat McGrath is a chartered engineer and a chartered director. He holds a bachelor and master's degrees in engineering and a MBA. He helped scale PM group from a small founder's team into an international player with over 2,500 employees in 20 offices, operating in 30 countries with revenues of US$350 million. Today Pat is a non-executive Chairman of, and an investor in, a number of small to medium enterprises in the tech, IOT and medical sectors- including P4ML.

P.J. Moloney / *Co-Founder*

His experience is in the chemical analysis and life sciences industries and has seen PJ excel in both multinationals and his own respective companies. PJ has excelled as a globally recognized subject matter expert in the areas of drug discovery and development. Notable achievements throughout his career both nationally and internationally include been awarded the following. (Life Sciences - Top 50 CEO's; Young Leader of the Year - Irish Laboratory Awards, Outstanding Small Business in Ireland). PJ has won public and private tenders for fields of science in drugs of abuse testing; food adulteration; biopharmaceutical characterization and immunosuppressant.

Diarmuid Cahalane / *Co-Founder*

Diarmuid Cahalane is a serial entrepreneur and mentor who has been working as an advisor to the technology and life sciences sectors for over 20 years. He is recognized for his strengths in risk analysis, remediation, cost reduction and compliance. In 1997, he established his own regulatory consulting company and went on to work with many of the world's leading life science companies. Diarmuid has worked on validation of software with many multinational pharmaceutical companies and has also successfully provided accreditation services to hospitals enabling them to get their pathology laboratories accredited to 1SO;15189 quality standards. In 2010, Diarmuid was instrumental in establishing Metabolomic Diagnostics which has raised €8 Million to date. The company also have been successful in Horizon 20/20 European Funding.

❖ Scientific Advisory Board

Prof Louise Kenny MBChB (Hons) PhD MRCOG

Professor Kenny is Executive pro-vice chancellor of the faculty of Health and Life Sciences at the university of Liverpool; professor of maternal and fetal health and a consultant obstetrician at the Liverpool Women's Hospital. She was formerly a founding director of the science foundation Ireland (SFI) funded Irish Centre for Fetal and Neonatal Translational research (INFANT). She is a key opinion leader in the field of perinatal research, and has a longstanding clinical and research interest in hypertensive disorders of pregnancy. She is currently executive secretary of the International Society for the study of Hypertension in Pregnancy, (ISSHP).

Prof. Stephen Kingsmore, B.Sc., M.B., Ch.B., B.A.O.

Dr. Stephen Kingsmore is the president and CEO of the Rady Paediatric Genomics Systems Medicine Institute. He completed his medical studies at Queens University in Belfast, Northern Ireland and at Duke University. He is the official title holder of the ***Guinness World Records®*** designation for fastest genetic diagnosis, which he accomplished by successfully diagnosing critically ill newborns in just 26 hours.

Dr. John Ryals

Dr. Ryals served as president and CEO at Metabolon from 2002 until 2018. Prior to founding Metabolon, he was CEO, president and founder of Paradigm Genetics. Dr. Ryals has 30 years of experience in the biotechnology industry, including senior research positions at Novartis and Ciba-Geigy. He currently serves on the advisory board of the college of agriculture and life sciences at North Carolina State university

Katherine Atkinson

Katherine is chief commercial officer at Epic Sciences with more than two decades of life science experience. During her five-year tenure at Illumina, Katherine oversaw numerous divisions, including molecular biology/PCR products, inside sales and most recently global channel partners. In her most recent position as commercial director of global channel partners, Katherine developed a high-performing channel partners program from the ground up, encompassing more than 70 partners in more than 130 countries worldwide.

3. The Market

The global non-invasive prenatal screening market is a multi-billion-dollar market, it is competitive, dynamic and growing fast. P4ML key geographical markets are currently Europe and the Middle East, with market opportunities for the future in new regions. In addition, P4ML is looking to expand our product and services portfolio further into reproductive health and into new high value fields such as oncology.

❖ Key Market Drivers

Regional Screening Policies

Each country, and often even regions with a country, have their own screening policies and many are starting to include non-invasive prenatal testing as part of national screening guidelines. These regional variations will have different reimbursement amounts associated with the test and also specified cut-off, of which pregnant women are entitled to the test based on their prior risk

Demographics

There is a global shift in developed countries in the average age of when a woman first has a child, with a much higher proportion of women waiting until into their **30's**. As expectant mothers get older there is an increasing chance that their pregnancies could be affected with genetic abnormalities.

Access And Availability

More and more regions are offering women NIPT as part of the maternal care pathway due to it now being included in the national screening policy. This drives the demand for hospitals and laboratories to have access to an NIPT service provider to be able to implement this testing locally.

Patient Power and Increased Awareness

Increasing numbers of women and their families are becoming aware of the benefits of NIPT through increased media coverage fuelled by debate and changes in public screening policy. It is a frequently discussed topic in the online pregnancy community, with many women turning to these forums and networks for pregnancy information and support.

P4ML works very closely with laboratory managers, clinicians and obstetricians in all of Global leading maternity hospitals. This unrivalled access to clinicians, and as a result, to their patients, has positioned us perfectly to launch our own NIPT testing services laboratories in Ireland and the UAE Region.

❖ The Commercial Value

Over 50,000 blood samples annually go outside Ireland and the Gulf Region for the Non-Invasive Pre-Natal Test (NIPT) at a cost of between €25m and €37.5m.

- Ireland serviceable addressable market - €7m to €10M
- Gulf serviceable addressable market - AED 55M to 80M

In Ireland alone, this is 22,500 out of a total of 65,000 pregnancies representing 34% of pregnant women being tested.

The NIPT is predicted to almost completely replace traditional invasive testing within a very short period of time. If the number of women in Ireland having the NIPT doubles as is forecast, the value of the NIPT market in Ireland will rapidly grow to between €18m and €20m.

❖ Market Segmentation

High Risk Pregnancies

Women that have a high-risk result from the first trimester combined test are offered an NIPT rather than going for an invasive test such as an amniocentesis. High risk in the Ireland is defined at **1:150**, but each country has a different high-risk cut-off.

Contingent Screening/Intermediate Risk

Some institutions implement a contingent screening model which means that women would initially have the first trimester combined test and then those women with high/ intermediate risk, at their defined cut-off, will then be offered an NIPT.

Private/Average Risk

Women of average risk who are willing to pay privately for an NIPT for peace of mind.

All Women

Over time there is the potential that first trimester screening could be replaced directly with an ultrasound and NIPT for all women, this could be reimbursed or paid for by the country's public health policy.

4 . Health Tourism

Riding the Wellness Wave with its innovative facilities, and strategic location, the UAE has become a leading medical tourism hub . With the third best air transport infrastructure in the world according to the World Economic Forum (WEF) and being just eight hours away from two-thirds of the world's population, Dubai is an ideal destination for medical tourism.

The Healthcare Vision

According to recent reports, the UAE accounts for **26%** per cent of the total healthcare spend by GCC governments, and the per capita healthcare spending in the UAE was the second highest in the GCC. With a target of half a million international medical tourists by 2020, the UAE is aiming high. In fact, Abu Dhabi is well on its way to establish a medical tourism network in order to attract and serve patients from Russia, China, India, and beyond. The capital has even established the '***Shafafiya E- Portal***' where the Abu Dhabi Department of Health has urged all providers to document medical tourist's records.

