PITT STREET RESEARCH

Rhythm Biosciences

Share Price: A$0.96

Bowel cancer screening made simple

Rhythm Biosciences (ASX: RHY) is a medical diagnostics technology company based in Melbourne. Currently it is developing ColoSTAT, a simple blood-based test for the efficient detection of colorectal cancer at all stages, including the early stages. The method behind this blood-based test is to detect proteins that vary in concentration in the blood of patients with and without colorectal cancer. Historically, this research was pioneered by CSIRO back in 2003, and then in 2017, it was exclusively licensed to Rhythm. Since then, Rhythm has been working diligently to turn this licensed technology into an in-market product that could potentially serve as a frontline mass-market screen for colorectal cancer globally.

Investment case

We see a strong value proposition in Rhythm. 1) ColoSTAT is potentially a life-saving technology to disrupt and capitalise on the significant colorectal cancer diagnostic and screening market. 2) An economic moat arisen from the company's innovations in cancer detection technology. 3) Rhythm has a management team with a long-term focus. We believe the combination of these three investment drivers will help Rhythm to unlock significant value for its shareholders.

Valuation of A$1.73 per share

Based on a probability-weighted DCF analysis of ColoSTAT, we value Rhythm at A$1.73 per share base case and A$3.85 per share bull case. We recognise further upside if we ascribe value to: 1) embedded optionality from Rhythm's deeper product pipeline targeting indications other than colorectal cancer; and 2) an expanded patient size due to reduction in the recommended screening age. Please refer to page 19 of this report for details on the key investment risks.

Year to Jun (A$)	2019A	2020A	2021F	2022F	2023F
Royalty revenue (m)	0.0	0.0	0.0	0.0	20.8
Operating income (m)	(3.6)	(4.0)	(5.2)	(7.3)	12.4
Net profit (m)	(2.5)	(4.0)	(4.1)	(7.3)	11.2
Operating margin (%)	nm	nm	nm	nm	59.5%
EPS	(2.52c)	(3.99c)	(1.95c)	(3.40c)	5.21c
DPS	nm	nm	nm	nm	Nm
EV/Royalty revenue	nm	nm	nm	nm	8.9x
EV/Operating income	nm	nm	nm	nm	15.0x
P/E	nm	nm	nm	nm	17.8x

Source: Pitt Street Research

ASX: RHY

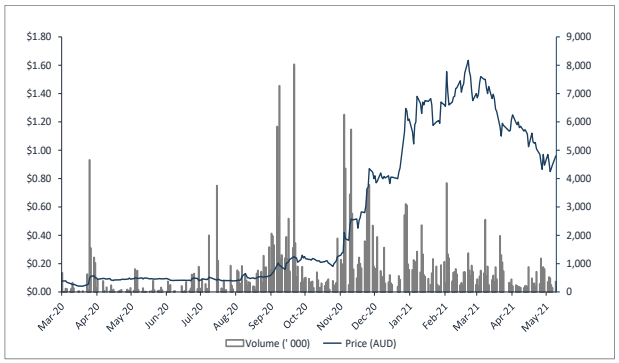
Sector: Health Care Equipment & Services

18 May 2021

Market Cap. (A$ m)	194.1
# shares outstanding (m)	202.2
# share fully diluted	209.6
Market Cap Ful. Dil. (A$ m)	201.3
Free Float	50.8%
12 months high/low	1.68 / 0.07
Average daily volume ('000)	776.0
Website	rhythmbio.com

Source: Company, Pitt Street Research

Share price (A$) and avg. daily volume (k, r.h.s.)



Source: CommSec, Pitt Street Research

Valuation metrics	
Probability-weighted DCF (A$ per share)	1.73 – 3.85
Discount rate	14.4%
Assumed terminal growth rate	None

Source: Pitt Street Research

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Table of Contents

Executive Summary

Introducing Rhythm Biosciences (ASX: RHY). Rhythm is a medical diagnostics technology company based in Melbourne. Currently it is developing ColoSTAT, a simple blood-based test for the efficient detection of colorectal cancer at all stages including the early stages. The method behind this blood-based test is to detect proteins that vary in concentration in the blood of patients with and without colorectal cancer. Historically, this method was pioneered by CSIRO back in 2003, and then in 2017, it was exclusively licensed to Vision Tech Bio Pty Ltd, Rhythm's wholly owned subsidiary. Since then, Rhythm has been working diligently to turn this licensed technology into an in-market product that could potentially serve as a frontline mass-market screen for colorectal cancer.

Value proposition

A healthcare IT disrupter poised to capitalise on a large addressable market

Potentially life-saving technology to disrupt the enormous colorectal cancer diagnostic and screening market. Colorectal cancer is the third most common cancer in the world, with c.94% of incidence occur in people aged 45 years and older. If detected early, it is often curable. Yet, reality shows that >50% of the elevated risk people worldwide are unscreened, heightening the likelihood of colorectal cancer being developed into late-stages. We suspect that this lack of compliance is due to headwinds facing the current screening tests, which seem to refrain people from adopting them. Our research on ColoSTAT suggests this technology could potentially combat those headwinds and thereby improve screening compliance. When and if developed, ColoSTAT would be rolled out across many major geographical markets, a market size estimated at c.769 million people and valued at >A$38B.

Innovation is Rhythm's economic moat. Unlike the current market standard Faecal Immunochemical Test (FIT), ColoSTAT does not involve stool handling, a cumbersome task that has been widely recognised as a headwind to FIT adoption. There is also a degree of the population that are unable to complete the FIT due to cultural or clinical reasons. More significantly, recent testing results showed that ColoSTAT beats FIT on both sensitivity and specificity measures, meaning ColoSTAT has: 1) higher accuracy in detecting colorectal cancer vs FIT; and 2) lower risk of false positives vs FIT. Elsewhere in the competitive landscape, a number of other life science companies have either developed or are in the process of developing a colorectal cancer screening test using a blood-based approach. But since some of their technologies are either DNA or molecular-based and hence incur a higher cost, we do not view them as potential threats to Rhythm, especially given that global national screening programs are highly budget sensitive. Moreover, to unseat FIT, a product needs to be competitive with FIT in accuracy, even if its technology utilises a protein-based blood test.

Management with long term focus. Rhythm has an experienced and qualified management team who we believe are capable to grow this young company into a successful global cancer diagnostics technology business. Among the company's highly credentialed team members, Trevor Lockett has been a long-term contributor who oversaw the ColoSTAT research journey. We see this long-term focus as one of the key drivers for creating shareholder value.

Investment view

Based on a probability-weighted DCF analysis of ColoSTAT, we value Rhythm at A$1.73 per share base case and A$3.85 per share bull case. We recognise significant further upsides if we ascribe value to: 1) embedded optionality from Rhythm's deeper product pipeline targeting indications other than colorectal cancer; and 2) an expanded patient size due to a reduction in the recommended screening age. We anticipate near-term value inflection points to occur as the company continues its path towards commercialisation.

Seven reasons to consider Rhythm Biosciences

1) **Strategic focus on colorectal cancer diagnosis.** Despite the potential of ColoSTAT's key lead biomarker to target indications other than colorectal cancer, Rhythm decided to take one step at a time and strategically focus on the lucrative colorectal cancer diagnostic and screening market. The aggregate market opportunity is valued at >A$38B.
2) **ColoSTAT could potentially improve screening compliance.** >50% of the population aged between 50-74 are unscreened. We suspect that this lack of compliance is due to headwinds facing the current standard test. Our research on ColoSTAT suggests this technology could potentially combat those headwinds and thus improve screening compliance and save lives.
3) **ColoSTAT looks best placed to achieve mass-market screening.** Driven by accuracy, low cost and simplicity, ColoSTAT is in our view best positioned to be developed into a frontline mass-market screen that could potentially serve as a substitute to FIT as the current non-invasive market standard.
4) **Integration with existing pathology infrastructure drives global rollout**. The ColoSTAT technology is designed to integrate with existing pathology infrastructure. Accordingly, this reduces upfront capital spend and labour intensity. Importantly, being able to fit with standard laboratory processes enhances ColoSTAT's global rollout.
5) **Regulatory tailwind to expand current addressable market**. As colorectal cancer incidence has been rising in the younger population, several medical organisations have reduced, or are in the process of reducing the current recommended screening age from 50 to 45. This can significantly expand Rhythm's addressable market and provide material upside to its future revenue.
6) **Strong management with long-term focus.** The management team has extensive healthcare and entrepreneurial expertise who we believe are capable to grow Rhythm into a substantial business. Trevor Lockett is one of Rhythm's highly credentialed team members and has been a long-term contributor overseeing the ColoSTAT R&D journey. We see this long-term focus as a key driver for creating shareholder value.
7) **Rhythm is undervalued on our numbers.** Based on a probability weighted DCF analysis of ColoSTAT, we value Rhythm at A$1.73 per share base case and A$3.85 per share bull case. We see Rhythm being re-rated towards our valuation range on the back of several catalysts including obtaining early regulatory approvals and advancement in partnering discussions.

