



Genetic Signatures

Transforming Molecular Diagnostics



Investor Presentation

April 2022



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Company Summary



- ✓ Established ASX listed developer and manufacturer of molecular (PCR) based test kits for infectious diseases
- ✓ Novel **3base**® technology – changes DNA sequence, detects the most common mutations, rapid, low cost and accurate
- ✓ *EasyScreen*™ test kits available for sale in most major markets, expanding into EU and USA
- ✓ YTD FY22 sales \$30.6m, up 34% pcp
 - 3Q FY22 up 108% pcp
- ✓ YoY growth since listing
 - 4 year CAGR 93%
- ✓ Profitable, \$39.0m cash, no debt
 - \$4.7m profit 1H FY22





A '**Syndromic Screening**' approach allows users to test a broad range of clinically relevant pathogens based on patient symptoms, helping clinicians make an accurate diagnosis

EasyScreen™ Detection Kits

- **Simultaneously detect over 20 pathogens** from one sample, shortening **turnaround from days to hours**
- Assays for over 100 organisms, including for **SARS-CoV-2**, but also other disease states
- Streamlined universal sample processing kits – **common method across all kits**
- **3base® can detect all known COVID variants¹**
- Customers – **high throughput** labs, hospital groups and private pathology suppliers
- More than **quadrupled** GSS branded instruments in the field since start of pandemic

1. Per *in-silico* analysis conducted by Genetic Signatures



GS-mini

GS1-HT

GS-1000

Novel proprietary technology:

proprietary 3base[®] platform technology underpins the *EasyScreen*[™] product range

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Our proprietary 3base[®] solution...

- 1 **3base[®]** platform technology converts original 4-base microbial genome to 3-base
- 2 Conversion occurs during standard procedures with no additional steps for the technician
- 3 **3base[®]** MDx reduces complexity in a multiplex environment

G	C	C	T	C	A	C	T	T	C
	↓	↓		↓		↓			↓
G	T	T	T	T	A	T	T	T	T

1,048,576

combinations for a 10 digit
number with 4-base



59,049

combinations for a 10 digit
number with 3-base

...improves workflow and increases throughput



EasyScreen[™] kits are **compatible with most existing** automated nucleic acid extraction and real-time PCR instruments and **streamline the preparation process**



High throughput labs can achieve **further workflow automation** with compatible hardware. Creates **workflow efficiencies and reduces costs**



Currently offering over 150 pathogen targets across enteric, respiratory, anti-microbial resistance, sexual health, tropical diseases and more in development



	Before	After
Seq 1	G A T G G C G A T A T G G T T G A C A C	G A T G G T G A T A T G G T T G A T A T
Seq 2	G A T G G T G A C A T G G T A G A T A C	G A T G G T G A T A T G G T A G A T A T
Seq 3	G A T G G T G A T A T G G T G G A C A C	G A T G G T G A T A T G G T G G A T A T
Seq 4	G A T G G T G A T A T G G T A G A T A T	G A T G G T G A T A T G G T A G A T A T
Seq 5	G A T G G T G A T A T G G T G G A C A C	G A T G G T G A T A T G G T G G A T A T
Seq 6	G A T G G C G A C A T G G T T G A T A T	G A T G G T G A T A T G G T T G A T A T
Seq 7	G A T G G T G A T A T G G T G G A C A C	G A T G G T G A T A T G G T G G A T A T
Seq 8	G A T G G T G A C A T G G T A G A T A C	G A T G G T G A T A T G G T A G A T A T
Seq 9	G A T G G T G A T A T G G T A G A T A C	G A T G G T G A T A T G G T A G A T A T
Seq 10	G A T G G T G A T A T G G T G G A T A C	G A T G G T G A T A T G G T G G A T A T
Consensus	G A T G G Y G A Y A T G G T D G A Y A Y	G A T G G T G A T A T G G T D G A T A T
	75% homology over 20 bases	95% homology over 20 bases
	48 possible primer combinations	3 possible primer combinations

- Reduced sequence variation
- Improved subtype similarity
- No cross-reaction with 4-base native sequences, reduced laboratory contamination
- 3base® greatly simplifies the multiplexing process