At present, the UAE leads the Middle Eastern wellness tourism market, with an average of ***1.7 million*** wellness trips generating ***US$2.7 billion*** annually. The country accounts for 14 per cent of the MENA spa market. Plus, wellness trips in the UAE have grown by 17.9 per cent over the past five years, while overall tourism has grown 8.1 per cent.

Currently, there are around **4,740** doctors in the UAE, who speak more than 40 languages, and there are top-class health centres that offer treatment for a wide range of medical conditions. Each year the expected growth in medical tourists is ***13%*** per cent, which means by 2021 the UAE will be seeing ***1.3 million*** medical tourists. This growth bodes well for the expansion of the healthcare sector.

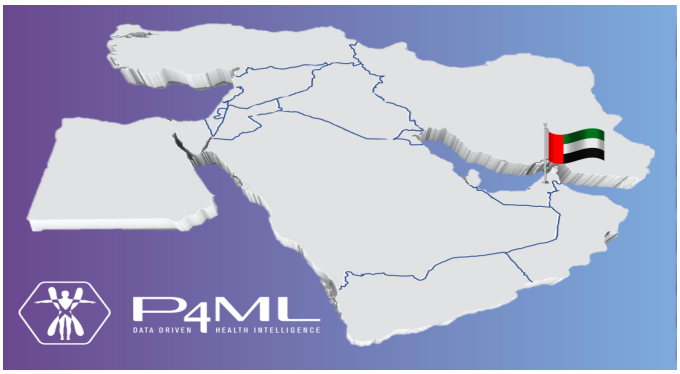
The UAE has positioned itself as a force to reckon with in the medical tourism sector by placing themselves within the top 20 destinations of choice. If the government continues to maintain this momentum and provide the right support and regulatory frameworks, it will definitely achieve its goal of making it to the top five by 2020.

The UAE also recently signed a strategic partnership with a massive country such as China. Chinese tourists who have increased by 120 per cent in the last five years will likely start looking at the UAE as an attractive medical tourism destination if providers and investors alike adjust their products and services to serve them. Thailand alone saw nine million Chinese medical tourists in 2016, and there is no reason why they would not divert their attention to the UAE.

Destination Dubai

By 2020, Dubai is expected to have around 34 pharmaceutical and medical equipment plants, and the value of the private pharmaceutical industry in the UAE, currently estimated to be ***Dh5.9 billion***, is expected to reach Dh25 billion in 2025.

As per the medical tourism index, Dubai continues to strengthen its position as a medical tourism destination, ranking globally in 16th position and first in the MENA region. The creation of initiatives, such as ***the Dubai Health Experience (DXH)*** – the first medical tourism portal in the world that allows tourists to book their entire 'medical holiday' online: from procedure to flights and hotel, has given this movement a further boost.
The Dubai Health Authority (DHA) reports that orthopaedics, dermatology and ophthalmology are the main types of medical treatments attracting tourists to Dubai, with most coming from Asian (37 per cent) or other Arab and GCC (31 per cent) countries.
With the third best air transport infrastructure in the world according to the World Economic Forum (WEF) and being just eight hours away from two-thirds of the world's population, Dubai is an ideal destination for medical tourism.



The increase in demand for healthcare services over the past 10 years has been spurred on by increasing population growth (6 per cent) and the government creating investor friendly environments, such as establishing a healthcare free zone and introducing mandatory insurance.
Specialists are already witnessing the changes in patient demand such as the need for treatment of chronic diseases, diabetes, hypertension and cardiovascular diseases. This increases the need for rehabilitation services where patients can recuperate.
In order to facilitate this, healthcare tourists in Dubai can choose from over 30,000 healthcare professionals spread among 3,000 facilities. By 2020, these numbers are expected to grow to 40,000 professionals and 4,000 facilities.

5 . Business Model

***Our Clinical Laboratory Services*: P4ML plan to have two clinical laboratories running a high throughput service in Cork, Ireland and Dubai, UAE. Both service laboratories will offer an NIPT provision where clinicians will send blood samples for analysis with the EOLAS® test and EOLAS Plus™ prenatal screen. New laboratory customers will often use the service laboratory during the installation and training phase where they need to begin their NIPT offering as soon as possible.**

The Healthcare Vision

At the moment, all commercial clinical genetic screening tests for people in Ireland and the Gulf are carried on outside the country, usually in the USA or UK. There is no accredited clinical reference diagnostic genetic screening laboratory in Ireland or the Gulf.

Sending patients personal data and DNA outside the EU (including the UK, post Brexit) is contrary to data protection legislation. If a laboratory existed in Ireland it would mean testing could be carried out in Ireland, within the EU.

P4ML proposes to establish the first accredited, clinical reference, diagnostic, genetic screening laboratory in Ireland. The laboratory will be accredited to ISO: 15189, thereby meeting the stringent requirements of the Irish National Accreditation Board (INAB) and the standards of our Irish and International customers.

A Test Send Out (TSO) model will be deployed from the Gulf Region to our Irish laboratory, wherein a 6-month period, we will insource our business model to Latifa Hospital and Al Habib Group, using a Reagent Rental and staffing service in these facilities.

The Demand for Genetic Screening

In 2007, researchers in the US discovered that it was possible to separate fetal DNA from maternal DNA circulating in the mother's bloodstream. This led to a rapid adoption of non-invasive prenatal testing as a safe, accurate, reliable way to screen for baby's health issues. Today, every maternity hospital in Ireland and the Gulf Region, and most obstetricians and gynaecologists already send thousands of blood samples from pregnant women outside the country for genetic screening. Tests can take up to 14 working days to turn around when going outside the country. This could be reduced to 2-4 working days by conducting the tests within the country. This market will continue to grow as more and more screening tests are developed now that it is possible to separate fetal from maternal DNA circulating in the mother's bloodstream.

There is currently a clear stated demand for clinical genetic screening tests to be provided in Ireland. This demand is predicted to grow substantially over the next few years.

The Commercial Value

Broad Portfolio Of NIPT Solutions

Our NIPT solutions are bespoke and customised for each customer depending on their workflow, sample volumes, language and culture, regional screening guidelines and regulatory environment. We have a broader NIPT offering that meets the diverse needs of different laboratories, hospitals and clinicians internationally.

Clinical Education

P4ML are committed to providing educational training programmes for our healthcare and laboratory professionals to ensure they are fully trained and supported to deliver the safest prenatal screening to pregnant mothers. We run local, regional and international educational seminars, provide cascade training internally and both digital and print training resources for users of our tests.

Regulatory Expertise

P4ML have a wealth of regulatory expertise in-house and part of our strategy is to develop regulated, approved *in vitro diagnostic* products. The EOLAS® test was the first CE-marked IVD for prenatal screening and was assessed by an external notified body, unlike some NIPT from our competitors that self-certify the CE mark.

World Class Application Support

Our international technical support team is well regarded by our laboratory customer base for going above and beyond. They are known to provide excellent and detailed training programmes, pre-and post-installation support, hand-holding and ongoing support once the NIPT service is up and running.

P4ML is currently focused on delivering high quality prenatal screening products and services to support a growing international customer base of laboratories and healthcare professionals.

6. Milestones

P4ML has indicated our technology milestones for 2019 in schematic roadmap. The commercial impact of implementing our accredited laboratory, allows for following activities.

Our 2018 progress is clearly indicated to reflect the company's activities, funded by shareholders. IP development in 2019 is critical.