Rhythm to capitalise on a global market opportunity

The vital role of colorectal cancer screening

Colorectal cancer, also known as bowel cancer, is the second most common cause of cancer death in Australia, with over 5,000 deaths recorded in 2018.[1] According to the World Health Organisation (WHO), it is the third most commonly diagnosed cancer in males and the second in females. The three geographical markets exhibiting the highest incidence rates of colorectal cancer are: 1) Australia and New Zealand; 2) Europe and 3) North America.[2] In the US alone, total treatment cost for colorectal cancers amounts to c.$14B per annum.[3]

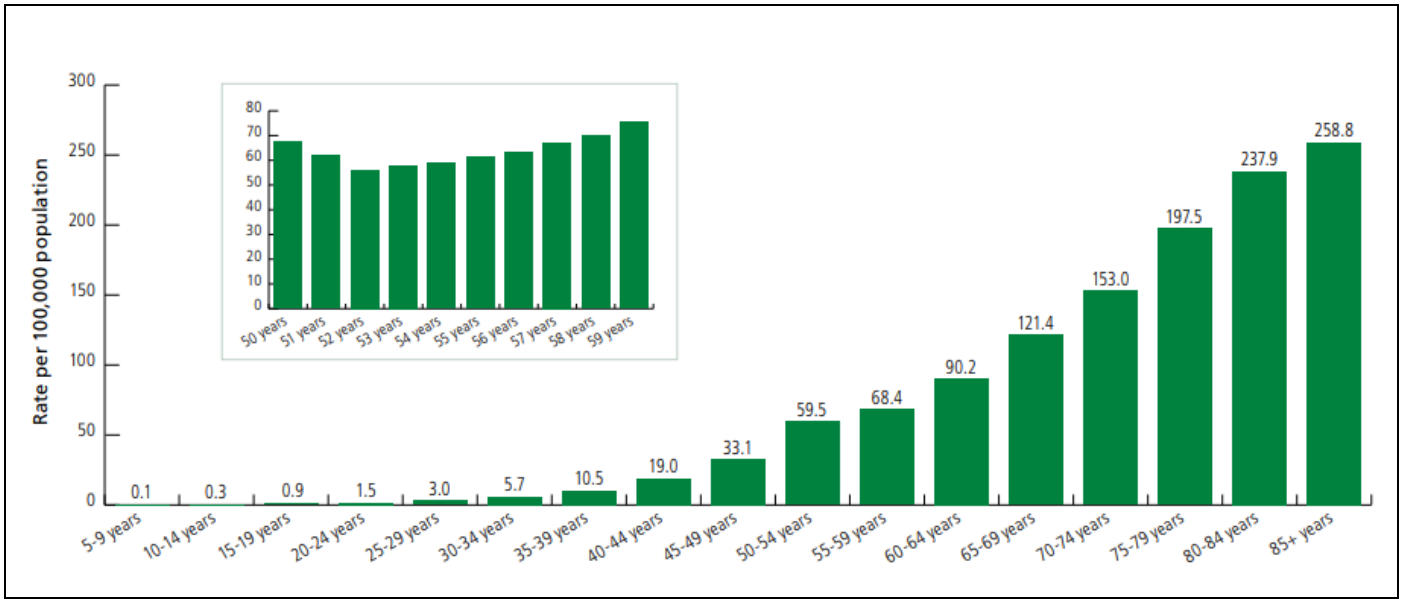
Regular screening can increase the survival rate of colorectal cancer

However, if colorectal cancer is detected early, survival rates can be as high as 90%.[4] This is because through regular screening, colorectal polyps can be more often found and removed before they develop into cancer. Also, treatment at the early stage of the disease is found to be less expensive and that patient's recovery is a lot quicker.

Research has shown that age is a key determining risk factor for colorectal cancer, as reflected by a positive correlation between incidence rates and age (Figure 1). Importantly, c.94% of incidence rates occur in people aged 45 years and older.[5]

As a result, all major national medical guidelines including the US Preventative Services Task Force (USPSTF), the National Comprehensive Cancer Network (NCCN), and the American Cancer Society (ACS) recommend people above 50 years old to get regular screening, even if symptoms of the disease are absent.

Figure 1: Colorectal cancer rates split by age in the US, 2012-2016



Source: American Cancer Society, Colorectal Cancer Facts & Figures 2020-2022

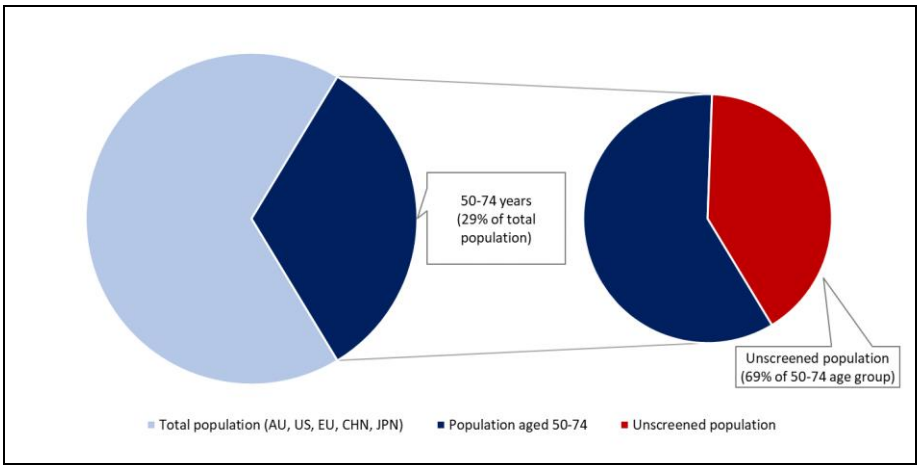
[1] https://www.canceraustralia.gov.au/affected-cancer/cancer-types/bowel-cancer/bowel-cancer-colorectal-cancer-australia-statistics
[2] Global Burden of Disease Cancer Collaboration, Fitzmaurice C, Allen C, et al. Global, Regional, and National Cancer Incidence, Mortality, Years of Life Lost, Years Lived With Disability, and Disability-Adjusted Life-years for 32 Cancer Groups, 1990 to 2015: A Systematic Analysis for the Global Burden of Disease Study. JAMA Oncol 2017; 3:524.
[3] https://coloncancercoalition.org/get-educated/what-you-need-to-know/colon-cancer-facts/
[4] https://www.cancer.org/cancer/colon-rectal-cancer/detection-diagnosis-staging/detection.html
[5] Surveillance, Epidemiology, and End Results. Cancer Stat Facts: Colorectal Cancer. https://seer.cancer.gov/statfacts/html/colorect.html. Accessed October 5, 2020.

>50% of population aged 50-74 years remain unscreened

The key addressable market for Rhythm's ColoSTAT screening is people aged between 50-74 years old, which as highlight above represents the section of the population at increased risk of having colorectal cancer.

Currently, there are c.769 million people between the age of 50-74 years in Rhythm's target markets, namely Australia, US, EU, China and Japan. Within this age group, over half (c.69%) remain unscreened (Figure 2).

Figure 2: Estimated unscreened opportunity in Rhythm's target markets



Source: Worldometer, Company, Pitt Street Research

Rhythm seeks to roll out a product that could potentially drive a significant uplift in the current low compliance rate

The low compliance rate is further exacerbated by the COVID pandemic as it forced a lot of people to delay or forego their regular screenings. According to the ACS, the number of colonoscopy screenings have reduced significantly in 2020. Studies have found that a delay of up to 12 months in screening can result in a loss in life-years gained from screening of up to 10%.[6]

Aside from COVID, our view is that the current low compliance rate reflects headwinds facing the current standard test which seem to refrain patients from participating in it. Moreover, we think it is those headwinds facing the current standard screening that provide Rhythm with an opportunity to potentially disrupt and capitalise on the colorectal cancer screening market.

We will look at the current screening tests as well as Rhythm's competitive advantages later in this report. Before that, we will examine the potential revenue implications for Rhythm should its ColoSTAT test kit be successfully developed and rolled out into its target markets across the globe.

[6] Jonge L, Worthington J, Wifferen F, Iragorri N, Peterse EFP, Lew JB. Impact of the COVID-19 pandemic on faecal immunochemical test-based colorectal cancer screening programmes in Australia, Canada, and the Netherlands: a comparative modelling study. Lancet Gastroenterol Hepatol 2021. Published Online February 3, 2021.

Translating screening numbers into dollar terms

With an assumption made on the price per ColoSTAT test, we could work out the potential revenue streams that accrue to Rhythm.

In ascribing possible price points for a ColoSTAT test, we think a range of A$40 to A$50 to be a suitable estimate after considering both the estimated costs of comparable screening tests and the comparatively lower cost functionality of the ColoSTAT technology (refer to the competitor section for detail).

Potential size of the ColoSTAT screening market can be as high as c.A$39B

By multiplying our assumed ColoSTAT prices against the screening numbers for the recommended 50-74 age group, we can derive that the potential size of the colorectal cancer screening market across Rhythm's target markets can be as high as c.A$39B. This would however assume that Rhythm will capture the entire market share of its target markets. Given the competitive dynamics of the colorectal cancer screening market, we believe it is more likely that Rhythm will compete for market shares and thereby capture a portion of its addressable market. Figure 3 shows our estimated revenues that could accrue to Rhythm by varying its markets share and price points.