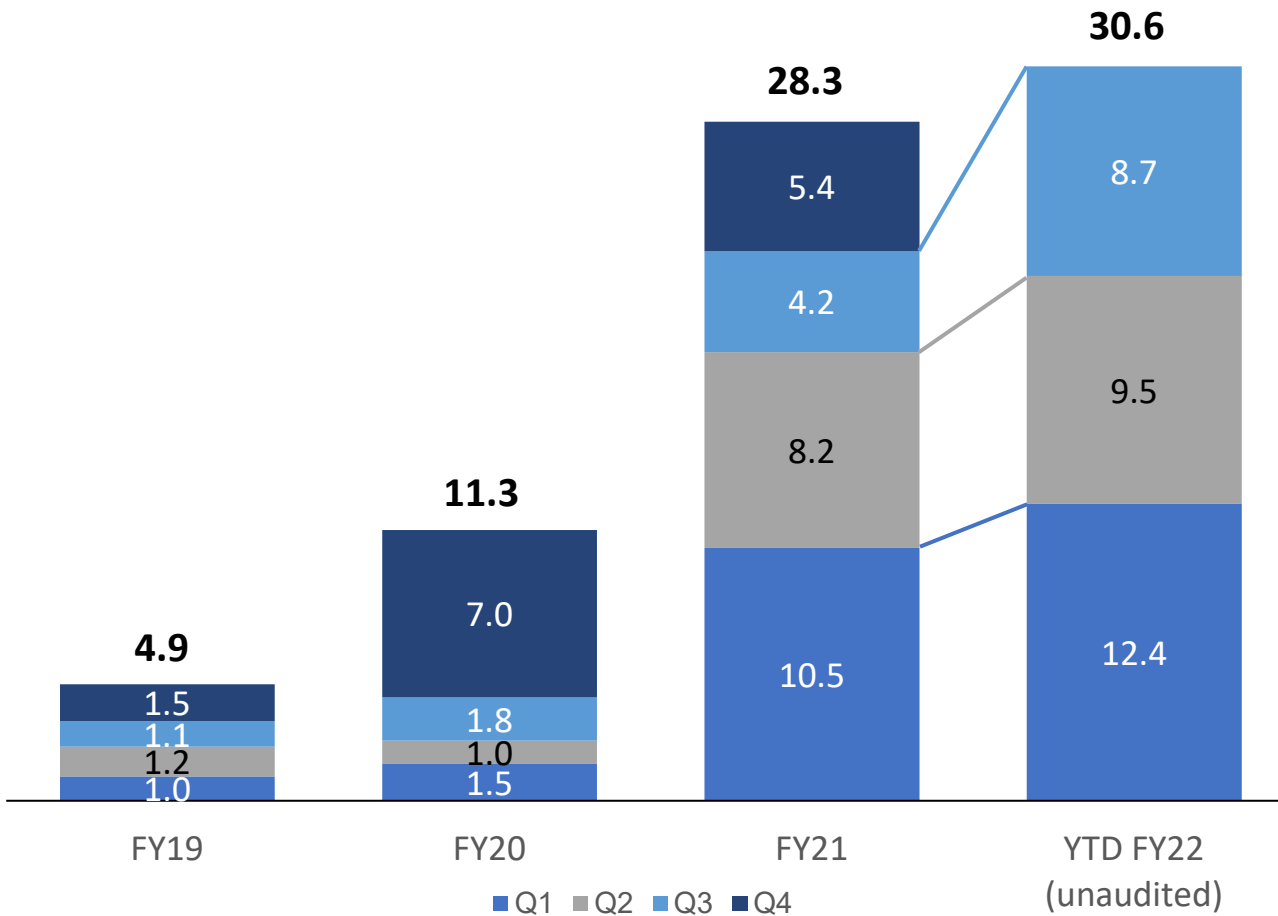
Conventional Sequence		Tm
Primer 1	GTACACACCGCCCGTCGCTCCTACC	77°C
Primer 2	GAAGGAGAAGTCGTAACAAG	56°C
Probe 1	TGAATAAAGAGGTGAAATTCTAGG	59°C
Probe 2	GAAGGGCCGCGAGCCCCCGCGC	87°C