Company progress

Established in October 2017, P4ML has achieved the following commercial activities in a 15-month period

Highlights:

- ***October 2017*** - Company Registration Office, company filed with Revenue
- *November 2017* - Participated at MEDICA, Germany. MEDICA is the world's largest event for the medical sector, attendees in excess of 120,000 it attracted more than 5,100 exhibitors from 70 countries in 17 halls.
- ***January 2018*** - Participated at ArabHealth, Dubai. ArabHealth is the largest event for the medical sector in the Middle East, attendees in excess of 84,500 it attracted more than 4,150 exhibitors from 160 countries.
- ***May 2018*** – Enterprise Ireland (HPSU). A High Potential Start Up can be defined as a company that is internationally focused and has the potential to employ at least 10 persons within 3 years of starting and to generate revenues of at least €1million. The Innovative HPSU Fund allows Enterprise Ireland to offer equity investment to HPSU clients, on a co-funded basis.
- ***October 2018*** - P4ML became the first Irish company to be accepted into the prestigious Dubai Future Accelerators. P4ML will now use this opportunity to deploy our technology into a UAE stakeholder/hospital group since a MOU with the Dubai Health Authority was signed.

P4ML – Research & Development Milestones

It is critical that's the following milestones are achieved in 2019 to meet Investor expectations.

Milestone:

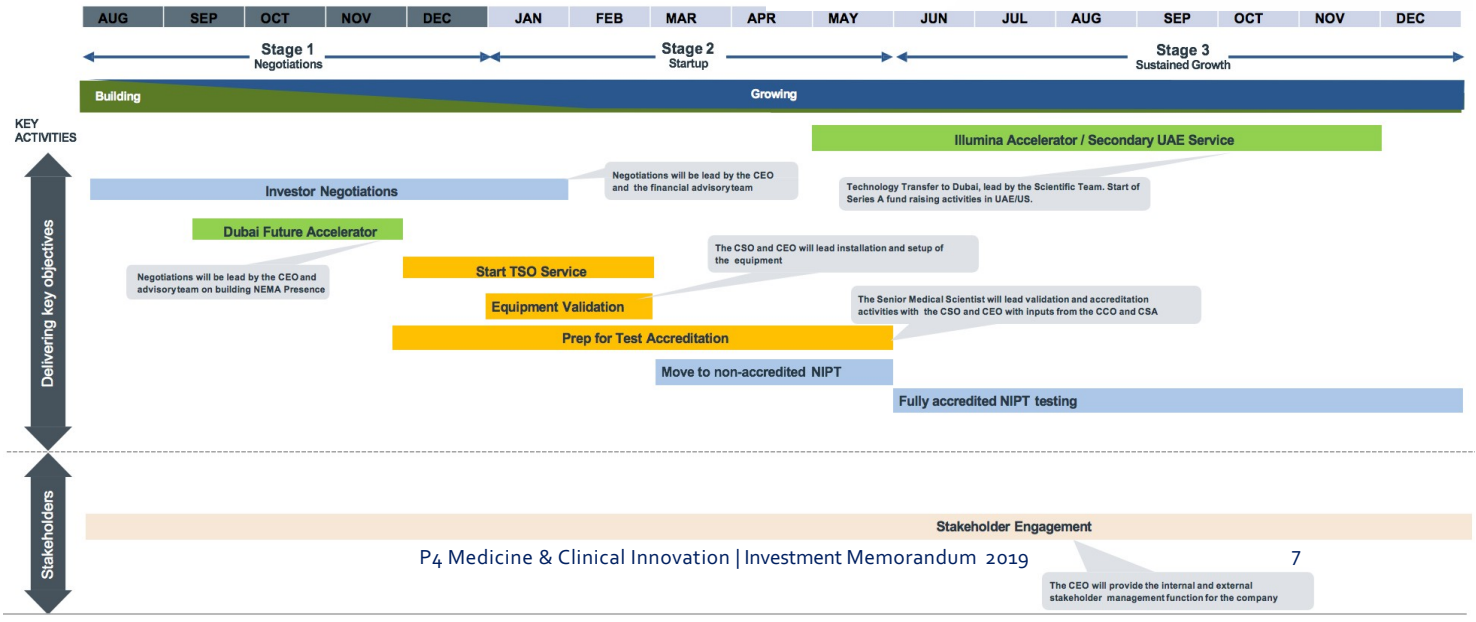
- ***January 2019*** – Commencement of Test Send Out and validation of test equivalencies.
- ***Jan/Apr 2019*** - Equipment installation and validation from Illumina Inc., California. This is an intensive 12-week program to start analysing samples in Ireland.
- ***Jan/May 2019*** – Accreditation process has commenced in P4ML, to achieve ISO15189 full deployment needs to commence in late January.
- ***June 2019*** – Secondary laboratory implementation commences in Dubai with Latifa Hospital.
- ***Sept 2019*** – Commence our Series A funding round

P4ML – Intellectual Property

- Patent application '***A DNA Methylation test for prostate cancer***'. Published as WO 2016 / 102674. In National Regional Phase in US & Europe.
- P4ML is commercialising IP from Prof. Antoinette Perry in University College Dublin.
- Awarded a Commercialisation Fund from Enterprise Ireland to bring product to market.

Grant Funding (~ €550K)

PROSTATE CANCER FOUNDATION
Accelerating the world's most promising research
irish cancer society
ENTERPRISE IRELAND
SFI Science Foundation Ireland
MOVEMBER FOUNDATION



7. P4ML – Our NIPT Technology

P4ML has a very disruptive offering to the prenatal market which will both disrupt and displace current NIPT competitors and test send out to laboratories. The EOLAS Test is the only recognised (CE-IVD) test offered in Northern Europe and many other countries in the Europe, Middle East and Africa (EMEA) Market.
Not only will it reduce result times from an average 14 days in Ireland to 3 days, but it will also ensure Clinicians have a result they can stand over.

❖ Unique Selling Point of our Technology:

- Healthcare partnerships with Illumina, Rady Children's Institute, UCC, INFANT, The Rotunda; Dubai Health Authority, Latifa Hospital, Area2071
- The only Accredited Genetic Screening Laboratory in Ireland with planned facility in Gulf Region planned for Q4-FY'19
- Fully compliant with all current and future EU Regulatory Requirements
- FDA Approved – (CE-IVD Marked)
- World class logistics due to location adjacent to DHL. Rapid test turnaround time with outsourced delivery and collection worldwide.

❖ Tomorrow's healthcare in our NIPT Test

P4ML's launch product is the 'Eolas Non-Invasive Prenatal Test (NIPT), powered by Illumina Inc.'s technology, the world leader in genetic sequencing. The name EOLAS was actually chosen by a group of Irish consultant obstetricians, which means translates to Information.

The **EOLAS** NIPT test was developed in association with Prof. Louise Kenny. Prof. Kenny is one of the founding directors of the INFANT CENTRE in UCC/CUMH- a globally recognised research centre in perinatal healthcare, funded by Science Foundation Ireland.

Once P4ML receive a blood specimen in our Cork facility from a hospital site, the test turnaround time will be just 26 hours using this advanced technology. Due to our strategic location, adjacent to the DHL Logistics Hub we anticipate a 2-4-day turnaround time for all specimens originating in Ireland & Europe. In addition, patient data is protected within the country meeting all current and future data protection requirements, including GDPR. Our team has been working on this project for over 3 years establishing relationships with patient advocacy groups, instrument manufacturers, clinicians and other key opinion leaders.

