# Destiny Pharma plc

## Well-funded and on track for Phase IIb

27 April 2018

**Destiny Pharma (DEST) is delivering the clinical plan for its novel antimicrobial candidate XF-73 (exeporfinium chloride) on target. The initial focus for DEST is in the US where XF-73 has been granted Fast Track Designation by the FDA in the new indication of 'Prevention of post-surgical Staphylococcal infection'. The Fast Track supports speedy development of drugs to prevent life-threatening disease.**

Early studies encouragingly showed that *Staphylococcus aureus* (*S aureus)* **did not generate resistance** to XF-73 after multiple exposures. There are currently no approved drugs for Prevention of post-surgical staphylococcal infection and few late stage candidates: so **XF-73 could be first to a primary addressable market worth up to $1.2bn.** Anti-Microbial Resistance (AMR) is a major limiting factor with standard antibiotic treatments meaning that the low potential for resistance to XF-73 could also support **wider adoption**, potentially tripling the core patient pool.

Following the recent Investigational New Drug (IND) opening, XF-73 is due to enter Phase IIb studies which should lead to data readout in H219. Destiny recently clarified the development plan for XF-73, which has already been trialled in 166 subjects over the course of five Phase I/II studies, detailing the standard safety studies required by FDA. In our view the three Phase I dermal safety studies detailed represent a relatively low risk hurdle towards completing the Phase III ready package.

If the efficacy and safety profile is borne out, and given the dearth of late stage novel treatments and the ongoing threat of AMR, XF-73 would represent a valuable, late-stage, de-risked asset attractive to prospective development and commercial partners.

The terms of Destiny's December commercialisation and development agreement with **China Medical Systems** (CMS) included exchange of Asian rights (ex-Japan) in return for a £6m equity stake and data sharing. This validates the XF platform clinical and commercial potential and could help Destiny to accelerate the development of XF-73 and the earlier stage products. **China is the world's second largest consumer of antibiotics** so it has a crucial role in managing the threat of AMR - which the Wellcome Trust estimates 'could cause 1 million premature deaths annually by 2050 and cost the country $20 trillion.'

End of December 2017 cash and equivalents stood at £16.7m following the £15.3m gross placing at 157p, and a further £3m investment in 1.9m shares by CMS, giving a runway to the end of 2020 in our estimates, **sufficient to fund XF-73 to the end of Phase II**. We make no change to forecasts, recognising that R&D spend could shift depending on the final timing of the safety studies for XF-73, but judging that this has little effect on the overall cash reach.

Our sum-of-parts DCF valuation of Destiny Pharma, using a 12.5% drug development discount rate, rises slightly to give **a current worth of £117m (269p/share)** after rolling our forecasts forwards and updating for end December 2017 cash. The current market cap implies a low probability of success in the lead program, despite the up to twofold likelihood of success in anti-infection indications vs the average rate. Such a valuation therefore appears an attractive entry point ahead of Phase IIb trial start.

**Company Data**

| EPIC | AIM:DEST |
|---|---|
| Price (last close) | 126p |
| 52 week Hi/Lo | 235p / 112p |
| Market cap | £56m |
| ED valuation / share | 269p |

**Share Price, p**

*Source: ADVFN*

**Description**

Destiny Pharma plc (Destiny) is a UK based clinical stage developer of medicines for the prevention and treatment of infections caused by drug-resistant bacteria.

There are four XF Drug pipeline products in development, the most advanced is on track to complete Phase IIb studies in 2019 for the Prevention of postsurgical Staphylococcal infection.

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## A novel approach to infection and resistance

Destiny is delivering on its clinical plan for the lead antimicrobial XF-73, the first from its portfolio of innovative pipeline which is being developed in a new FDA backed indication, Prevention of post-surgical Staphylococcal infection. There are no approved drugs in this indication and few late stage candidates so that XF-73 could be first to a primary addressable market worth up to $1.2bn.

The XF drug series is based on **a novel chemical class** which offers the potential to kill bacteria rapidly via mechanisms that differentiate the pipeline from standard antimicrobial treatments, notably antibiotics. In fact, early stage studies to date with the lead program XF-73 suggest that antimicrobial resistance (AMR), the chief treatment-limiting factor associated with antimicrobial drugs such as antibiotics, is avoided with XF-73 even after multiple exposures to the product.