3base™ Sequence		Tm
Primer 1	GTATATATTGTTTGTGTTTTTATT	52°C
Primer 2	GAAGGAGAAGTTGTAATAAG	50°C
Probe 1	TGAATAAAGAGGTGAAATTTTAGG	59°C
Probe 2	GAAGGGTTGTGAGTTTTTGTGT	62°C

- Simple Multiplex Primer/Probe Design
- Improved PCR Efficiency

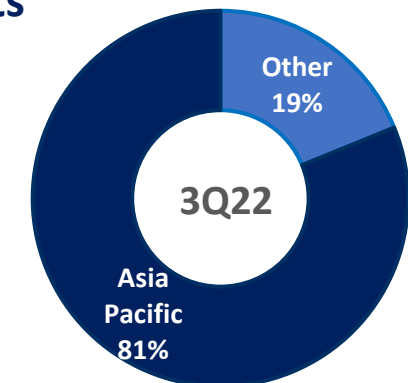


Revenue from sales (A\$m)



Continued Strong Revenue Growth

- 3Q FY22 \$8.7m, **up 108% on pcp**; increased contribution from overseas
- **SARS-CoV-2 test** demand tapering, being replaced with other tests
- **International sales teams actively engaged** with existing customers to promote broader *EasyScreen™* range – European orders received for Enteric range, including 3yr contract with Public Health Wales
- New instrument placements continue to **support future demand for tests**

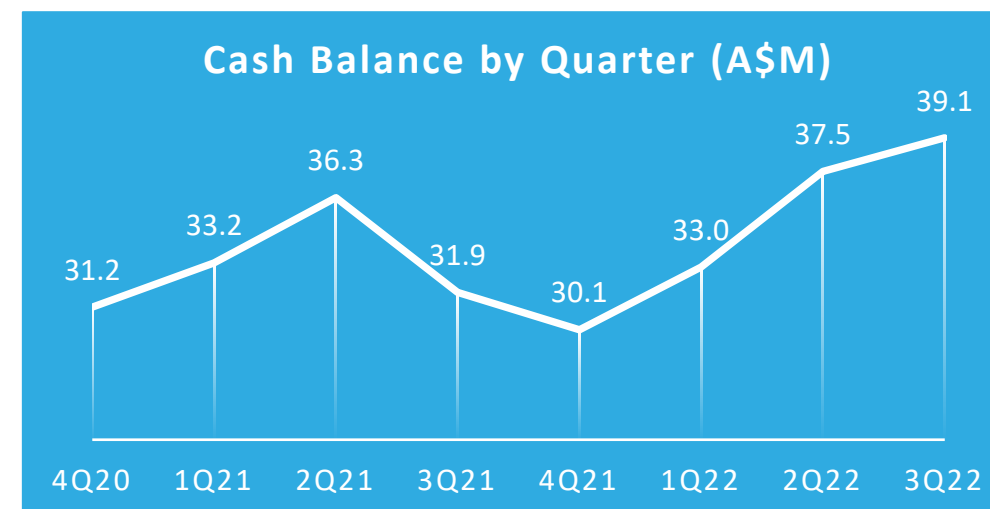




A'000s	3Q FY22	YTD FY22
Receipts from customers	11,834	34,258
Payments to suppliers and employees	(9,750)	(24,187)
Other	15	95
Net operating cashflow	2,099	9,976
Payment for plant & equipment	(54)	(334)
Payment for intangibles	(390)	(548)
Net investing cashflow	(444)	(882)
Net proceeds from issue of shares	18	132
Principal elements of lease payments	(92)	(272)
Net financing cashflow	(74)	(140)
Net increase in cash and cash equivalents	1,581	8,954
Opening cash and cash equivalents	37,496	30,121
Effects of exchange rate changes on cash	(26)	(24)
Closing cash and cash equivalents	39,051	39,051

Planned use of funds

- Instrument development - \$10-12m
- Future US FDA clearances
 - 3+ products – up to \$2m per product
- Additional personnel
 - Sales, support, clinical, regulatory
- Marketing and launch costs – new products
- Development of new amplification technology, decreasing time to result
- Ongoing R&D and IP costs