The '**EOLAS**' test is (CE-IVD) and FDA Approved, which removes barriers to entry in the Healthcare market. This is a significant advantage to scaling this this service Globally. P4ML has also been endorsed and supported by Global clinicians.

❖ The Technology behind the Test

Illumina Inc. is a $2.7 billion revenue company based in California, manufacturing next generation sequencing NGS technologies that are transforming biological research. Illumina's genetic sequencing technologies are amongst the fastest and most accurate in the world.

Recently, Illumina won a very significant legal case for NIPT patent infringement against one of its principal competitors. This will undoubtedly increase demand for the Illumina NIPT.

Illumina Awarded $26.7M in NIPT Patent Suit Against Ariosa

❖ P4ML & Illumina

P4ML has a signed agreement with Illumina to promote it's genetic testing capabilities in 46 countries across EMEA. We propose commencing with what is known as a test send out (TSO) sending test samples to Illumina's laboratories in the USA until we set up our own laboratory in Cork in Q3, 2019.

The first three target countries are Ireland, UK and United Arab Emirates. We have permission to use the term ***'Powered by Illumina'***, including their logo, on our test kits. This is a clear indication of the strength of the relationship between P4ML and Illumina.

8. Research & Development

Our EOLAS Prenatal PLUS Test is not currently offered in EMEAI. We are the only company that can offer these additional screening analyses for genetic disorders in a 2 to 4-day turnaround timeframe, with a genetic counsellor app to help inform midwifes and physicians how best to treat the disorder.

❖ Eolas Prenatal Test

The **EOLAS** Prenatal Test is a non-invasive screening option for chromosomes 13, 18, and 21, and fetal sex chromosome aneuploidies in both singleton and twin pregnancies.

Highlights:

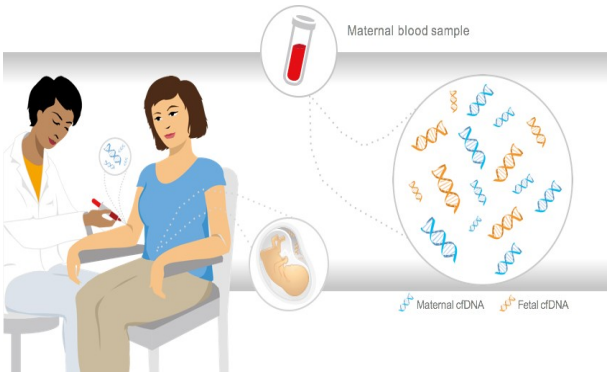
- Better than serum screen (fewer false positives)
- Fast turnaround time (2-4 days)
- Low failure rate and high accuracy

Testing Indications:

- Advanced maternal age (> 35 years)
- Positive serum screen
- Abnormal ultrasound
- History suggestive of increased risk for the specified chromosome aneuploidies
- Low risk/maternal anxiety

Screens for:

- Trisomy 18 (Edwards syndrome)
- Trisomy 13 (Patau syndrome)
- Trisomy 21 (Down syndrome)
- Fetal sex aneuploidies



❖ Eolas Prenatal PLUS Test

The **EOLAS Plus** Prenatal Test contains everything in the **EOLAS** Prenatal Test but also includes additional panels. It is a non-invasive screening option for standard chromosome aneuploidies, certain microdeletions, and all autosomes. Expanded panels (microdeletions or all autosomes) are optional add-ons for singleton pregnancies.

Highlights:

- EOLAS Plus screens for more chromosome conditions that EOLAS

Testing Indications:

- Women who decline an invasive procedure in the presence of an abnormal ultrasound.

Available Optional Add-On Offerings Include:

Sex chromosome aneuploidies

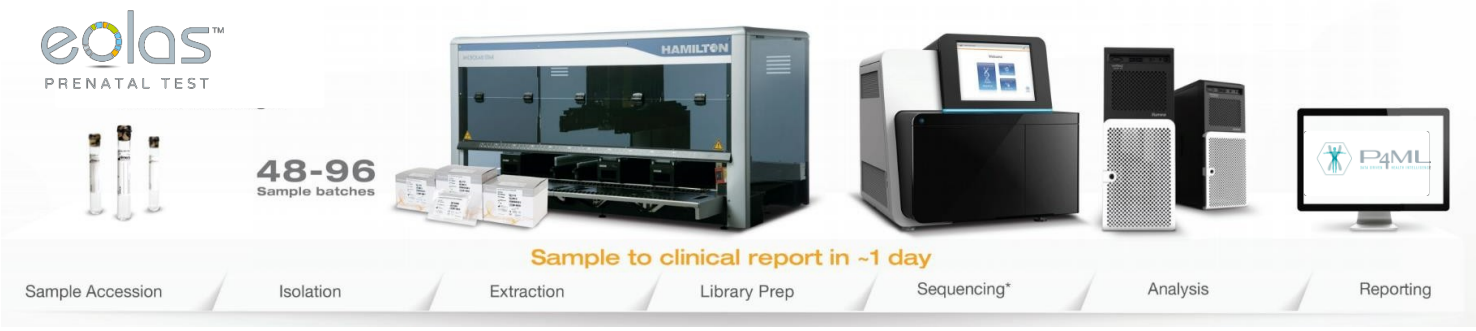
- Monosomy X (MX; Turner syndrome)
- XXX (Triple X)
- XXY (Klinefelter syndrome)
- XYY (Jacobs syndrome)

Expanded autosomal trisomies

- All chromosomes

Microdeletion syndromes

- 1p36 deletion
- 4p- (Wolf-Hirschhorn syndrome)
- 5p- (cri-du-chat syndrome)
- 15q11 (Prader-Willi syndrome/Angelman syndrome)
- 22q11 deletion (DiGeorge)



9. Dubai Future Accelerators

P4ML was the first Irish company to be accepted into the prestigious Dubai Future Accelerators. P4ML has used this opportunity to deploy our technology into a UAE stakeholder/hospital group and establish a MOU with the UAE Health Authority.

❖ Memorandum Of Understanding with

The Challenge:

Harness Dubai's remarkable genetic diversity to enhance diagnostic speed and effectiveness by a factor of 10 (using genomics, analytics, telepresence and personalized medicine).

P4ML have worked closely with Dubai Future Accelerators and the Dubai Health Authority, over a 10-week period and have entered into a Memorandum of Understanding to deploy our NIPT and MultiOMIC technologies within the Dubai Health Authority hospital groups.

Companies selected after evaluating presentations from over 600 companies from over 70 countries around the world. Cohort 5 marks the 2-year anniversary of DFA, which provides an innovative platform that brings together distinguished start-ups with leading government organizations in Dubai to find innovative solutions for their current and future challenges.

Secretary General of the Executive Council of Dubai, Member of the Executive Committee of Dubai Future Foundation, His Excellency Abdulla Mohammed Al Basti, confirmed that the global interaction with the Dubai Future Accelerators Program since its launch so far has made it one of the fastest accelerator program in the world.

❖ Business in the Middle East

Non-Invasive Prenatal Testing – Phased Deployment

Dubai Health Authority - The Dubai Health Authority (DHA) is a government organization overseeing the health system of Dubai, United Arab Emirates. The DHA provides healthcare services through hospitals and other facilities that fall under its direct jurisdiction. These include Latifa Hospital, Dubai Hospital, Rashid Hospital and Hatta Hospital, in addition to other specialty centers and DHA primary health centers throughout Dubai.