**XF series**

| Product / Indication / Mode of delivery | Development Status |
|---|---|
| XF-73/Prevention of post-surgical Staphylococcal infection/Intra-nasal | Phase IIa data/ Phase I safety studies ongoing, Phase IIb completion expected H219 |
| XF-73/Prevention of hospital/ventilator-associated Staphylococcal pneumonia/Throat | Pre-clinical |
| XF-70/Treatment of skin burn wound infections of antibiotic resistant bacteria/Dermal | Pre-clinical |
| XF-70/Treatment of bacterial biofilm infections/Lung | Early pre-clinical |

*Source: Destiny Pharma*

Destiny Pharma is developing a portfolio of drug candidates in this area of very high unmet need which demonstrate a wide spectrum of antimicrobial activity. Collectively, the XF products have demonstrated preclinical **efficacy against eight out of twelve cited** on the most threatening pathogens from the World Health Organisation WHO R&D priority list.

**XF drugs demonstrate a broad range of activity**

| Gram-positive | Gram-negative |
|---|---|
| *Staphylococcus aureus** | *Acinetobacter baumannii** |
| *Propionibacterium acnes* | *Pseudomonas aeruginosa** |
| | *Mycobacterium tuberculosis** |
| *Bacillus anthracis** | *Yersinia pestis** |
| *Clostridium difficile** | |
| *Listeria monocytogenes* | |
| *Group G Streptococcus* | |
| *Streptococcus pneumoniae** | |

*Source: Destiny Pharma taken from preclinical studies *Pathogen is an R&D priority*

While healthcare providers across the globe have made progress in reducing healthcare-acquired infection, through increased awareness of the role of antimicrobial treatments in perpetuating disease and stewardship of antibiotics for example, **there remains a persistent shortage of new and effective treatments to overcome drug resistant bacteria.**

Furthermore, the economic burden caused by antibiotic-resistant infections in the US has been estimated to be as high as **$20 billion**[1] and c 15% of people in the US who contract methicillin-resistant *Staphylococcus aureus* MRSA related infections each year die as a result according to the CDC.

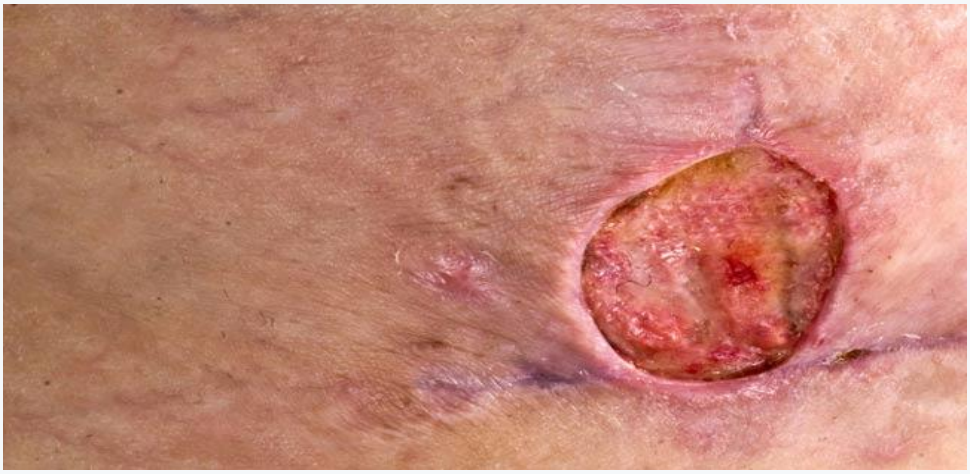
In a healthcare location, such as a hospital or nursing home, MRSA can cause severe problems such as bloodstream infections, pneumonia and surgical site infections. If not treated quickly, MRSA infections can cause sepsis and death (*www.cdc.gov*).

In the postoperative setting, the risk of contracting MRSA is significantly raised. The symptoms of MRSA infection include boils or abscesses, foul smelling and painful wound sites, fever or chills and redness. The risk factors for contracting infection include:

- Length and type of surgery - more invasive procedures over two hours being higher risk;
- Age, smoking status and diabetes;
- Having a compromised immune system.

The incidence of *S aureus* is linked to a high of **42% greater risk of mortality**[2] while extended **hospital stays of up to 130% longer** for patients with *S aureus* contribute to the excess cost burden of care.