A'000s	1H FY22	1H FY21
Sales revenue	21,838	18,693
Cost of materials & freight	(6,890)	(6,086)
Gross profit	14,948	12,607
Employee benefits expense	(5,673)	(4,913)
Scientific consumables	(1,619)	(1,286)
Other expenses	(2,213)	(1,491)
EBITDA	5,443	4,917
Depreciation & amortisation	(814)	(655)
EBIT	4,629	4,262
Other income	72	235
Profit before tax	4,701	4,497
Income tax expense	-	-
Net income	4,701	4,497

Profitable while growing business

- 17% increase in 1H sales over pcg
- Gross margin **improved 1% to 68.4%** including freight costs
- Additional personnel, particularly overseas
- Ongoing R&D activity, clinical trials for FDA clearance
- Includes consulting costs for next generation instrument
- Additional instruments in customer sites & mfg

EasyScreen™ Detection Kit Range

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-  **Enteric**
Detects 20+ gastroenteritis pathogens including Salmonella, Giardia and Norovirus
-  **Respiratory**
Detects 14 common respiratory infections including Influenza types A&B, Rhinovirus and SARS-CoV-2
-  **ESBL & CPO**
Detection of antibiotic resistant pathogens also colloquially known as “superbugs”
-  **STI / Genital**
Detects the most prevalent pathogen infections (Chlamydia, Gonorrhoeae, Syphilis and Trichomoniasis) plus many others
-  **Flavivirus / Alphavirus**
Refers to mosquito born pathogens including Dengue fever, Zika virus, Japanese Encephalitis virus and others
-  **Meningitis**
Detects 8 viral meningitis pathogens, a life-threatening infection surrounding the brain and spinal cord
-  **Tick-borne Disease**
Detects a range of infectious agents carried by ticks including Lyme disease, typhus and tick-borne encephalitis
-  **Measles, Mumps, Rubella (MMR)**
Highly contagious viral diseases that can result in death in severe cases
-  **Dermatophytes**
Fungal infections of skin, hair and nails which can become chronic in immunocompromised people

Registrations

Current

TGA CE IVD

TGA CE IVD

TGA CE IVD

CE IVD

In process

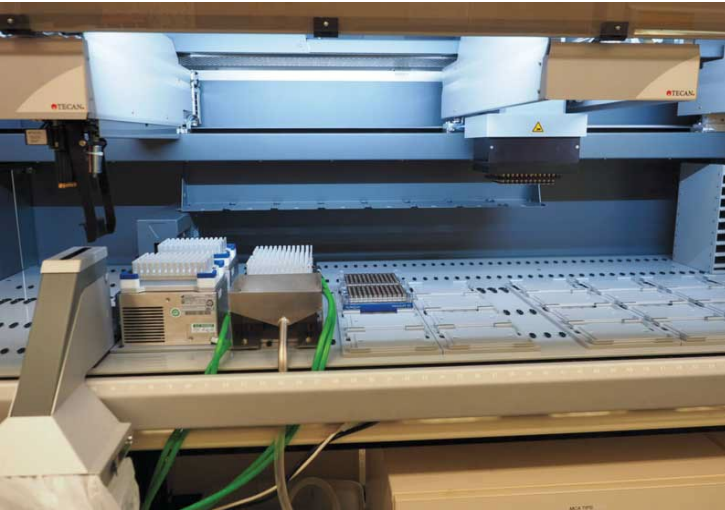
FDA *

US EUA

TGA



* Enteric Protozoan Detection Kit only



GS-1000

- Higher throughput platform (188 samples per run)
- Onboard sample & reagent traceability
- Minimal hands-on time, user-friendly wizard driven interface
- Performs both automated sample extraction & PCR set-up



GS-Mini

- Fully automated cartridge design
- Rapid extraction of DNA & RNA
- Reduce wastage/costs; choice of 1 to 12 samples
- Easy to use barcode reader
- Increased flexibility to perform other in-house laboratory nucleic acid extractions
- Compact footprint (60cmx60cm)



GS1-HT

- Fast sample processing of up to 96 samples
- Sample extraction & both 96 & 384 well PCR set-up on one platform
- Reduced potential for decontamination
- Allows automation of common laboratory tasks



Sample to Result Project

- Further reduce on-hands time & dramatically reduce time-to-result
- Work commenced & several suitable partners engaged
- Informed by market research & tailored to suit market needs