Other aspects of the DHA's services are:

- Creating and ensuring the execution of policies and strategies for healthcare in Dubai's public and private healthcare sectors.
- Enabling partnerships between healthcare providers.
- Licensing and regulating medical professionals and facilities.

Daman is a public joint-stock company that is 80% owned by the Abu Dhabi Government with the remaining 20% owned by the Germany-based Munich Re. With the highest market share in Abu Dhabi, Daman covers more than 2,600,000 members. As health insurance is mandatory for all residents in the Emirate of Abu Dhabi, HAAD - Health Authority of Abu Dhabi offers a basic coverage plan also known as Abu Dhabi Basic Plan which is managed by Daman. Along with managing this plan, and also Enhanced and Thiqa plance are there for UAE nationals only

P4ML is currently collaborating with

هيئة الصحة بدبي
DUBAI HEALTH AUTHORITY

ضمان
Daman

د. سليمان الحبيب
DR SULAIMAN AL HABIB

مؤسسة دبي للمستقبل
DUBAI FUTURE FOUNDATION

10X

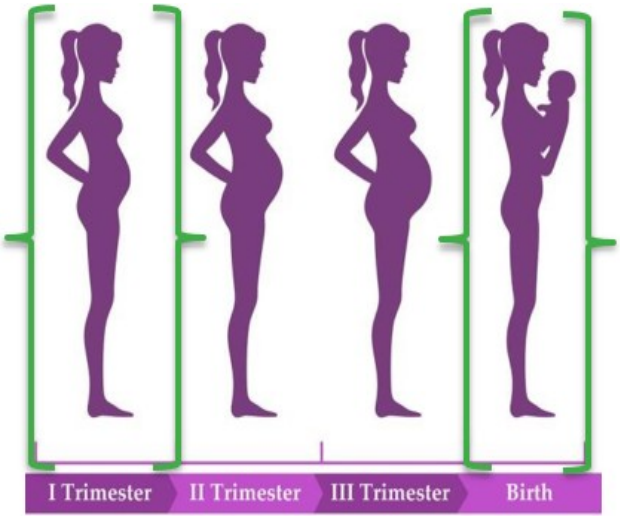
2071

10 . P 4 M L– Pregnancy/Birth Roadmap

Precision medicine in 'Newborns' requires precision diagnostics early on a change of the current care paradigm.

P4ML will be adding additional capabilities to our post pregnancy offering in 2019. P4ML will create a disruptive cloud- based diagnostics and disease monitoring ecosystem enabling precision diagnostics and treatment to transform care of patients with rare disorders, diseases with a major impact on quality of life and socioeconomic burden. Enabling precision medicine to transform care of Infants.

❖ The Pregnancy Journey



P4ML – Trimester 1

As the only (**CE-IVD**) solution provider of the ***EOLAS Prenatal Plus*** Test, we will identify a cohort of the UAE population most at risk. By screening in Trimester 1 we will ensure clinicians have the most accurate data relating to their patients as early as possible in the pregnancy, well in advance of the manifestation of symptoms.

P4ML will ***BETA Test*** our MultiOMIC offering in tandem with our NIPT test. This will incorporate only one blood draw at week 10-12 on patients aged between 30 and 40 years of age.

In addition to our expanded microdeletions panel, we will also be able to predict if Preeclampsia will occur later in pregnancy. This then will enable clinicians to prescribe Aspirin to the pregnant lady in trimester 1.

Currently the main treatment for preeclampsia is emergency C-Section at approx. week 28/32. This results in the Infant being placed in a Neonatal Intensive Care Unit (NICU), at great additional expense and risk. In Ireland, the current daily cost of NICU is in excess of ***€1,250*** per night.

❖ Eolas Prenatal PLUS with MultiOMICS

Birth

P4ML will be adding additional capabilities to our post pregnancy offering in 2019. We will licence technology transfer and expertise into the EMEAI market from both Metabolon and Rady Children's Institute for Genomic Health.

This will allow the clinician to take a blood specimen from the baby at Birth and send specimen to P4ML to run the following assays which will be a niche offering to P4ML.

rWGS – Rapid Whole Genome Sequencing: Rady's Hospital have developed a genetic test that has broken the **Guinness Book of World Record** for exact prognosis of genetic mutations at birth within 19 hours.

Metabolon – In Born errors of Metabolism. Inherited metabolic disorders, also known as inborn errors of metabolism, are rare genetic disorders that often disrupt bodily processes such as the conversion of nutrients into energy and structural molecules, the breakdown and clearance of waste, or the synthesis and function of signals. The disorders are usually caused by defect proteins (enzymes) that help facilitate these processes.

Generally, IMDs represent a group of about 500 rare genetic disorders with an overall estimated incidence of one out of 2,500 people.

Dr. Kingsmore receives the GUINNESS WORLD RECORDS™ certificate for the fastest genetic diagnosis.

11. Laboratory

Considerable Intellectual Property od significant value will be achieved by P4ML, utilizing their 'DDHI™' Data Driven Health Intelligence workflow. With access to HER's from clinicians and integration to hospital analyzers, P4ML will develop a World First – Pregnancy/Newborn Screening Global Centre of Excellence testing laboratory.

Next Generation Sequencing

- Access to consented DNA samples linked to accurate clinical data such as longitudinal electronic health records (EHR) in a well-controlled way.
- Genomics technology to 'read' the DNA samples (for example, genome or exome sequencing and array technology) and convert it to digital format.
- Analytics capabilities (such as statistical genetics and bioinformatics) to analyze the genomic and clinical data to identify which genomic variants are relevant to a disease and derive additional insights

MultiOMICS

MultiOmics (i.e. metabolomics, proteomics, lipidomics, etc.) will follow in our ***Series A*** Round. These MultiOmics look at the structural data of various drug molecules and their interactions with DNA mutations that will be identified in NGS screening referred to above.
The study of multi-omics is critical to understanding the longitudinal progression of disease and, in turn, how best to develop new therapies for treatment. The interconnectedness of these systems and biological products is nuanced and complex. With these technological advances and better understanding of disease biology, we have now seen several beachheads emerge for multi-omics in Precision Medicine.

Advanced mass spectrometry techniques have enabled metabolomics to be used to screen newborns for metabolic diseases from dried blood-spot specimens. Metabolon has developed a technique to test for 70 inherited metabolic diseases from a small plasma sample, and also provides a service for researchers and clinicians interested in performing metabolomics with a comprehensive set of bioinformatics tools to enable analysis and understanding.

Artificial Intelligence / Deep Learning

At the center is a data platform (***DDHI*** – Data Driven Health Intelligence) with integrated computational and data storage capabilities that are connected to the external world through a secure, HIPAA-compliant network. The platform aggregates data from multiple sources and uses advanced machine learning algorithms to inform diagnosis, prognosis, therapy selection, and drug development. Follow-up diagnostics use advanced, non-invasive technology and 'omics' to comprehensively assess multiple factors of individuals' health status.

In addition, these data are made available to researchers and drug developers through data agreements that enable them to dramatically improve drug development by enabling rapid discovery of molecules and targets, new indications for existing drugs, new combinations, and responsive patient subpopulations.