**Example of MRSA infection**



*Source: Healthline.com*

One study[3] showed that in 82.2% of MRSA infections the *S aureus* originated from the patients themselves, transmitting the bacteria into their own bloodstream.

**Other analyses show that about one in three people carry *S aureus* in their nose, usually without harm, while two in 100 people carry MRSA – up to a third of carriers**

[1]The Antibiotic Resistance Crisis

[2]Postoperative *Staphylococcus Aureus* Infections in Medicare Beneficiaries; 2014 Razavi et al PLOS One

[3] Nasal carriage as a source of *Staphylococcus aureus* bacteremia. Study Group in NEJM – von If et al.

**go on to develop surgical site infection (SSI).** *S aureus* has been shown to be responsible for >60% of SSIs.[4]

Conclusions drawn over the course of five clinical studies and a range of preclinical studies with the lead candidate XF-73 - which is a topical gel for nasal administration - are that it demonstrates mechanisms that:

- Present rapid and potent bacterial kill taking effect within minutes;
- Show sustained efficacy against MRSA, seen in preclinical studies, resistance did not develop even after 55 exposures to XF-73;
- Are effective against all types of Gram-positive bacteria tested including *S aureus* and its drug resistant form MRSA, and with activity against certain strains of Gram-negative bacteria;
- Act at all stages tested, including during dormancy, growth period, and in drug-resistant Biofilms;
- Act to weaken and disrupt bacterial cell walls leading to cell death, without causing lysis (breaking down the cell wall).

Provided that follow-on studies are consistent, these properties and mechanisms offer exciting potential for the XF products to meet the urgent unmet need for new antimicrobial drugs that cover a broad spectrum of bacteria.

## Delivering on the clinical timetable for XF-73

Destiny is executing its clinical plan for its novel antimicrobial candidate XF-73 **in line with its established objectives.**

- Following the recent Investigational New Drug (IND) opening, XF-73 is due to enter a Phase IIb study which is anticipated to lead to data readout in H219. Fast track designation is one of a range of incentives granted under Qualified Infectious Disease Product (QIDP) status granted to XF-73. QIDP status supports the development of drugs against priority pathogens, such as *S aureus*, including - MRSA.
- Fast track designation supports development of drugs to prevent life-threatening disease where there is an existing high unmet need, by providing potential for greater interaction with the FDA review team throughout the stages of clinical development, including discussions on study design and data requirements. Ultimately, this could lead also to priority review of the resulting New Drug Application (NDA) and if efficacy data are borne out, an opportunity to submit portions of data for a rolling review which could expedite the approval process.

Destiny recently clarified the development plan for XF-73 as a result of its discussions with the FDA detailing the safety studies required by FDA, as standard for all topical drugs. XF-73 has already been trialled in 166 subjects over the course of five Phase I/II studies.

[4] Nasal carriage of *S aureus* increases the risk of surgical site infection after major heart surgery in Journal of Hospital Infection 2008 Munoz et al.

The resulting data will be used to complete the Phase III ready package and to support other dermatology indications of XF-73. The Phase I studies are:

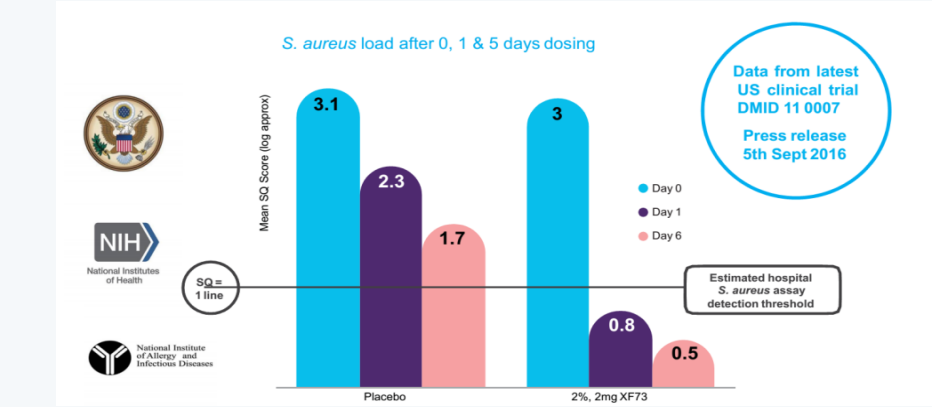
- A Phase I dermal safety study in skin irritation of XF-73 solution in up to 30 subjects- which is already underway at specialised unit;
- A Phase I dermal safety study skin irritation in 30 subjects of XF-73 nasal gel – to be completed prior to Phase IIb trial start;
- A further Phase I dermal sensitisation study in up to 200 subjects is required by FDA before commencement of Phase III trials. Destiny plans to complete this study in 2019 in parallel with the Phase IIb trial, and so this is unlikely to impede the current timeline plan for XF-73.