Figure 3: Revenue matrix for ColoSTAT (A$B)

		Market Share				
Price per test (A$)		60%	55%	50%	45%	40%
	50	23.1	21.1	19.2	17.3	15.4
	48	22.1	20.3	18.5	16.6	14.8
	46	21.2	19.5	17.7	15.9	14.1
	42	19.4	17.8	16.1	14.5	12.9
	40	18.5	16.9	15.4	13.8	12.3

Source: Pitt Street Research

Colorectal cancer is rising among young adults

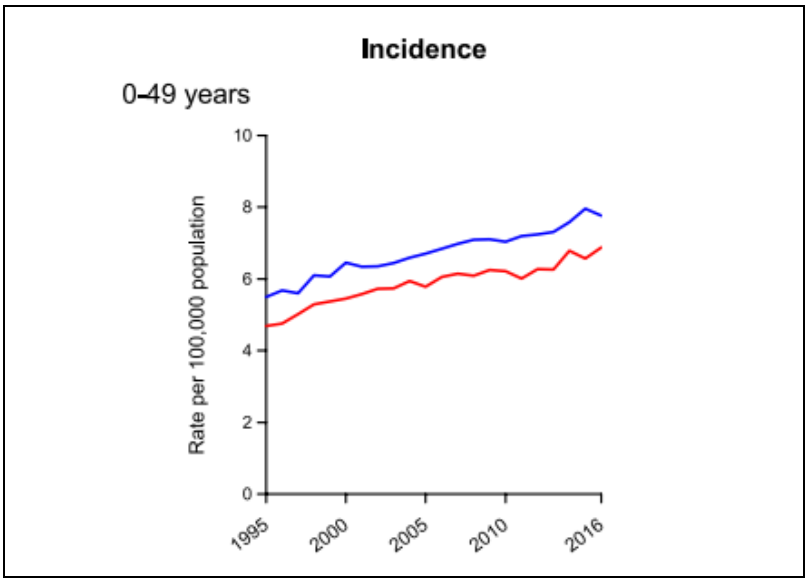
Although the risk of developing colorectal cancer is higher among people aged above 50 years, research shows a rising trend in the incidence of colorectal cancer in younger age groups since the mid-1990s (Figure 4).

From 2011 to 2016, colorectal cancer rates rose by c.2.2% per year for people under 50 years old.[7] For a younger age group between 20-39, a 2017 study completed by the ACS shows that rates increased by 1-2% per year for the period from 2013 to 2017.[8]

For 2020, according to the ACS's estimates, c.12% of colorectal cancer cases will be diagnosed in people under the age of 50 in the US, equivalent to c.18,000 cases.[9] Additionally, it has been reported that colorectal cancer is the third leading cause of cancer death in young adults.[10]

[7] https://www.cancer.org/latest-news/colorectal-cancer-rates-rise-in-younger-adults.html
[8] https://www.henryford.com/blog/2020/08/colon-cancer-rates-younger-adults-rising
[9] Siegel RL, Miller KD, Goding Sauer A, et al. Colorectal cancer statistics, 2020. CA Cancer J Clin 2020; 70:145.
[10] https://coloncancercoalition.org/get-educated/what-you-need-to-know/colon-cancer-facts/

Figure 4: Incidence in colorectal cancer for younger age group in the US



Source: Colorectal Cancer Statistics, 2020 in CA: A Cancer Journal for Clinicians

Since the general recommended screening age is 50 in most markets, we see the population under 50 years old as more likely to be diagnosed with late-stage colorectal cancer due to its under-screened nature. We recognise from Figure 1 that colorectal cancer rates are much less in the younger population compared to the older age group. However, the fact that rates have been rising in people under 50 (Figure 4) makes us to believe that the recommended screening age should be reduced in order to prevent any early-stage colorectal cancers from developing into late-stage cancers in younger adults.

In fact, several medical organisations have reduced, or are in the process of reducing the current recommended screening age from 50 to 45. In 2018, the ACS recommended to reduce the screening age for those at average risk[11] from 50 to 45.[12,13,14] In October 2020, the USPSTF recommended screening to commence at age 45.[15]

Reduced screening age = Expanded TAM = Revenue upside

Expansion in TAM due to reduced screening age will bring upside potential to shareholder value

Given its significance, we think the reduced screening age of 45 will gradually be implemented in all Rhythm's target markets. If this eventuates, Rhythm's total addressable market will expand significantly. This in turn is expected to provide material upside to the company's future revenue, in our view.

To illustrate, the reduced screening age of 45 (from 50) in the US market alone would add c.20 million patients to its addressable market base. Based on an assumed A$50 per ColoSTAT test and a 50% market share, this would drive an uplift of A$500M in Rhythm's US revenue alone.

[11] Average risk is defined by the American Cancer Society Guideline as people who do not have: 1) A personal history of colorectal cancer or certain types of polyps; 2) A family history of colorectal cancer; 3) A personal history of inflammatory bowel disease (ulcerative colitis or Crohn's disease); 4) A confirmed or suspected hereditary colorectal cancer syndrome, such as familial adenomatous polyposis (FAP) or Lynch syndrome (hereditary non-polyposis colon cancer or HNPCC); and 5) A personal history of getting radiation to the abdomen (belly) or pelvic area to treat a prior cancer.

[12] https://www.cancer.org/cancer/colon-rectal-cancer/detection-diagnosis-staging/acs-recommendations.html

[13] Wolf AMD, Fontham ETH, Church TR, et al. Colorectal cancer screening for average-risk adults: 2018 guideline update from the American Cancer Society. CA Cancer J Clin. 2018; 68:250-281.

[14] Fedewa SA, Siegel RL, Goding Sauer A, Bandi P, Jemal A. Colorectal cancer screening patterns after the American Cancer Society's recommendation to initiate screening at age 45 years. Cancer. Published online December 18, 2019.

[15] https://www.uspreventiveservicestaskforce.org/uspstf/draft-recommendation/colorectal-cancer-screening3#citation2

Current colorectal cancer screening tests

Currently, there are several test options for colorectal cancer screening (Figure 5). They are broadly categorised into the following two groups:

- **Visual tests**. Allow doctors to look at the structure of the colon and rectum for abnormality. These are done either with an endoscope put into the rectum or with radiological images.
- **Stool-based tests**. Examine hidden blood in the stool for possible signs of colorectal cancer. The faecal immunochemical test (FIT) is recognised as the current market standard, which involves the cumbersome task of collecting stool samples, placing them in a container, accurately completing the forms and then delivering them to a pathology laboratory for testing and analysis.

Generally, patients would first go for a stool-based test as it is less invasive to perform vs visual tests. If the results come back positive, patients will then be advised to do a visual test which is likely to involve a colonscopy.

Figure 5: Comparing current screening tests for colorectal cancer

	Aim of tests	Strengths	Weaknesses
Stool-based tests			
Faecal immunochemical test (FIT)	Uses antibodies against haemoglobin to detect blood in the stool	No bowel prep Non-invasive Low cost (FIT: c.US$21)[16,17]	Can miss polyps Can produce false positive test results Cancer needs to be bleeding
Guaiac-based fecal occult blood test (gFOBT)	Uses a peroxidase reaction of the haem component of haemoglobin to detect blood in the stool[18]		
Multitargeted stool DNA (Cologuard)[19]	Detects abnormal DNA and hidden blood shed into the stool by large adenomas and colon cancer	No bowel prep Non-invasive	Can miss polyps Significantly higher cost than FIT and gFOBT
Visual tests			
Colonoscopy	Uses a colonoscope to examine the inside of the entire colon to detect and prevent colorectal cancer	Can remove polyps Examine entire colon Can find other diseases	Bowel prep needed Infection risk Expensive Risk of bowel perforation Risk associated with anesthesia
Flexible sigmoidoscopy	Similar to colonoscopy except it only visualises the rectum and less than half of the colon[20]	Quick and safe Minimal bowel prep	Views 1/3 of colon Cannot remove large polyps
Computed tomographic colonography	Uses x-rays and a CT scan to generate 3-dimensional views of the entire colon and rectum	Quick and safe View entire colon Non-invasive	Cannot remove polyps Exposure to low dose of radiation

Source: American Cancer Society, Australian Journal of General Practice, US Preventative Services Task Force

[16] Kanaoka S, Kuriyama S, Iwaizumi M, Yamada T, Sugimoto M, Osawa S, et al. Potential Usefulness of Fecal Immunochemical Test Plus Fecal MicroRNA Assay As a Marker for Colorectal Cancer Screening. Gastroenterology. 2013 May;144(5):S-599–600.
[17] Kwong TN, Wang X, Nakatsu G, Chow TC, Tipoe T, Dai RZ, et al. Association between Bacteremia from Specific Microbes and Subsequent Diagnosis of Colorectal Cancer. Gastroenterology. 2018 Aug;155(2):383–390.e8.
[18] Rabeneck L, Rumble RB, Thompson F, et al. Fecal immunochemical tests compared with guaiac fecal occult blood tests for population-based colorectal cancer screening. Can J Gastroenterol 2012;26(3):131–47.
[19] Cologuard is currently available and approved for colon cancer screening in the US.
[20] ACS notes in "Colorectal Cancer, Facts & Figures, 2020-2022": Sigmoidoscopy was a common screening test before 2000, but current availability is limited because it has mostly been replaced by colonoscopy.