Image is concept only



Product Summary

- *EasyScreen™* enteric testing kits allow for flexible syndromic testing of over 20 clinically relevant pathogenic microorganisms
- Improved diagnostics allows for earlier & more effective treatment, driving significant cost savings across health systems
- Common workflow with other *EasyScreen™* diagnostic kits

Contract with Public Health Wales

- National tender won for molecular detection of enteric pathogens, including Protozoan, Viral and Bacterial targets
- Seven hospitals across Wales to screen all patients with **3base®** technology
- 3 year term, option to extend for further 2 years
- A\$1.8M per annum equivalent



GIG
CYMRU
NHS
WALES

Iechyd Cyhoeddus
Cymru
Public Health
Wales

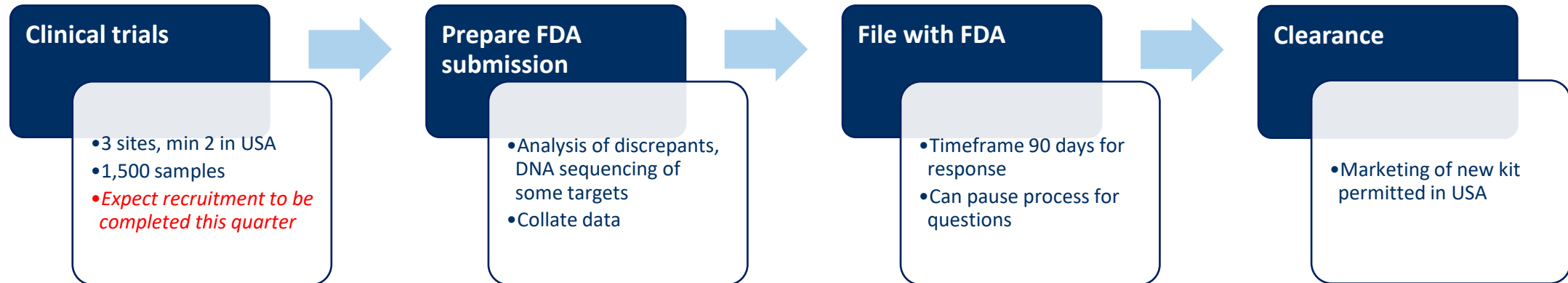
Enteric Protozoan Detection Kit – US Opportunity

- Est. 5.5m Enteric Protozoan tests pa in the US
- Initial focus on high throughput centralised labs
- Clinical trial recruitment close to complete
- Target to achieve up to 40% market share 5 years after clearance
- Reimbursement code already exists – CPT code 87506; \$262.99