## Funded to completion of Phase III-ready package

Subject to confirmation of the established safety profile of XF-73, the Company is preparing to start a placebo-controlled study of XF-73 to measure its efficacy in up to 150 patients undergoing surgical procedures who are carriers of *S aureus* – with Phase IIb readout anticipated in H219. The adoption of a placebo control is appropriate since there are **no topical antibiotics approved** for prevention of auto-infection of post-surgical staphylococcus in the US. The Phase IIb endpoint will be microbiological, that means the load of *S aureus* in the nasal passages will be measured before and after exposure to the drug, as in the previous studies, rather than measuring a clinical outcome such as subsequent infection transmission rate.

In fact, the trial design is likely to be similar to the one adopted in the National Institute of Allergy and Infectious Diseases NIAID sponsored Phase I study of XF-73. The study was entitled 'A Two-Part Phase I Study to Establish and Compare the Safety and Local Tolerability of Two Nasal Formulations of XF-73 for Decolonization of *Staphylococcus Aureus*: A Previously Investigated 0.5 mg/g Viscosified Gel Formulation versus a Modified Formulation'. The Phase I study showed immediate bactericidal effect after two doses of XF-73 administered on day one.

**XF-73 shows rapid effect against MRSA in NIAID-sponsored trial**




*Source: Destiny Pharma*

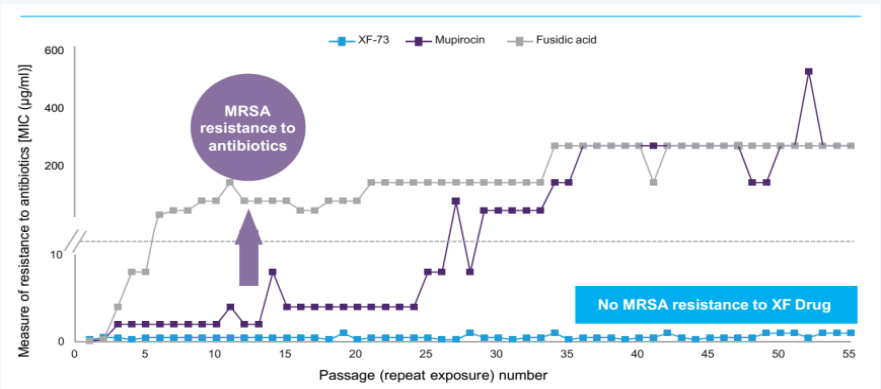
## The strong clinical rationale of XF-73

The rationale for XF-73 in the infection prevention setting is compelling given the high unmet need for an approved treatment that fits into well-established and recommended hospital anti-infection protocols. Decolonisation is recommended by WHO guidelines.

The rationale for nasal decolonisation of *S aureus* prior to surgery stems from evidence that this cuts the subsequent rate of auto-infection. There is currently widespread off-label use of the topical intranasal antibiotic mupirocin, **which is not approved by the FDA in the prevention setting.** The topical antibiotic is frequently used in conjunction with screening and disinfectant scrubs prior to surgery to prevent post-surgical infection.

The risk of AMR to mupirocin is recognised as a limiting factor restricting use and efficacy. Whereas an earlier study showed that bacteria including MRSA did not develop resistance to XF-73 after 55 passages, offering promise of its widespread applicability.

**Durable effect of XF-73 – no resistance after 55 exposures to MRSA**




*Source: Investigation of the potential for mutational resistance to XF-73, retapamulin, mupirocin, fusidic acid, daptomycin and vancomycin in MRSA isolates during a 55 Passage Study, Farrell et al, Antimicrobial agents and Chemotherapy 2011.*

## Broad commercial potential of XF-73

Our calculation of the size of the market for primary market for XF-73 of **c $1.2bn** – based on the six million patients classed as high risk, using data from US National Center for Health Statistics, who are also carriers of *S aureus*. Around one in three people are carriers of nasal *S aureus*. We are using the cost of the five-day course of mupirocin of $200 as a benchmark for XF-73 pricing.