How ColoSTAT works

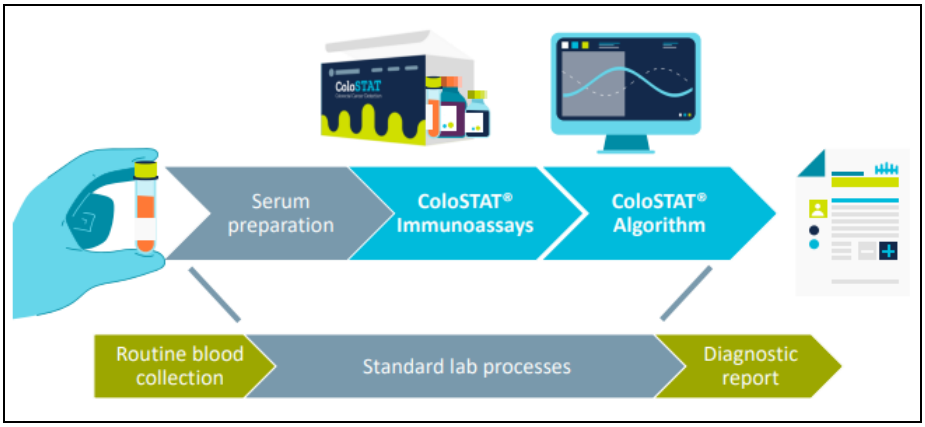
ColoSTAT is a blood test that is based on the detection of proteins that vary in concentration in the blood of patients with and without colorectal cancer.

Proteins are routinely produced from the cells in our body and get released into the blood. The levels of proteins being produced and released into the blood can be affected by the type and health of our cells. Literature note that tumor cells release numerous proteins into the blood stream when compared to healthy cells in the human body.[21, 22]

Rhythm believes it has developed antibodies for key protein biomarkers that can successfully differentiate between cancerous and healthy blood samples.

Suppose that after a patient draws his blood, ColoSTAT would use antibodies for the lead biomarker to measure proteins levels in the patient's blood. The concentrations of these proteins would then be weighted using an algorithm, which in turn generates a colorectal cancer risk score that gets inputted into a diagnostic report readily available for the GP to discuss with the patient (Figure 6).

Figure 6: How ColoSTAT works



Source: Company

When the research began

A combined 16 years of R&D effort between CSIRO and Rhythm

Rhythm's work is built on top of a 13 years of R&D effort pioneered by CSIRO back in 2003 when a group of scientists began researching and developing a blood test for colorectal cancer diagnosis.

Initially, CSIRO scientists identified 68 proteins reported to change in their concentration in the blood of patients with and without colorectal cancer. Over time, with the funding assistance from the National Health and Medical Research Council and the BUPA Health Foundation, CSIRO managed to reduce its 68 biomarkers down to a panel of 10 lead targets as the most probable candidates for commercialisation.

In 2017, CSIRO signed a licensing agreement with Vision Tech Bio Pty Ltd (Vision Tech), Rhythm's wholly owned subsidiary, granting Vision Tech an exclusive license to related know-how for the biomarker technology. Since then, Rhythm has been working diligently to turn the licensed technology into a viable asset by developing a test kit that incorporates: 1) its own version of

[21] Bünger S., Haug U., Kelly F.M., Klempt-Giessing K., Cartwright A., Posorski N. Toward standardized high-throughput serum diagnostics: multiplex-protein array identifies IL-8 and VEGF as serum markers for colon cancer. J. Biomol. Screen. 2011;16:1018–1026.
[22] Fijneman R.J.A., de Wit M., Pourghiasian M., Piersma S.R., Pham T.V., Warmoes M.O., Lavaei M., Piso C., Smit F. Proximal fluid proteome profiling of mouse colon tumors reveals biomarkers for early diagnosis of human colorectal cancer. Clin. Cancer Res. 2012;18:2613–2624.

antibodies; and 2) an algorithm that can be used to read the protein concentrations in the blood to derive a risk score for colorectal cancer.

ColoSTAT's competitive advantages

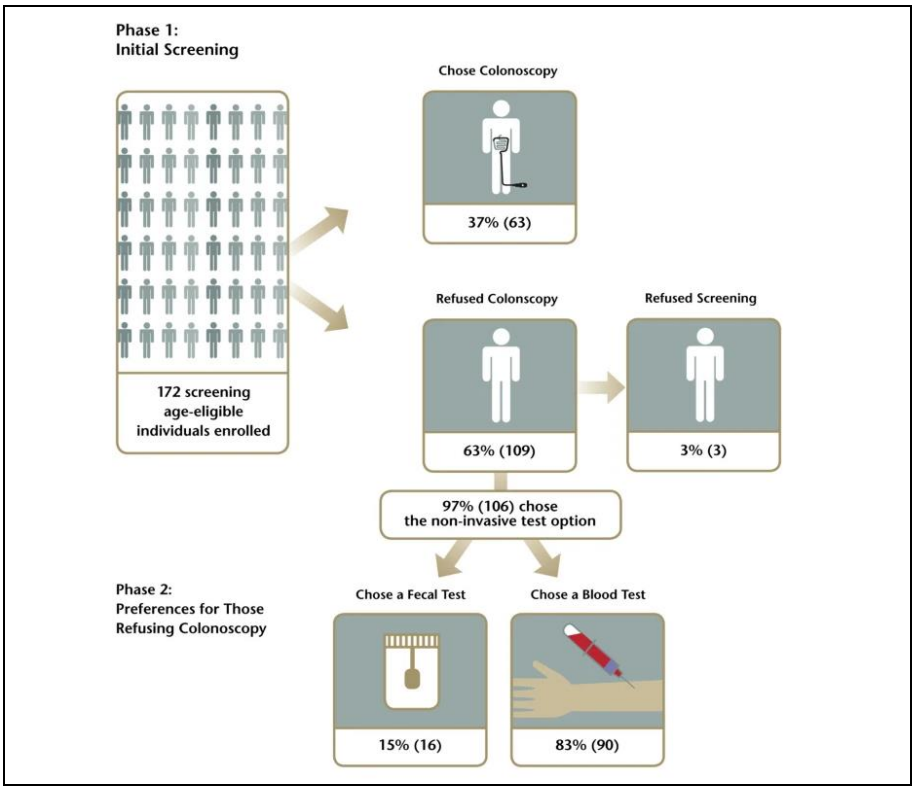
ColoSTAT vs FIT

When compared against the current market standard FIT, we see Rhythm's ColoSTAT possessing the following key competitive advantages:

Patients appear to be more receptive to a blood test

- **Patient preference is the prime vector that drives higher compliance.** As ColoSTAT is performed over a simple blood test, patients can forego the cumbersome task of dealing with stool samples. Evidence from a study showed that when given FIT and a blood test as two screening options for colorectal cancer, 83% of study subjects chose a blood test (Figure 7).[23] We think the dislike of patients to perform FIT in part explains why over 50% of the recommended group remain under-screened. Importantly, we believe this demonstrates that the advent of ColoSTAT could significantly drive up screening compliance and thereby save more lives. According to the National Colorectal Round Table estimates, the number of colorectal cancer deaths could be cut by 230,000 if 80% of the eligible population was screened at 50 years old.

Figure 7: Study performed to determine the impact of offering a blood based test on the participation rate for colorectal cancer screening in Berlin, Germany



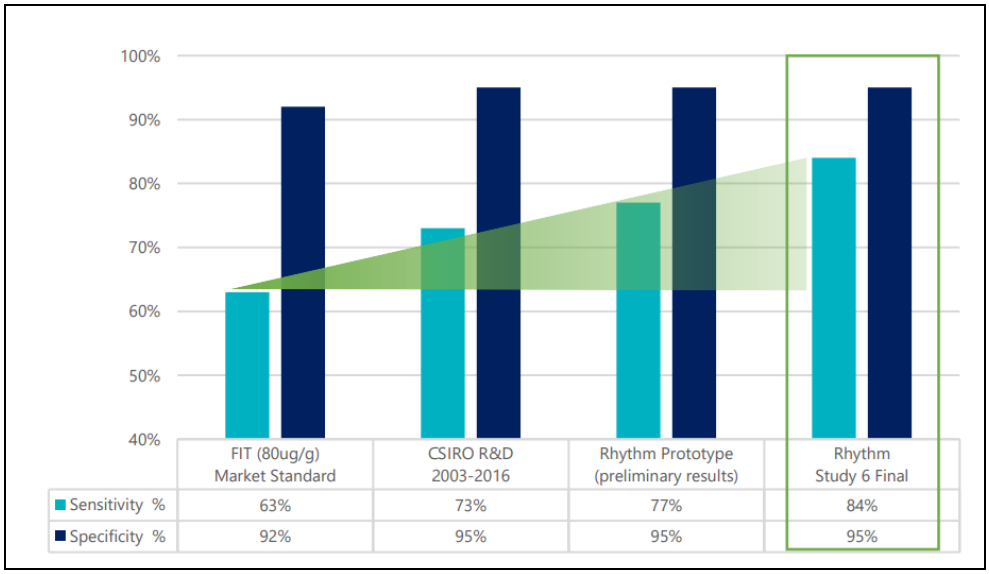
Source: Adler, A., Geiger, S., Keil, A. et al. Improving compliance to colorectal cancer screening using blood and stool based tests in patients refusing screening colonoscopy in Germany. BMC Gastroenterol 14, 183 (2014).