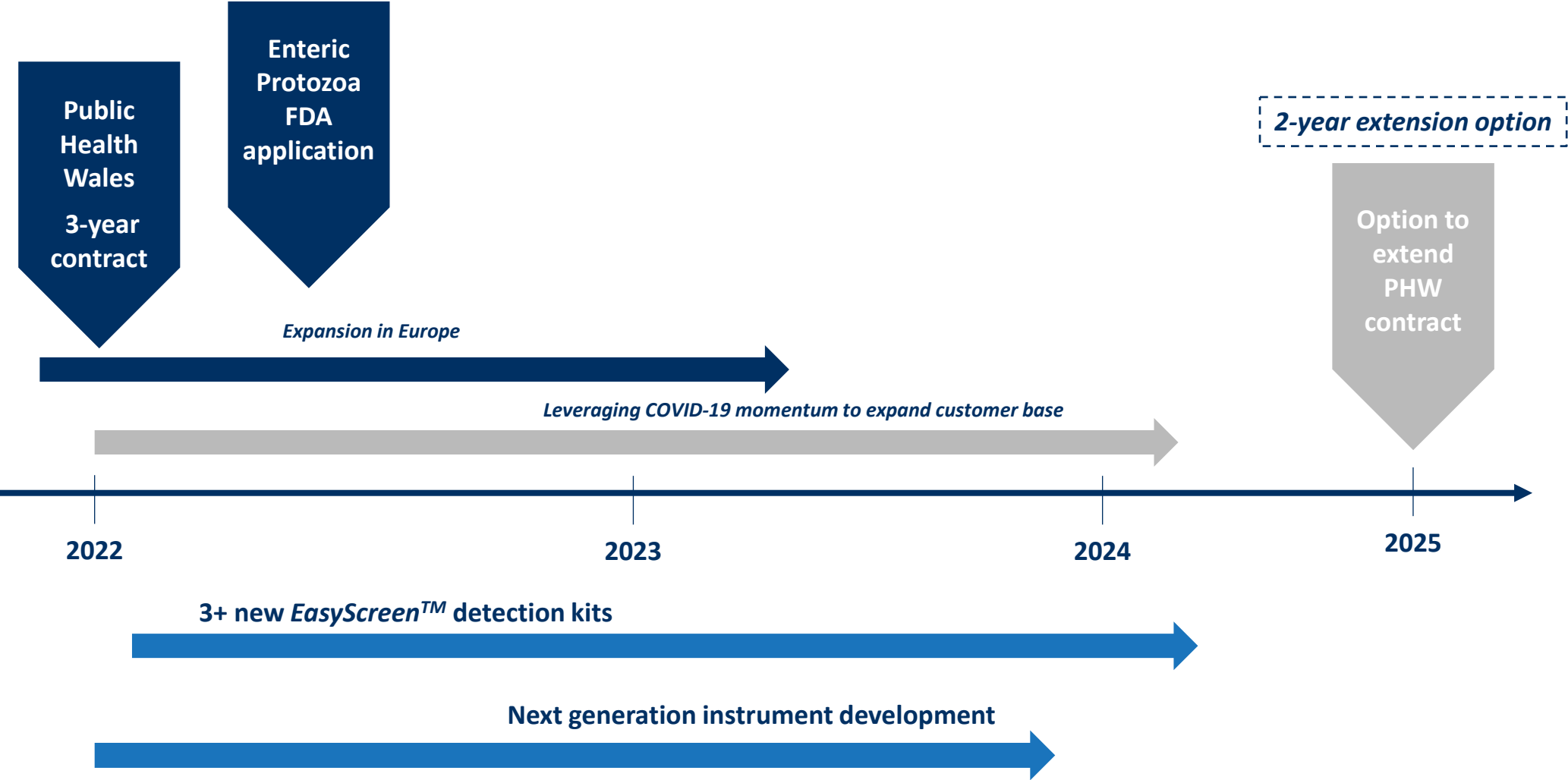




Process



Milestones





Leverage COVID-19 – new customers, new tests

- Continue building interest in *EasyScreen*™ kits in US & EU markets using expanded sales teams and SARS-CoV-2 experience as leverage
- SARS-CoV-2 only customers have five other kits with regulatory clearances available
- Promote & place GSS branded instruments



Product Development

- Next generation **3base**® ‘sample to result’ instrument
- Development of new amplification technology, markedly decreasing time to result, provisional patent filed
- Progress product registrations
 - FDA submission: Enteric Protozoan Detection Kit
 - TGA application for STI/Genital Pathogen Detection Kits
- Develop new test kits





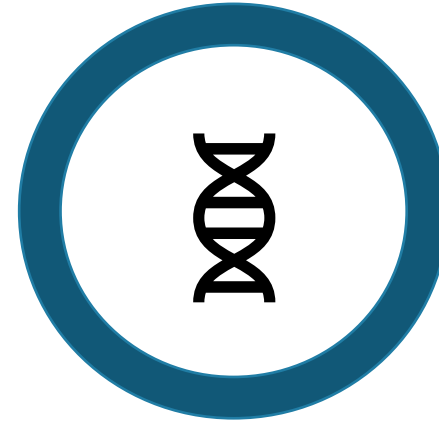
Revenue growth

- Maiden full year profit in FY21, profitable 1H22
- Cashflow positive 1H FY22, and continued revenue growth



Significant market opportunities

- Products sold in AU, EU & US
- Sales teams in key regions to engage with potential & existing customers



Continued product expansion

- 5 product groups in development
- Next generation 'sample to result' instrument
- Development of new amplification technology, reducing time to result



Attractive investment proposition

- Business model with favourable unit economics
- Increasing international recognition via *EasyScreen*™ SARS-CoV-2
- Unique technology **3base**® – with patents issued with expiry to 2031+



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