In our view, the low potential for resistance development means that XF-73 should also be widely adopted for the remaining c 12 million high-risk non-carriers of *S aureus* particularly in view of its rapid action on day one as opposed to five-day dosing required with mupirocin.

For this reason, we view that there will also be take-up of XF-73 in the emergency surgery cases where immediate action is a clear advantage.

There appears to be limited competition in later stage pipelines in the preventative space and, with no approved drugs in the US, XF-73 could set a new standard and therefore gain first mover advantage in nasal decolonisation of S aureus.

**DEST is funded from its existing capital to execute its current plans and to complete the Phase IIb program**, including the expense of the Phase I safety studies detailed.

The estimated cost of £8.5m would allow Destiny to build a Phase III-ready package for XF-73. If the efficacy and safety profile is borne out, we view that given the dearth of late stage novel treatments and the ongoing threat of AMR, this would represent a valuable, late-stage, de-risked asset attractive to prospective development and commercial partners.

Although to date the focus has been on XF-73 in the US, Destiny has a **patent protected pipeline** which includes three follow-on preclinical programs, illustrating the versatility of the platform in additional large areas of unmet need.

In addition, the collaboration agreement with China Medical Systems, struck in December 2017 not only a strategic partner and shareholder since flotation, also provides Destiny the benefit of a capital injection of £6m to date, the opportunity for strategic collaboration with an expert partner and the synergies of clinical data sharing.

## CMS tie-up cements financial and clinical strategy

In December 2017, Destiny Pharma confirmed the key elements of its Regional Development and Commercialisation framework agreement with a wholly owned subsidiary of Hong Kong listed China Medical Systems Holdings. On finalising the agreement, CMS made a further £3m equity investment in Destiny Pharma shares (added to its £3m investment in the £15.3m September placing) taking its share ownership to 8.77% of the enlarged share capital.

Under the agreement, Destiny granted full rights to its pipeline of drug candidates to CMS in China and other Asian countries excluding Japan and CMS will pursue development and commercialisation of these. CMS will cover all development costs within these countries. CMS is a well-established participant in the vast Chinese pharmaceuticals market valued at over $100bn and forecast to grow at up to 20% per annum over the next five years.

The key elements of the collaboration with CMS which brings many strategic and financial benefits for Destiny are as follows:

- CMS has the rights to develop, manufacture and commercialise all the XF pipeline candidates in a specific set of Asian countries – (the CMS Territory includes China, Macau, HK, Taiwan, Thailand, Malaysia, Indonesia, Philippines and India). Destiny retains rights for Japan.
- CMS will be responsible for all research and development in these territories and both parties will share data and collaborate on the overall development plan for XF candidates, by means of a Joint Steering Committee set up at the time of the deal.
- Under the agreement, Destiny will receive a manufacturing margin on product supplied for commercial sale as well as a milestone payment in relation to sales made by CMS.
- Dr Huaizheng Peng, General Manager of International Operations at CMS, was appointed to Destiny Pharma's Board of Directors. Dr Peng brings depth of experience in pharmaceutical licensing and business development as well as knowledge of London capital markets through his experience as corporate financier and asset manager.

## China looks for innovation to tackle AMR

Hong Kong listed CMS has a market capitalisation of $5.9 billion and is an investment holding company which produces and commercialises pharmaceuticals in mainland China.

CMS has core expertise in developing and commercialising pharmaceuticals in China and has a portfolio of 19 core products which accounted for over 95% of its FY17 revenue of $840m, and held end of December 2017 cash and equivalents of around $136m. CMS has a direct network reaching 47,000 hospitals and medical institutions and a third-party network extending to 510 agents across over 9,600 hospitals and institutions across China. The Chinese pharmaceuticals market rests firmly on hospitals which dispense over 80% of prescribed pharmaceuticals.

**China is entering an era of radical healthcare reform**, driven by greater demand for access to quality healthcare, greater efficiency and improved access to prescription pharma products for its population of 1.4bn people.