[23] Adler, A., Geiger, S., Keil, A. et al. Improving compliance to colorectal cancer screening using blood and stool based tests in patients refusing screening colonoscopy in Germany. BMC Gastroenterol 14, 183 (2014).

Improved accuracy is a competitive edge over the current market standard

- **Having higher accuracy for the detection of colorectal cancer is a moat.** Performance testing of the ColoSTAT prototype test kit demonstrates that it outperforms FIT in terms of both sensitivity and specificity (Figure 8). ColoSTAT's higher sensitivity value means it has higher accuracy than FIT in detecting patients who have colorectal cancer. On the other hand, its higher specificity value compared to FIT indicates that ColoSTAT is less likely to refer patients on for further unnecessary examination. In simple terms, this means ColoSTAT is less likely to produce false positive test results compared to FIT. This is significant in our view as ColoSTAT could potentially mitigate the unnecessary cost and discomfort associated with further testing (such as a colonoscopy) triggered by a false positive FIT test result. The exceptional results from Study 6 should fortify ColoSTAT's moat as an effective screening test for colorectal cancer, in our view.

Figure 8: ColoSTAT Study 6 results vs FIT and prior CSIRO studies



Source: Company

ColoSTAT could potentially enable many young adults to be screened for colorectal cancer

- **Opportunistic screening allows ColoSTAT to tap into a much wider population group.** Since the ColoSTAT blood test can be completed at a general practice clinic during a routine check-up, this virtually allows everyone regardless of their age to be screened for colorectal cancer. As highlighted earlier in the report, the rising colorectal cancer rates in young adults have heightened the urgency to lower the standard 50 years threshold. Given its opportunistic screening feature, coupled with its simple-to-implement model, we think ColoSTAT could potentially address the screening age issue by widening the patient pool to virtually everyone in the world. The resulting increase in compliance rate will thereby reduce the number of colorectal cancer related deaths.

ColoSTAT vs blood-test competitors

Elsewhere in the competitor space, there are several other listed and private companies also currently providing and developing blood-based tests for the detection of colorectal cancer (Figure 9).

Figure 9: Blood-based test providers/developers for colorectal cancer

Company	Status	Screening technology	Detection target	Stage of development	Estimated cost, USD
Novigenix	Private	Colox	A molecular test that measures the immune system response to colorectal lesions	In market	$307[24]
Clinical Genomics	Private	Colvera	Detects tumour DNA in the blood for recurrent colon cancer	In market	$449[25]
Epigenomics	Public	Epi proColon	Detects a specific type of DNA called Septin9, which is altered in colorectal cancer tumor cells more often than in normal cells	In market	$273-445[26]
Applied Proteomics	Private	SimpliPro Colon	Detect likelihood of colorectal cancer using proteomic analysis[27]	In market	Not provided
Volition Rx	Public	Nu.Q	Detects very early DNA nucleosomic markers of cancer	In development	$150[28]
Freenome	Private	Multiomics	Detects key biological signals from a routine blood draw	Seeking regulatory approval[29]	Not provided
CellMax Life	Private	FirstSight	Detect precancer and cancer cells in blood (DNA based)	Performing large study[30]	Not provided

Source: Medscape, Company websites, Rhythm Bioscience Presentation

ColoSTAT's cost advantage is a market share driver

We view Rhythm's ColoSTAT as being uniquely positioned in the competitive landscape due to its following traits:

- **ColoSTAT could undercut some competitors on pricing.** Colox, Colvera and Epi proColon are some of the blood-based tests currently available in the market. But it is worth noting that all of them are molecular/DNA based tests, which means they are more complicated and time consuming to analyse due to a need to extract DNA/RNA beforehand. The specialist methodologies and instrumentation required for these type of tests and analysis reflect their higher costs compared to faecal-based tests (Figure 9). With Rhythm however, its ColoSTAT blood test is protein based and can be used in a standard laboratory where a biochemical test can be easily run to measure the level of protein biomarkers. Importantly, this potentially makes ColoSTAT a lower cost product relative to the existing

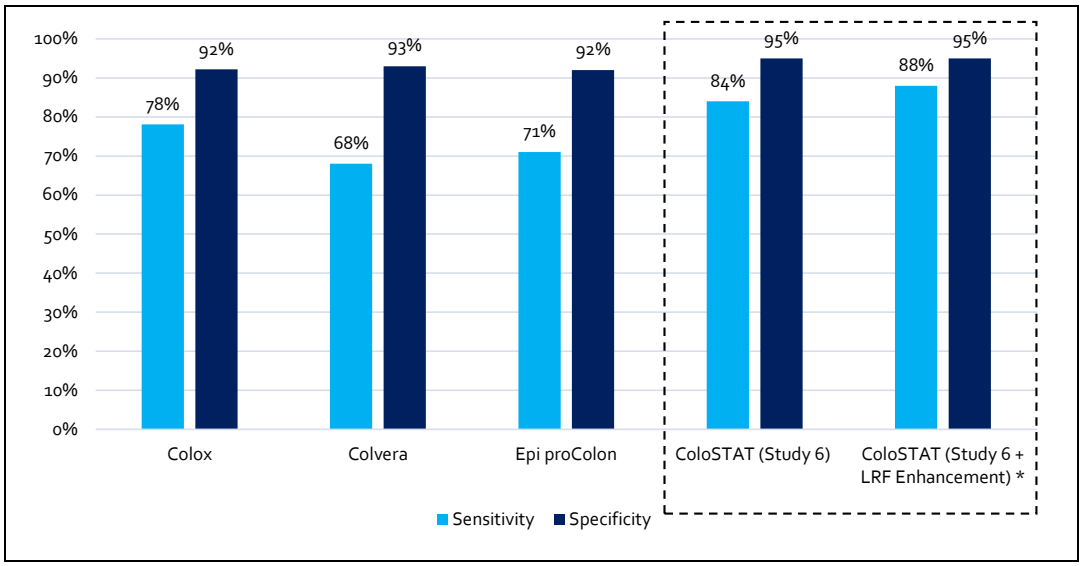
[24] https://novigenix.com/colox-colorectal-cancer-screening/
[25] https://www.genomeweb.com/molecular-diagnostics/clinical-genomics-planning-wider-launch-colvera-after-piloting-local-markets#.YDmNsHlxXIU
[26] Tepus M, Yau TO. Non-Invasive Colorectal Cancer Screening: An Overview. Gastrointest Tumors 2020;7:62–73.
[27] Peabody J, Tran M, Paculdo, Valdenor C, Burgon T and Jeter E, Establishing Clinical Utility for Diagnostic Tests Using a Randomized Controlled, Virtual Patient Trial Design, *Diagnostics* 2019, 9, 67.
[28] See Rhythm Bioscience Investor Presentation December 2020.
[29] Nelson R, Novel Blood Test Detects Precancerous Colorectal Adenomas, Medscape, 21 January 2021.
[30] https://www.practiceupdate.com/content/asco-gi-2021-high-sensitivity-blood-test-may-allow-early-detection-of-colorectal-cancer-and-precancer/112846

molecular-based tests. This cost advantage would therefore give Rhythm an opportunity to undercut some of its competitors, which we think will help Rhythm to gain market share in each of its target markets.

To potentially unseat FIT, accuracy is vital, in our view

- **ColoSTAT seems to have higher accuracy than most molecular tests**. We reinforce on the importance of accuracy when it comes to developing diagnostic products for cancer detection. We collate measures relating to sensitivity and specificity for Colox, Colvera and Epi proColon and compile them in Figure 10 for comparison against ColoSTAT's latest testing results. Clearly, ColoSTAT has the highest sensitivity value, indicating it has a higher chance of identifying patients with colorectal cancer relative to Colox, Colvera and Epi proColon. On the specificity front, ColoSTAT also exhibits the highest value which goes to show that its diagnostic tool has lowest chance of providing false positive test results. Again, accruacy is crucial as it can spare patients from the undue concern and pain brought by further unnecessary procedures or testing. In our view, ColoSTAT's comparative high accuracy would help make the product attractive to various parties ranging from governments to health insurers to hospitals/pathology labs to large cancer diagnostics companies.