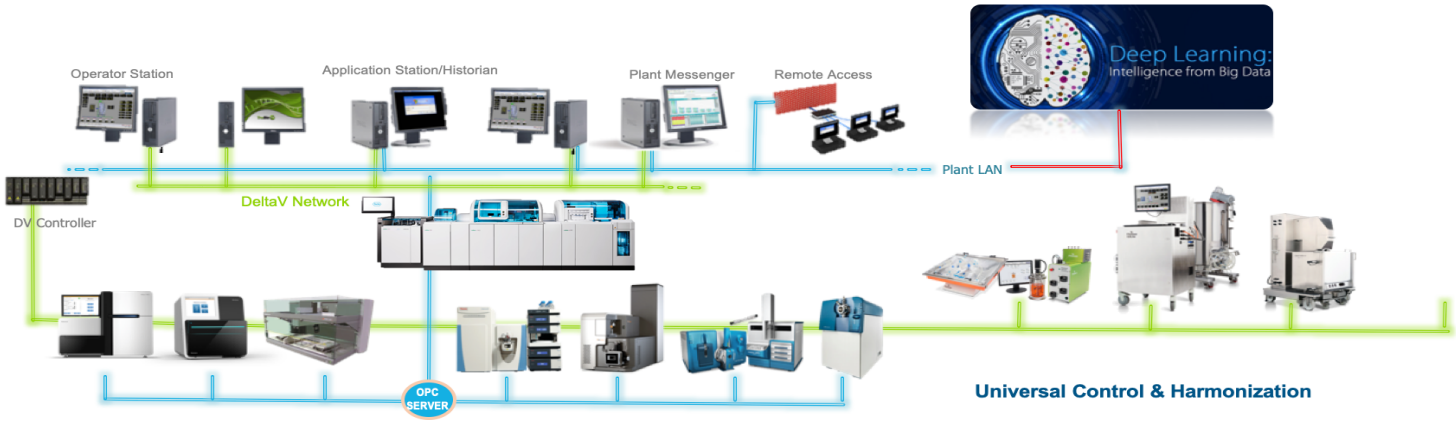
PilotCMO – Orphan Drugs

The combined third phase will be to install a pilot-scale Contract Manufacturing Operation (CMO) in addition to MultiOmics for orphan drug development in 2020.

In collaboration with a number of multinational Biopharma companies who we know wish to outsource this process. At this stage, P4ML will have a holistic capability for orphan drug development, as we can then screen a cohort of the population for genetic dispositions/mutations and through MultiOmics understand which of these orphan drugs that are being developed in our Pilot CMO offer the vest efficiency rates which we will understand through MultiOmics.

Cystic Fibrosis in particular is are of interest Globally.

Over the next five years, just under 90 % of both payers and provider organizations will adopt "big data analytics capabilities" .



12 . Key Financials

Financial Projections

The following financial model is based on two of the tests outlined above-***EOLAS*** and ***EOLAS Plus*** (NIPT).
Based on conservation market share penetration rates, we have illustrated below the projected results for the years ended 2019, 2020, 2021, 2022 and 2023.

Key Financials are broken into the following immediate markets for P4ML, with additional market penetration in 2021.

- 2019 - 2023: Ireland, UK, UAE, KSA and Health Tourism
- 2021 – 2023: Ireland, UK, UAE, KSA and Health Tourism with the addition of Benelux, DACH and Nordic Markets.

Projected Profit & Loss Accounts for the years ended 2019 – 2023

	2019 €	2020 €	2021 €	2022 €	2023 €
Total Revenue	4,724,404	38,172,933	54,420,885	70,046,214	87,222,480
Total Direct Costs	2,489,762	17,893,151	24,299,005	30,493,075	37,221,078
Gross Profit	**2,234,642**	**20,279,782**	**30,121,881**	**39,553,138**	**50,001,401**
Total Indirect Costs	3,424,364	6,510,509	7,552,544	8,665,145	9,319,784
Profit/(Loss) Before Taxation	**-1,189,723**	**13,769,273**	**22,569,336**	**30,887,994**	**40,681,617**
Corporation Tax Charge	-	1,146,835	2,226,874	3,060,817	4,079,542
Profit/(Loss) After Taxation	**-1,189,723**	**12,622,437**	**20,342,462**	**27,827,177**	**36,602,075**
Cumulative Profits	*-1,189,723*	*11,432,715*	*31,775,177*	*59,602,354*	*96,204,430*
Gross Profit %	*47%*	*53%*	*55%*	*56%*	*57%*
Net Profit %	*-25%*	*36%*	*41%*	*44%*	*47%*
DC as % of Revenue	*53%*	*47%*	*45%*	*44%*	*43%*
IC as % of Revenue	*72%*	*17%*	*14%*	*12%*	*11%*

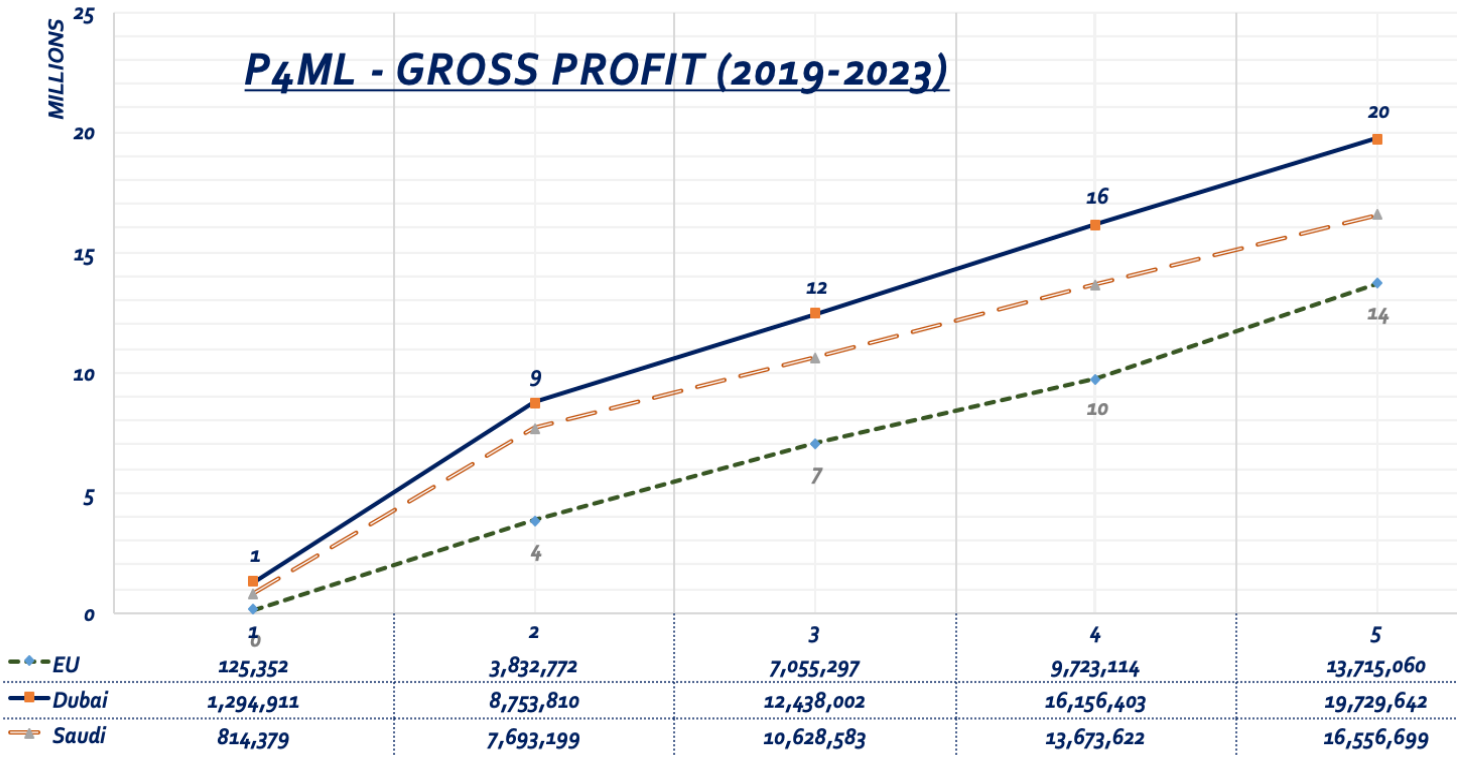
Projected Balance Sheet as at the years ended 2019 – 2023