At the same time, CMS holds a dominant position with extensive commercial reach and strong balance sheet. In parallel, it appears very well positioned to take advantage of the China Government's ongoing drive for innovation and quality improvement, partly by increasing the volume of prescribed patented, as opposed to generic pharmaceuticals, currently split around 30:70. While the rate of progress is accelerating and academic output from China is increasing at unprecedented levels, for now, China seeks to bolster pipelines by in licensing innovative drugs from overseas by means of the China Imported Drug License (IDL) pathway. The IDL route enables imported pharmaceuticals to be marketed in China although CFDA requires bridging studies to be conducted prior to launch.

Furthermore, China is the world's second largest consumer of antibiotics so it has a crucial role in managing the threat of AMR. The Wellcome Trust estimates that **'AMR in China could cause 1 million premature deaths annually by 2050 and cost the country $20 trillion.'** As a response to the WHO call for action to tackle AMR Chinese Government issued a five-year action plan in 2016 detailing strategies and targets both in terms of innovation, surveillance and antibiotics stewardship and promoting greater control on the use of antibiotics for both human and veterinary use.

## Analysing the deal dynamics

The acquisition of rights to the Destiny pipeline by CMS is in line with its strategy of in-licensing and developing high quality, innovative products with significant commercial potential to enhance its pharmaceuticals portfolio, in parallel with its aim to further strengthen its already very extensive commercial networks.

- In our view, the deal not only provides strong synergies for Destiny, but validates the existing clinical evidence on the XF pipeline and the very broad commercial potential of XF antimicrobials given the low propensity to generate AMR. **Asia has an acute need for drugs to help combat AMR** with *S aureus* the number one, gram positive pathogen threat identified by China AMR Surveillance System.
- The CMS deal further validates the market potential of the XF drug pipeline as well as its innovative nature and 'high academic value'. It also underlines the versatility of the platform with follow on programs in respiratory, dermatology and ophthalmology indications.

Furthermore, we think that such products would enable CMS to leverage its very strong commercial networks due to the apparent synergies with emergency room and in the core hospital products market.

Looking in more detail at the deal structure which is unlike a typical pharmaceutical licensing arrangement: this is the second deal of its type done by CMS, following on from its 2015 strategic tie up with AIM-listed Faron Pharmaceuticals (FARN).

CMS acquired Asia development and commercialisation rights to acute respiratory distress syndrome (ARDS) treatment Traumakine through that deal, which at the time was a Phase II candidate. A&B Ltd, a development company led by the CEO of CMS, Lam Kong, invested €5m in FARN equity at the time. Like XF-73, Traumakine is a potential blockbuster drug in current development markets according to market estimates; ARDS leads to a mortality rate over 50% in China according to CMS and there are few existing treatment options.

CMS' ability to commercialise products successfully is demonstrated by a 39% like-for-like increase in Plendil revenues in FY17 $204m after its acquisition of commercial rights to the hypertension drug from AstraZeneca in February 2016 for $310m. Plendil was previously approved in China in 1995. For now, we view that the core benefits of the agreement between Destiny and CMS include the value of data sharing and collaboration on an overall development plan with limited visibility on approval timelines and order of priority and on subsequent milestone payments from CMS – although we shall look to reassess this if more detail is clarified.

CFDA rules are constantly evolving and subject to little visibility, but the existing framework means that CMS will follow the procedures of the China Imported Drug License (IDL) pathway and utilise data from overseas trials towards the regulatory approval in the country. This will require it to conduct a regional trial prior to approval. The synergies mean that Destiny can benefit from any data generated by CMS to help inform its own clinical development plan.

**The opportunity to share data with CMS, which will fund all development costs in the Asian territories, means their input and insight can help Destiny to accelerate the development of XF-73 and for the earlier stage candidates in its portfolio.**

## Valuation

**Our valuation of 269p / share, net of Phase II trial costs, includes only XF-73 for now** since this is the only clinical stage program, and well set to deliver a FDA-backed Phase IIb study in 2019 for the Prevention of post-surgical Staphylococcal infection.

The required Phase I safety studies appear to present a relatively low risk given that there is already a considerable body of clinical safety data built over the course of five clinical studies in 166 subjects with XF-73.

We have included **only the US** opportunity at present, so that when Destiny confirms its approach for other territories and as the early stage pipeline advances into clinical studies, these factors can provide potential upside to our current valuation.

Our assumptions are that Destiny will look for a development and commercial partnership post Phase II, based on its strategy of putting together a phase III-ready package. Destiny would subsequently earn royalties on ensuing sales of XF-73.