Figure 10: ColoSTAT vs Colox, Colvera and Epi proColon



Source: Company websites, Gastrointest Tumors 2020, Pitt Street Research

**LRF Enhancement refers to Lifestyle Related Factors, which when factored into Rhythm's proprietary algorithm technology, can improve colorectal cancer detection performance*

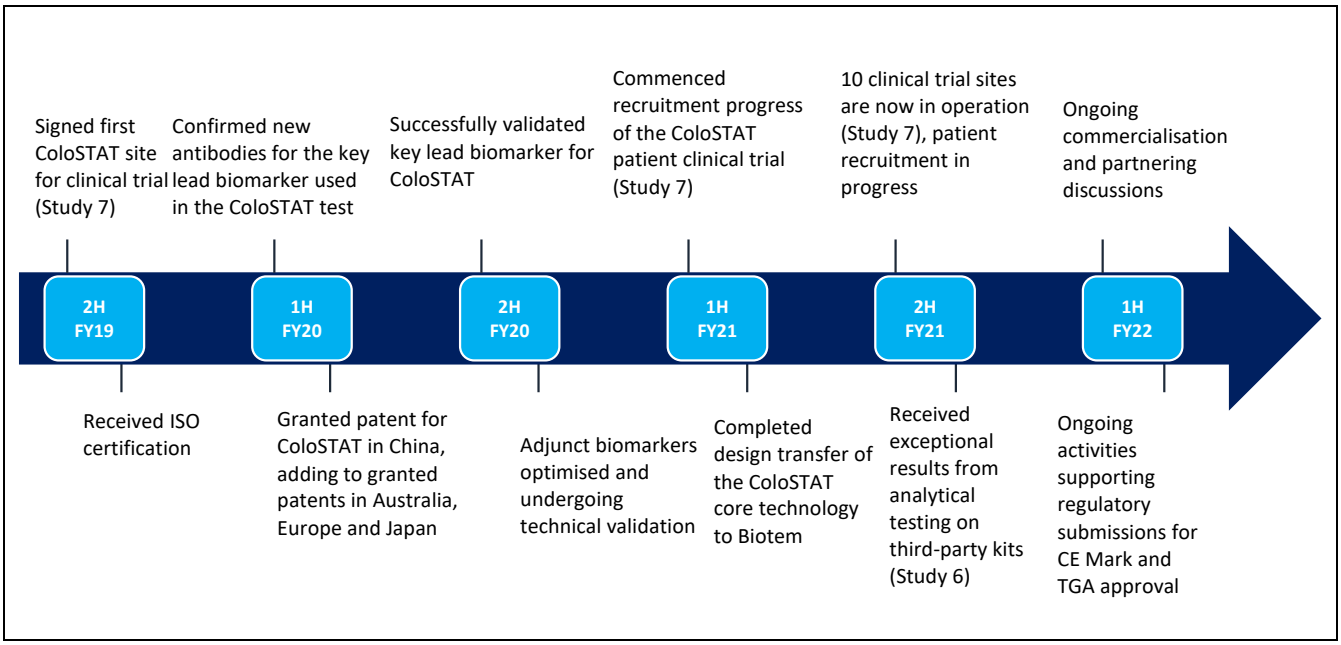
Mass-market screening requires a lower cost, higher volume product like ColoSTAT

- **ColoSTAT is best positioned for mass market screening**. Given that global national screening programs are budget sensitive, affordability becomes an issue when considering wide-scale adoption of new cancer diagnostic tools. Due to the relatively expensive nature of molecular-based tests, we believe technologies such as Colox, Colvera and Epi proColon will likely be excluded from national screening programs. By contrast, the lower cost and efficiency aspects of ColoSTAT effectively remove this cost barrier to wide-scale adoption. Coupled with its relatively high accuracy, we believe ColoSTAT is well-suited for mass-market screening.

Road to commercialisation

Since being licensed with the technology from CSIRO 3 years ago, Rhythm has come a long way in transforming this potentially life-saving technology from the research lab through the development stage. Figure 11 shows the major milestones achieved by the company over the recent years.

Figure 11: Timeline for Rhythm, 2H FY19 - 1H FY22



Source: Company, Pitt Street Research

Global manufacturer appointed to drive the scale up of ColoSTAT. France-based Biotem has been chosen to make large scale quantities of the ColoSTAT test kit. Following the technology transfer, ColoSTAT prototype test kits have been manufactured by Biotem and subsequently delivered to Rhythm for performance testing (Study 6), with full testing results having been delivered in 3Q FY21 with exceptional results.

Clinical trial patient recruitment in progress. Rhythm has reached the clinical trial stage (Study 7) for ColoSTAT. The trial study of c.1,000 patients is designed to test the performance of ColoSTAT relative to colonoscopy in a clinical setting. Currently, Rhythm has signed up 10 trial sites, with most sites recruiting patients. The company has also partnered with Accelagen[31] and Sonic Clinical Trials[32] to help manage the operational aspects of the trial study. Rhythm expects to complete patient recruitment in 2021.

Regulatory submissions are on the horizon. Subject to further GMP manufactured kits, management may consider applying for a CE Mark (Europe) before the completion of its clinical trial, Study 7. In our view, an earlier granting of a CE Mark is a key driver for commercialisation success as it could expedite business development and partnering discussions. Furthermore, the company is also determined to seek TGA and FDA approvals, the success of which should help drive its commercialisation opportunities in the Australian, US and other global markets.

[31] Formally Plunkett Consulting Group the Clinical Research Organisation.
[32] A division of Sonic Healthcare (ASX: SHL).

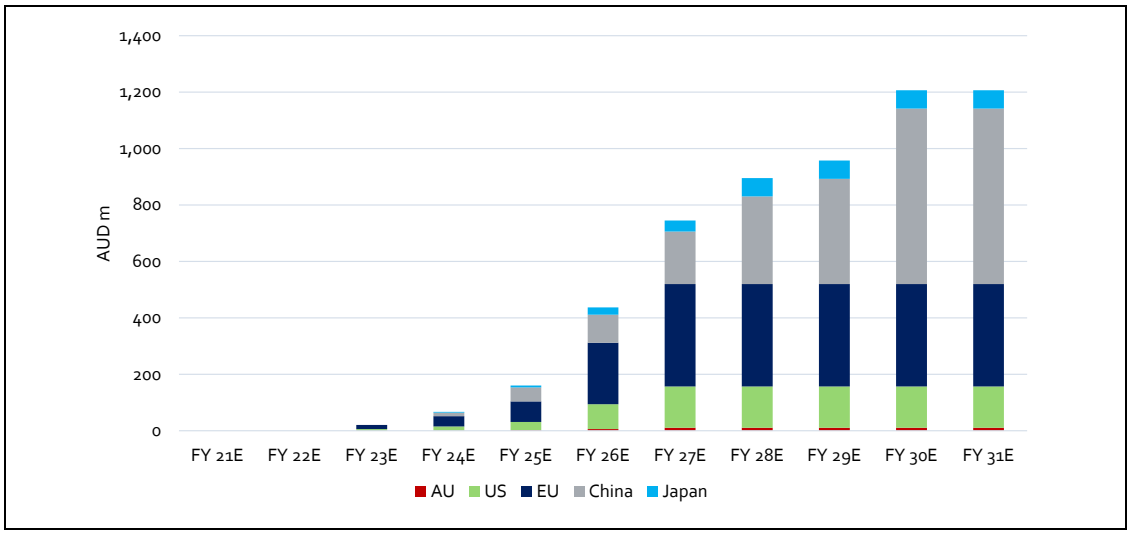
Valuation

DCF valuation range of A$1.73 – A$3.85 per share

Based on a probability-weighted DCF analysis of the ColoSTAT test kit, we value Rhythm Biosciences at A$1.73 per share base case and A$3.85 per share bull case (Figure 13). Our key modelling assumptions are detailed as follows:

- **Top-down approach**. We begin by estimating the total potential market size for ColoSTAT and derive the rest of the numbers from that top line. We select people aged between 50-74 years as the target patient group that will use ColoSTAT. We then work out the size of this patient group in each of Rhythm's target markets (Australia, US, EU, China and Japan) and apply a market penetration rate to derive our expected sales volumes for ColoSTAT. As discussed in the competitive position section of this report, we see a large likelihood for ColoSTAT to be considered as mass-market screening tool for diagnosing colorectal cancer underpinned by its lower cost, accuracy and patient friendly features. But we are also conscious of other competitors either with products in-market or in-development that also run on a blood test approach. Hence, we assume that ColoSTAT will capture 50% of its total addressable market for our base case, whilst our bull case increases this to 70%.
- **Pricing**. We utilise a ColoSTAT price of A$40 per test base case and A$50 per test bull case. In deriving our target price range for ColoSTAT, we look at the price of FIT (Figure 5) and other blood-based competitors' products (Figure 9). We also factor in ColoSTAT's own attributes which include a relatively lower cost base driven by its unique diagnostic technology.
- **Royalty on future sales**. We assume Rhythm will execute a licensing deal with a commercial partner in each of its target markets while the Study 7 is underway. As clinical study is still underway, we conservatively assume Rhythm will earn a royalty rate of 8% base case and 9% bull case on future gross sales post the 2% royalty payable to CSIRO[33]. Figure 12 shows our base case royalty revenue model for ColoSTAT during its commercial life, exhibiting global peak annual sales revenues of c.A$1.2B.