	2019 €	2020 €	2021 €	2022 €	2023 €
Current Assets	1,994,749	16,076,529	37,136,647	66,438,852	104,742,227
Fixed Assets	3,140,223	2,665,355	3,004,938	2,399,128	1,723,743
Current Liabilities	330,193	1,314,668	2,371,906	3,241,125	4,267,039
Long Term Liabilities	6,250,000	6,250,000	6,250,000	6,250,000	6,250,000
Net Assets	**-1,445,222**	**11,177,216**	**31,519,678**	**59,346,855**	**95,948,931**
Paid up Share Capital	2,001	2,001	2,001	2,001	2,001
Profit and Loss Account	-1,447,223	11,175,215	31,517,677	59,344,854	95,946,930
Shareholder Equity	**-1,445,222**	**11,177,216**	**31,519,678**	**59,346,855**	**95,948,931**

Key Financials (Continued)

Projected Cash Flow Projections for the years ended 2019 - 2023

	2019 €	2020 €	2021 €	2022 €	2023 €
Cash In					
Sales Income	3,653,316	30,951,878	51,526,776	67,671,309	84,935,890
Fixed Asset Disposals	-	-	-	30,000	30,000
Funding	6,000,000	-	-	-	-
Grant Funding	250,000	-	-	-	-
Total Cash In	***9,903,316***	***30,951,878***	***51,526,776***	***67,701,309***	***84,965,890***
Cash Out					
Fixed Asset Additions	3,256,610	13,150	1,038,000	25,760	5,230
Leasehold Improvements	297,000	-	-	-	-
Finance Lease Repayments	16,428	27,380	32,856	98,332	57,380
Direct & Indirect Costs	5,476,618	27,461,778	32,581,970	39,736,771	47,224,364
Taxes	-	6,735	1,172,323	2,260,445	3,105,166
Total Cash Out	***9,046,656***	***27,509,042***	***34,825,149***	***42,121,307***	***50,392,140***
Cash Movement	***856,660***	***3,442,836***	***16,701,627***	***25,580,002***	***34,573,750***
Cumulative Balance	***856,660***	***4,299,496***	***21,001,123***	***46,581,125***	***81,154,874***



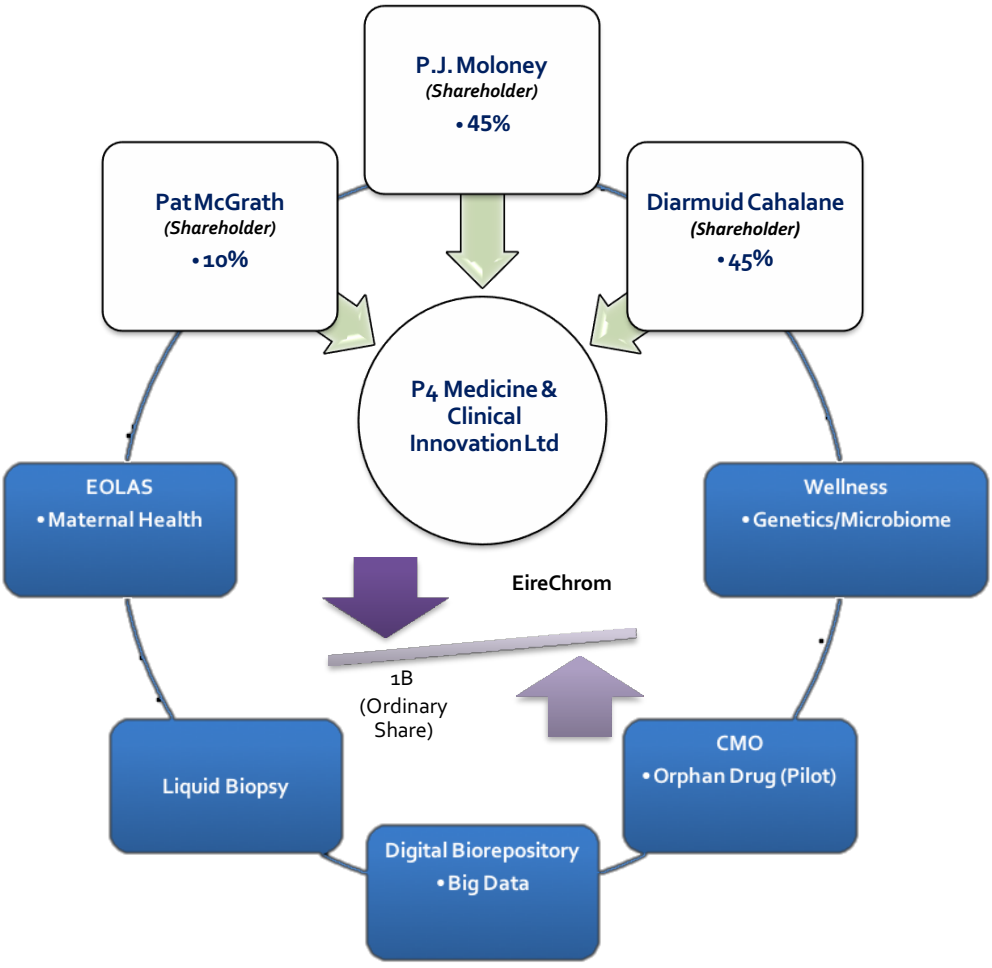
	1	2	3	4	5
EU	125,352	3,832,772	7,055,297	9,723,114	13,715,060
Dubai	1,294,911	8,753,810	12,438,002	16,156,403	19,729,642
Saudi	814,379	7,693,199	10,628,583	13,673,622	16,556,699

14. The Company

This summary shall be seen as an introduction to this Memorandum. Each decision to invest in securities issued under this Memorandum shall be based on an assessment of this Memorandum in its entirety. An investor who brings a case owing to the information in this Memorandum may be obliged to pay the costs of the translation of this Memorandum. A person may be made liable for information that is part of or that has been omitted from the summary only if the summary is misleading or erroneous in relation to the other parts of this Memorandum.

❖ Corporate Structure

The objective of this report is to provide a brief overview of P4 Medicine & Clinical Innovation Limited and to outline an investment opportunity which the directors of P4 Medicine & Clinical Innovation Limited are seeking financial backing on.



15. Key Project Advisors

This summary shall be seen as an introduction to this Memorandum. Each decision to invest in securities issued under this Memorandum shall be based on an assessment of this Memorandum in its entirety. An investor who brings a case owing to the information in this Memorandum may be obliged to pay the costs of the translation of this Memorandum. A person may be made liable for information that is part of or that has been omitted from the summary only if the summary is misleading or erroneous in relation to the other parts of this Memorandum.