Given the dearth of late stage antimicrobial programs, in our view if follow on studies show sustained efficacy, XF-73 would have a very high probability of attracting a partnership. We use a standard Phase II royalty rate of 15% and our assumptions include a five-year ramp to peak, 2022 launch and patent term extension into 2035.

**DCF Valuation**

| | £m | Per share, p |
|---|---|---|
| XF-73 prevention of post-surgical infection, *S aureus* carriers, US | 71.0 | 163.0 |
| XF-73 prevention of post-surgical infection, Universal Decolonisation, US | 29.5 | 67.7 |
| XF-73 Universal Decolonisation in emergency surgery cases, US | 6.0 | 13.8 |
| Corporate expenses | -6.2 | -14.3 |
| Net cash (end 2017) | 16.7 | 38.4 |
| Number of shares (43.6m) | | |
| **Total** | **117.0** | **268.6** |

*Source: Equity Dev. NB rNPVs net of 20% taxation and risk adjusted Phase IIb R&D expenses*

## News flow to watch for includes:

- Potential announcements on clinical trials with XF-73 – including Phase I safety data and initiation of the Phase IIb study;
- Entry of preclinical products into clinical studies;
- External news about policy led incentives or FDA guidance on accelerated development pathways to help combat AMR.

# Financials

In FY17, administration expenses reached £2.5m (ED estimate £2.6m)including R&D expenses of £0.8m, £0.5m of exceptional IPO costs. The company qualifies for tax credit in respect of R&D activities and expects to receive a payment of £0.2m taking overall FY17 net loss to £3m.

At end of December 2017 cash and equivalents stood at £16.7m following the £15.3m gross placing at 157p, and a further £3m investment in 1.9m shares by CMS.

Looking forwards, we maintain our existing operating cost forecasts, but recognise that the balance could shift depending on the final timing of the larger safety study for XF-73 but judge that this has little effect on the overall cash reach. These costs include £8.6m and £4.7m in FY18/19 respectively on R&D activities to cover the internal and external costs of the lead program and follow on programs taking XF-73 through to the end of Phase IIb only.

G&A costs are forecast to rise to £1.9m, £1.7m and £1.3m from FY18-FY20 to cover planned investment in regulatory and market research work.

We forecast that R&D tax credits received will rise in line with levels of R&D spend up to £2m, £1.1m and £0.4m over 2018, 2019 and 2020 respectively. Our estimate is that Destiny will end December 2018 with £7.7m of net cash and equivalents and that existing capital provides a runway to the end of 2020.

## Sensitivities

While Destiny has already accumulated a broad range of safety and efficacy data on the lead product, the company is subject to the typical risks affecting clinical biotech companies including the risk of delays in recruiting and executing clinical trials or changes in the regulatory rules.

On a broader basis, the timely and optimal conditions for taking its products to approval also depend on a favourable economic outlook and the translation of new legislation such as the Cures Act into streamlined approval processes.

We view that while the Company is well-funded now to take XF-73 right through to the end of Phase II studies in the lead indication, the strategy is dependent on achieving a partnership after that stage. If study data show a consistent profile, the probability of attracting a deal appears to be high given the commercial potential of the lead product, and the low propensity for resistance is a key benefit.

For the other products in the pipeline, additional funding or again a partner is needed realistically to get them all off the ground and in the smaller follow on indications, non-dilutive grant funding, collaborations and/or orphan status would help to accelerate development.

As always, adoption of new products can be slow and the pace of acceptance would be affected by buy-in from key opinion leaders. Good safety profile, speed of efficacy and low resistance profile are all factors that could help encourage adoption.