Figure 12: ColoSTAT Group Royalty Revenue, FY21E – FY31E



Source: Pitt Street Research

[33] Royalties of 2% of all gross sales revenues from sales of products are payable to CSIRO (CSIRO License Agreement). See company prospectus.

- **Operating costs**. We model R&D and SG&A expenses as our key operating cost components. We assume another A$12.5M in total operating costs for Rhythm to further advance the clinical development of ColoSTAT. After commercial launch, we model SG&A expenses to represent around 25.5% of ColoSTAT's royalty-based sales, reflecting the industry average for healthcare IT companies.[34] On the R&D front, we model it to be 15% of the test-kit's royalty-based sales to reflect both the ongoing development costs associated with further improving the algorithm used in ColoSTAT, as well as any ongoing research costs which we believe will be spent on further exploring the potential of ColoSTAT's key lead biomarker to target indications other than colorectal cancer.
- **Probability factor**. Given that ColoSTAT is still in its clinical trial stage and yet to obtain the relevant regulatory approvals, there is a chance that the test-kit will not make all the way to commercialisation. Accordingly, we adjust our future cashflows with a 50-55% probability to account for its probability of success. Should ColoSTAT continue to move through the development process (e.g., by delivering positive results from its clinical trial or by receiving early regulatory approvals), we will look to adjust our probability factor accordingly.
- **Discount rate**. We apply a discount rate of 14.4%, appropriate in our view for a 'Speculative' risk rating[35]. Rhythm is in pre-revenue phase which we see as more risky than other more commercialised Life Sciences ventures.
- **Commercialisation period**. We model 9 years[36] of commercial exclusivity for ColoSTAT, with first sales to commence in FY23, sequentially ramping up towards its full market penetration by FY26.
- **Capital**. Rhythm raised c.A$6M and received c.A$1M from R&D incentive in 1H FY21. As at the end of 1H FY21, Rhythm had c.A$6M in cash. We expect the company to be sufficiently funded to carry out its clinical study for FY21. We assume a further A$5M to be raised sometime in FY22 to take ColoSTAT through to the end of its clinical trial.

Figure 13: DCF valuation summary

Valuation (A$)	Base Case	Bull Case
PV of FCF de-risked	359.1	803.7
PV of terminal FCF	-	-
Enterprise Value (A$M)	**359.1**	**803.7**
Net debt (cash)	(3.8)	(3.8)
Equity value (A$M)	**362.9**	**807.5**
Diluted shares (M)	209.6	209.6
Implied price (A$)	**1.73**	**3.85**
Current price (A$)	0.96	0.96
Upside (%)	*80.3%*	*301.2%*

Source: Pitt Street Research

[34] Data from the website of Aswath Damodaran at the Stern School of Business at New York University.
[35] For a relevant discount rate, we use varying WACCs depending on the risk for Life Science companies. We start with an RFR of the Australian ten-year bond rate (1.7%) and an ungeared beta of 1.1 but use a variable MRP of 7.5%-11.5% (7.5% for 'medium risk' companies, 9.5% for 'high risk' companies and 11.5% for 'speculative' companies). Ordinarily we regard Life Science companies with existing businesses, or who have enough capital to reach the market with their products, as 'Medium' risk. Companies that have small revenue streams from marketed products but that are still potentially in need of capital are 'High' risk. Everything else is 'Speculative'. We have used a Speculative risk rating for Rhythm Biosciences considering it is at a pre-revenue stage.
[36] Patent expires 2031.

Unwrapping market expectations in the current share price

Since the start of 2Q FY21, Rhythm's stock has re-rated materially from $0.24 to $1.65 before trending downward to its current price of $0.96. The re-rate was driven by several fundamental developments which included the outperformance of the ColoSTAT prototype test-kit relative to FIT, the appointment of a global manufacturer as well as the granting of a US patent.

With the stock now still considerably re-rated, the question to us is whether the market expectations embedded in the current share price have exceeded what the company could potentially deliver.

Where is the market expectations?

Absent any trail/current trading multiples (due to pre-revenue stage), we can gauge market expectations by reading the current share price with reference to our DCF-derived valuation. As Rhythm's share price is currently below our DCF valuation range, it appears to us that the price-implied expectations for ColoSTAT's future market penetration and pricing fall below our expectations. For instance, the market could be pricing in a lower than 50% steady-state market penetration for ColoSTAT, meaning that the market may be currently expecting a lower number of patients to be screened by ColoSTAT over the commercialisation period relative to our base case estimate of c.1.8B patients.

Based on our analysis in this report, we believe our expectations for Rhythm's key value drivers are reasonable. Accordingly, should the company deliver to our model expectations, we believe there will likely be upward revisions in the current market expectations, the occurrence of which should translate to share price appreciation.

Further upsides to our valuation range

At this stage, we have not attempted to factor in the upside potential from an expanded patient group due to the reduction in screening age from 50 to 45. As discussed in our DCF section of this report, our market size is based on the number of people aged between 50-74. Should we expand this age bracket to 45-74 and keep the rest of our assumptions the same, an upside potential will indeed accrue to our current valuation range.

Furthermore, we note that there are additional upsides if we ascribe value to the embedded optionality from Rhythm's deeper product pipeline targeting indications other than colorectal cancer.

Putting everything in perspective, we argue that the stock's overall re-rate has not revised market expectations to a level where it is unable to be met by the company. Hence, we still see value in Rhythm at its current share price.

Catalysts for re-rating

We see the following near-term events as catalysts in potentially triggering a re-rate of Rhythm's stock towards our valuation range:

- Faster-than-expected patient recruitment to accelerate Study 7;
- Lodgement of applications to obtain early CE Mark approval;
- Securing partnerships with key sales and distribution companies; and
- Entering into partnerships with renowned diagnostic companies.

Key risks

We see six major risks for Rhythm as a company and as a listed stock:

1) **Timing risk.** Patient recruitment (Study 7) may take longer than expected, which in turn could delay our assumed timing for the commercial roll-out of ColoSTAT across Rhythm's target markets.
2) **Clinical risk**. Study 7 may miss its primary and secondary end-points.
3) **Regulatory risk**. Regulators may decline to approve ColoSTAT, even if Rhythm considers the data submitted to be adequate.
4) **Commercial risk**. Rhythm may fail to secure commercial partners for ColoSTAT.
5) **Uptake risk**. ColoSTAT may not find significant usage in the colorectal cancer screening market as other diagnostic tools come onto the market between now and the end of ColoSTAT's clinical development. If this happens, ColoSTAT might not achieve our estimated market penetration.
6) **Funding risk**. Extra funding may be required to support the clinical and commercial development of ColoSTAT, which Rhythm may not be able to secure.

Risks related to pre-revenue Life Science companies in general.

The stocks of biotechnology and medical device companies without revenue streams from product sales or ongoing service revenue should always be regarded as speculative in character.

Since most biotechnology and medical device companies listed on the Australian Securities Exchange fit this description, the 'term' speculative can reasonably be applied to the entire sector.

The fact that the intellectual property base of most biotechnology and medical device lies in science not generally regarded as accessible to the layman adds further to the riskiness with which the sector ought to be regarded.

Caveat emptor. Investors are advised to be cognisant of the abovementioned specific and general risks before buying any the stock of any biotechnology and medical device stock mentioned on this report, including Rhythm Biosciences.

Comparable companies to watch

As outlined in the competitor section of this report, we view the following list of companies as a rough comparables guide for Rhythm. Each of these companies is either currently providing or developing a blood-based test for colorectal cancer detection, though we note that the technologies being used or developed vary across most of these companies.

Epigenomics (Germany, XTRA: ECX, market cap: A$19.9M). This company's lead product is Epi proColon, a blood-based test that uses its DNA methylation biomarker known as "Septin9" to detect colorectal cancer. The company also develops and commercialises blood-based diagnostic tests across a range of other cancer indications including Epi proLung, Epi BiSKit and Hepatocellular carcinoma Blood Test.

Volition Rx (Texas, AMEX: VNRX, market cap: A$261.1M). This company is developing blood-based tests to help diagnose a range of cancer indications. On the colorectal cancer front, the company is currently developing a blood-based screening technology known as Nu.Q that detects specific biomarkers.

Novigenix (Switzerland, private company). A molecular diagnostics company that utilises liquid biopsy tests for early detection of cancer. Its colorectal cancer screening tool is called Colox, a blood-based molecular test designed to detect adenoma and early-stage colorectal cancer. Colox has been clinically validated and is currently in the market.

Clinical Genomics (Australia, private company). A life science company that develops and commercialises products for the diagnosis of colorectal cancer. It has two main products, one of which is Colvera, a blood-based test that detects tumour DNA in the blood. But it is worth noting that Colvera is used solely for the detection of recurrent colorectal cancer, whereas ColoSTAT is designed to screen patients before they become aware of colorectal cancer.

Freenome (California, private company). An AI-based biotechnology company that utilises a combination of molecular biology and machine learning to detect early-stage colorectal cancer. Its screening platform is Multiomics, which uses machine learning to spot patterns of cell-free biomarkers in the blood. The company has commenced the regulatory approval process.