❖ Government Advisors

A HPSU can be defined as a company that is internationally focused and has the potential to employ at least 10 persons within 3 years of starting and to generate revenues of at least €1million.

Our HPSU Team supports the development of a business with global ambition and a scalable business model that is capable of successfully competing internationally, has developed a differentiated and innovative product/service preferably through R&D, technology development, IP development.

❖ Legal Advisors

HOMS solicitors provide a wide range of legal services nationwide, delivering quality, knowledge, experience and value; collectively working in partnership with our clients, investing in our people while supporting the communities in which we operate. HOMS are one of the top twenty largest law firms in Ireland, having eight partners and over forty solicitors, with a total head count of over 140 staff.

❖ Financial Advisors

WENTWORTH is a leading accountancy practice specialising in audit, tax and advisory services. Our skilled team of expert consultants advise national and international owner-managed businesses, corporates, entrepreneurs and private clients. WENTWORTH have a diverse client base and are specialists in delivering practical, insightful financial solutions across a wide-range of sectors.

❖ Engineering Consultants

PM Group is an international project delivery company operating across Europe, the USA and Asia. We provide services in project management, process design, facility design and construction management for major multinational companies. We are world leaders in the Pharmaceutical, Food, Mission Critical, Medtech, Advanced Manufacturing and Energy sectors.

❖ The Commercial Value

ENTERPRISE IRELAND
where innovation means business

HOMS SOLICITORS

WENTWORTH
AUDIT TAX ADVISORY

PM GROUP

16. FAQ

There are a number of risks and uncertainties associated with theP4ML's activities. The Board believes the following are the principal risks, along with the mitigation actions being pursued.

- **1: I have heard of other laboratories that claim to be fully Accredited, yet P4ML Ltd are claiming that theirs will be the only Accredited Laboratory in Ireland.**

  P4ML Ltd will be the only Genetic/MultiOMIC accredited laboratory in Ireland. This will be achieved through ISO15189 Certification. The P4ML founders have vast experience in laboratory accreditation. Other laboratories are accredited, but not for genetic analysis. (Genetics is a relatively new method of DNA analysis, and is a key component of the Personalized Medicine revolution.)

- **2: There has been a lot of recent coverage regarding the failure of US based laboratories to analyse smear tests correctly (Cervical Check Screening). How will P4ML Ltd avoid this kind of issue?**

  Cervical Check is a screening program which uses cytologists (medical scientists) to subjectively analyse tissue biopsy which are a very thin layer of the smear/tissue on a glass slide which is in turn analysed via a visual process. The operator of the microscope has to manually adjust the glass slide containing the smear test to search for the cancerous cells. P4ML has a very strong analytical understanding of liquid biopsies, which through the use of automated genetic screening removes the human element and therefore the potential for human error. Utilizing a very sensitive instrument (DNA Sequencer) such cancerous mutations can be detected using the sequencers automated analytics/software.

- **3: Why has no other company or medical institute deployed this test in Ireland? This sounds too good to be true for an investor.**

  Currently genetic tests by Irish hospitals are being sent to the UK and US for analysis. With the departure of the UK from the EU, coupled with strict GDPR guidelines around control of personal data, it will become virtually impossible to continue this practice after March 2019, and maintain compliance. This is why clinicians have clearly asked P4ML to establish a laboratory on the island of Ireland which is accredited to ISO15189 for Genetic/MultiOMIC. (See video from Professor Louise Kenny at www.p4ml.com) As clearly stated above, accreditation would be a critical element to allow for the test results to be signed off.

4: What is the EXIT strategy for investor's?

P4ML has already been approached by a multinational contract research organization whom actively acquire companies with both the local knowledge; know-how and infrastructure for a clean entry to market.

Until such time that an accredited, fully operational laboratory is established by P4ML, no EXIT strategy can be deployed. We would foresee an EXIT in Q1 – FY'22

Our Advisory Board includes of Katherine Atkinson, who has assisted Edico Genome on a ¢100Million EXIT strategy to Illumina Inc. Katherine will be the lead role in P4ML to enter into dialogue with potential Global CRO's to acquire P4ML.

https://www.linkedin.com/in/katherinecoccaatkinson/

SAN DIEGO, Sept. 4, 2018 /PRNewswire/ -- EPIC Sciences (Epic), the maker of the world's first predictive test of drug response in prostate cancer, announced the expansion of its leadership team with the appointment of Katherine Atkinson as chief commercial officer. In this new role, Atkinson will be responsible for the development of EPIC's global commercial strategy by identifying new strategic business opportunities and deepening its existing strategic partnerships.

17. Disclaimer

Objective

The objective of this report is to provide a brief overview of P4 Medicine & Clinical Innovation Limited, also referred to by our trading name of P4ML throughout this document, and to outline an investment opportunity which the directors of P4 Medicine & Clinical Innovation Limited are seeking financial backing on.

Responsibility

WENTWORTH are business advisers to P4 Medicine & Clinical Innovation Limited. WENTWORTH have prepared this report on behalf of P4 Medicine & Clinical Innovation Limited. The proposals and representations contained in this report are entirely the responsibility of the directors of P4 Medicine & Clinical Innovation Limited.

While every effort has been made to ensure the accuracy of the information contained herein, the directors, P4 Medicine & Clinical Innovation Limited, WENTWORTH, together with any associated entities within the WENTWORTH organization, assume no liability for any inaccuracies that might be contained herein.

Scope

Any recipient of this report should perform his/her own verification to satisfy themselves as to the accuracy and completeness of the information contained herein. Recipients or readers of this report are not entitled to rely on any information contained herein for the purposes of entering into any contract or agreement with any of the parties referred to within this report.

Readers of this report should seek their own independent legal and financial advice before entering into any contract or agreement with any of the parties referred to within this report.

Time

The contents of this report reflect circumstances and financial conditions prevailing at the date of preparation of the report. Circumstances and conditions may change over a relatively short period of time and these changes may not be reflected in the report.

This document includes forward-looking statements. Forward looking statements are all statements other than those of historical fact and include, without limitation, statements relating to our financial position, business strategy, plans to increase revenue, other future events or prospects, plans to devote significant management time and capital resources to our business strategy, and other statements of expectations, beliefs, future plans and strategies, anticipated developments and other matters that are not historical facts concerning our business, operations, and financial performance and condition. The words “believes,” “seeks,” “anticipates,” “plans,” “expects,” “intends,” “estimates,” “will,” “may” and similar expressions are intended to identify forward-looking statements. These forward-looking statements involve known unknown risks, uncertainties and other factors, some of which are beyond our control, which may cause our actual results, performance and achievements, or industry results and market trends, to be materially different from any future results, performance, achievements or trends expressed or implied by our forward-looking statements. Additionally, new risks can emerge from time to time, and it is not possible for to predict all such risks, nor can we assess the impact of all such risks on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements. Given these risks and uncertainties, you should not place undue reliance on forward-looking statements as a prediction of actual results. All forward-looking statements included in this document are based on information available to us on the date of this document. We undertake no obligation to update publicly or revise any forward-looking statement, whether as a result of new information, future events or otherwise, except as may be required by applicable law.

P4ML

DATA DRIVEN HEALTH INTELLIGENCE

Cork, Ireland

www.p4ml.com