## Income Statement

| Year-end: Dec 31, £'000s | 2016 | 2017 | 2018e | 2019e | 2020e |
|---|---|---|---|---|---|
| Revenues | 0 | 0 | 0 | 0 | 0 |
| R&D Expenses | -496 | -800 | -8646 | -4669 | -934 |
| G&A Expenses | -753 | -1712 | -1891 | -1701 | -1276 |
| Sales & Marketing | 0 | 0 | 0 | 0 | 0 |
| Operating Loss | -1249 | -2512 | -10537 | -6370 | -2210 |
| Share based payments | -201 | -710 | -568 | -557 | -545 |
| EBITDA | -1448 | -3220 | -11096 | -6912 | -2736 |
| Operating Loss | -1450 | -3222 | -11105 | -6927 | -2755 |
| Interest income | 0 | 10 | 23 | 5 | -5 |
| Other financing costs/income | 0 | 0 | 0 | 0 | 0 |
| Exceptionals | 0 | 0 | 0 | 0 | 0 |
| Loss Before Taxes | -1449 | -3211 | -11081 | -6921 | -2760 |
| Adj. Loss Before Taxes | -1249 | -2501 | -10513 | -6365 | -2215 |
| Current tax credit | 192 | 234 | 1961 | 1073 | 326 |
| Deferred tax benefit | 0 | 0 | 0 | 0 | 0 |
| Discontinued operations | 0 | 0 | 0 | 0 | 0 |
| Net Loss | -1258 | -2977 | -9120 | -5849 | -2434 |
| | | | | | |
| Loss per share (p) | -3.9 | -8.4 | -20.9 | -13.4 | -5.6 |
| DPS (p) | 0 | 0 | 0 | 0 | 0 |
| Average no. of shares, m | 31.9 | 35.3 | 43.6 | 43.6 | 43.6 |

*Source: Company historic data, ED estimates*

## Summary Balance Sheet

| Year-end: Dec 31, £'000s | 2016 | 2017 | 2018e | 2019e | 2020e |
|---|---|---|---|---|---|
| Current assets | 1698 | 17061 | 8434 | 3131 | 1235 |
| Cash and cash equivalents | 1481 | 16724 | 7725 | 2645 | 935 |
| Trade & receivables | 217 | 277 | 277 | 277 | 277 |
| Inventories | 0 | 0 | 0 | 0 | 0 |
| Prepayments | 0 | 60 | 432 | 210 | 23 |
| Non-current assets | 1 | 22 | 38 | 48 | 56 |
| Property, plant & equipment | 1 | 22 | 38 | 48 | 56 |
| Current liabilities | -155 | -397 | -397 | -397 | -397 |
| Short-term debt | 0 | 0 | 0 | 0 | 0 |
| Accounts payable & accruals | -155 | -397 | -397 | -397 | -397 |
| Non-current liabilities | 0 | 0 | 0 | 0 | 0 |
| Long-term debt | 0 | 0 | 0 | 0 | 0 |
| Other non-current liabilities | 0 | 0 | 0 | 0 | 0 |
| Equity | 1544 | 16686 | 8134 | 2842 | 953 |
| Share capital | 1 | 436 | 436 | 436 | 436 |
| Other | 1544 | 16250 | 7698 | 2406 | 517 |

*Source: Company historic data, ED estimates*

## Cash Flow

| Year-end: Dec 31, £'000s | 2016 | 2017 | 2018e | 2019e | 2020e |
|---|---|---|---|---|---|
| Net cash from operating activities | -988 | -2153 | -8975 | -5055 | -1683 |
| Profit/(loss) before tax | -1449 | -3211 | -11081 | -6921 | -2760 |
| Non-cash adjustments | 202 | 702 | 577 | 572 | 565 |
| Change in working capital | 78 | 165 | 0 | 0 | 0 |
| Interest paid | 0 | 0 | 0 | 0 | 0 |
| Taxes received | 182 | 192 | 1529 | 1295 | 512 |
| Investing cash flow | 0 | -5013 | -24 | -26 | -27 |
| CAPEX on tangible assets | 0 | -23 | -24 | -26 | -27 |
| Financial investments/other | 0 | -4990 | 0 | 0 | 0 |
| Financing cash flow | 1351 | 17409 | 0 | 0 | 0 |
| Proceeds from equity | 1351 | 17409 | 0 | 0 | 0 |
| Increase in loans | 0 | 0 | 0 | 0 | 0 |
| Dividends | 0 | 0 | 0 | 0 | 0 |
| Other financing cash flow | 0 | 0 | 0 | 0 | 0 |
| Net increase in cash | 363 | 10243 | -8999 | -5080 | -1710 |
| Exchange rate effects | 0 | 0 | 0 | 0 | 0 |
| Cash at start of year | 1119 | 1481 | 11724 | 2725 | -2355 |
| Cash at end of year | 1481 | 11724 | 2725 | -2355 | -4065 |
| Net cash at end of year | 1481 | 16724 | 7725 | 2645 | 935 |

*Source: Company historic data, ED estimates*

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