Applied Proteomics (California, private company). This company develops blood-based tests that are protein-based for monitoring and early detection of disease. It offers SimpliPro Colon, a blood-based test that uses proteomic analysis to assess the risk of colorectal cancer and advanced adenoma.

CellMax Life (California, private company). This company offers a proprietary technology to detect precancer and cancer cells in blood. It has developed FirstSight, a blood-based DNA test for the early detection of colorectal cancer. The company is currently performing further studies to demonstrate that the test can be used as a population screening tool.

Appendix I – A Rhythm Biosciences glossary

Adenoma – A type of precancerous colon polyp.

Biomarker – A characteristic to measure the severity or presence of disease.

Colon polyp – Growth of tissue on the lining of the colon. Although most colon polyps are harmless, some can progress into cancer.

Colonoscopy – A visual test involving the use of a thin tube and camera called colonoscope to examine the inside of the entire colon.

FIT – Stands for Faecal Immunochemical Test, a current market standard test that aims to detect colorectal cancer by looking for the appearance of blood in stool samples.

Haemoglobin – A protein in red blood cells whose purpose is to carry oxygen throughout the body.

Nucleosome – A DNA section wrapped around a core of proteins.

Precancerous – On its way to become cancerous.

Proteomic – A branch of molecular biology that involves a large-scale study of proteins.

Sensitivity – A performance criteria that measures the ability of a diagnostic test to correctly identify study subjects with cancer, also known as true positive rate.

Specificity – A performance criteria that measures the ability of a diagnostic test to correctly identify study subjects without cancer, also known as true negative rate.

Appendix II – Capital structure

As of 20 April 2021	In million	% of fully diluted	Note
Ordinary fully paid shares	202.2	96.4%	
Options	7.5	3.6%	In-the-money options (exercise price 20 cents, expiring 14 Sep 2023)
Fully diluted shares	**209.6**		

Source: Company

Appendix III – Rhythm's management team

We see a strong leadership team who are capable to transform Rhythm into a global cancer diagnostics technology business:

- **CEO Glenn Gilbert** brings over 17 years of experience in the healthcare sector, with significant expertise in strategy, manufacturing and sales. He has held various leadership roles at many healthcare companies including Seqirus, a CSL company, and Medical Developments International.
- **The Rhythm board** has an established set of skills crucial in building a cancer diagnostics technology company.
- **Chairman Otto Buttula** brings significant financial services and biotech experience. He was the co-founder and CEO of IWL, an online financial services company that listed on the ASX in 1999 and grew from a market capitalisation of $48M before taken over by CBA in 2007 for $373M. He also founded Investors Mutual and was the Managing Director of the company. More recently, he held a directorship at Imugene.

- **Trevor Lockett** is a Technical Executive Director having extensive research experience in prostate cancer gene therapy, colorectal cancer prevention and the promotion of gastrointestinal health. His experience was mainly honed at the CSIRO. And he oversaw the ColoSTAT research journey.
- Non-Executive Directors include **Lou Panaccio, David White** and **Eduardo Vom**. Lou currently serves on the boards of ASX-listed companies Sonic Healthcare and Avita Medical. David brings expertise in marketing, medical device sales and commercialisation of diagnostic technologies. And Eduardo is an accomplished entrepreneur who is the co-founder of Planet Innovation, a technology development and commercialisation company.

Appendix III – IP position

Rhythm's core intellectual property relates to the following published patent:

WO/2012/006681, *Diagnostic for colorectal cancer,* priority date 14 July 2010, invented by Leah Cosgrave, Bruce Tabor, Tony Burgess and Edouard Nice.

– This patent application relates to determining the presence and/or level of biomarkers for detecting or diagnosing colorectal cancer. It also relates to diagnostic kits comprising reagents for determining the presence and/or level of the biomarkers and methods of detecting or diagnosing colorectal cancer.

– Applications for the patent have been filed in all major markets. As of the date of this report, they have been granted in Australia, US, UK, Europe, China and Japan. Applications are currently pending in Brazil and India.

Appendix IV – Major shareholders

As at 28 January 2021, Rhythm's top 5 shareholders are:

- Webinvest Pty Ltd (8.27%)
- Newfound Investments Pty Ltd (5.33%)
- Ferndale Securities Pty Ltd (5.16%)
- Loumea Investment Pty Ltd (4.92%)
- Northern Star Nominees Pty Ltd (3.57%)

Appendix V – Analyst's qualifications

Cheng Ge, lead analyst on this report, is an equities research analyst at Pitt Street Research.

- Cheng obtained a B.Com in Finance and LL.B from University of New South Wales, in 2013, and has passed all three levels of the CFA Program.
- Before joining Pitt Street Research, he has worked for several financial services firms in Sydney, where his focus was on financial advice.
- He joined Pitt Street Research in January 2020.

Stuart Roberts has been covering the Life Sciences sector since 2002.

- Stuart obtained a Master of Applied Finance and Investment from the Securities Institute of Australia in 2002. Previously, from the Securities Institute of Australia, he obtained a Certificate of Financial Markets (1994) and a Graduate Diploma in Finance and Investment (1999).
- Stuart joined Southern Cross Equities as an equities analyst in April 2001. From February 2002 to July 2013, his research specialty at Southern Cross Equities and its acquirer, Bell Potter Securities, was Healthcare and Biotechnology. During this time, he covered a variety of established healthcare companies such as CSL, Cochlear and Resmed, as well as numerous emerging companies. Stuart was a Healthcare and Biotechnology analyst at Baillieu Holst from October 2013 to January 2015.
- After 15 months in 2015 and 2016 doing Investor Relations for two ASX listed cancer drug developers, Stuart founded NDF Research in May 2016 to provide issuer-sponsored equity research on ASX-listed Life Science companies.
- In July 2016, with Marc Kennis, Stuart co-founded Pitt Street Research Pty Ltd, which provides issuer-sponsored research on ASX-listed companies across the entire market, including Life Science companies.

Profit & Loss (A$m)	FY 19A	FY 20A	FY 21E	FY 22E	FY 23E	FY 24E	FY 25E
Royalty revenue	**-**	**-**	**-**	**-**	**20.8**	**67.0**	**160.2**
Operating expenses	(3.6)	(4.0)	(5.2)	(7.3)	(8.4)	(27.1)	(64.8)
EBITDA	**(3.6)**	**(4.0)**	**(5.2)**	**(7.3)**	**12.4**	**39.9**	**95.4**
Depn & Amort	(0.1)	(0.1)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
EBIT	**(3.7)**	**(4.2)**	**(5.2)**	**(7.3)**	**12.3**	**39.9**	**95.3**
Other income/loss	1.0	0.1	1.1	-	-	-	-
Net interest expense	0.1	0.0	0.0	0.0	0.0	0.1	0.2
Profit before tax	**(2.5)**	**(4.0)**	**(4.1)**	**(7.3)**	**12.3**	**39.9**	**95.5**
Tax expense	-	-	-	-	(1.1)	(12.0)	(28.6)
Profit after tax	**(2.5)**	**(4.0)**	**(4.1)**	**(7.3)**	**11.2**	**28.0**	**66.9**

Cash Flow (A$m)	FY 19	FY 20A	FY 21E	FY 22E	FY 23E	FY 24E	FY 25E
Profit after tax	(2.5)	(4.0)	(4.1)	(7.3)	11.2	28.0	66.9
Depreciation	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Other operating activities	(0.5)	1.1	0.4	0.4	0.4	0.4	0.4
Operating cashflow	**(2.9)**	**(2.7)**	**(3.7)**	**(6.9)**	**11.7**	**28.4**	**67.4**
Capex	(0.1)	(0.0)	(0.1)	(0.1)	(0.0)	(0.0)	(0.1)
Other investing activities	-	-	-	-	-	-	-
Investing cashflow	**(0.1)**	**(0.0)**	**(0.1)**	**(0.1)**	**(0.0)**	**(0.0)**	**(0.1)**
Dividends	-	-	-	-	-	-	-
Equity raised (repurchased)	-	-	6.0	5.0	-	-	-
Debt drawdown (repaid)	-	(0.1)	-	-	-	-	-
Other financing activities	-	(0.1)	(0.2)	(0.2)	-	-	-
Financing cashflow	**-**	**(0.1)**	**5.8**	**4.8**	**-**	**-**	**-**
Net change in cash	(3.1)	(2.9)	2.1	(2.1)	11.7	28.4	67.3
Cash at End Period	4.7	1.8	3.9	1.7	13.4	41.8	109.0
Net Debt	(4.7)	(1.8)	(3.8)	(1.7)	(13.4)	(41.7)	(109.0)

Balance Sheet (A$m)	FY 19	FY 20A	FY 21E	FY 22E	FY 23E	FY 24E	FY 25E
Cash	4.7	1.8	3.9	1.7	13.4	41.8	109.0
Total Assets	6.2	2.6	4.9	2.9	14.6	43.0	110.5
Total Debt	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Liabilities	0.4	0.8	1.3	1.8	2.3	2.8	3.3
Shareholders' Funds	5.8	1.8	3.6	1.0	12.3	40.2	107.2

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