



LONGITUDE PRIZE

PRIZE RULES

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Antibiotic resistance is a growing and severe problem which threatens to reverse many of the achievements of modern medicine. At the end of June 2014, the British public voted for antibiotics to be the focus of the £10 million Longitude Prize[®]. The race is now on to develop a new test to detect and understand infections to help ensure the right antibiotics are used at the right time.

£8 million will be awarded to the competitor that solves the challenge and up to £2 million may be used to support promising entries along the journey.

CHALLENGE STATEMENT

The Longitude Prize will reward a competitor that can develop a transformative point-of-care diagnostic test that will conserve antibiotics for future generations and revolutionise the delivery of global healthcare. The test must be accurate, rapid, affordable, easy-to-use and available to anyone, anywhere in the world. It will identify when antibiotics are needed and, if they are, which ones to use.

The Longitude Prize is open for anyone¹ to compete, and we welcome your participation. The more people who participate, the more likely it is that the solution will be found and progress made to tackle this urgent global problem.

The final decision to award the Longitude Prize will be made by the Longitude Committee, which is composed of leading figures in the field of science, technology, and healthcare and chaired by Astronomer Royal Lord Martin Rees. The Committee will make their decisions based upon the recommendations of the Prize Advisory Panel, which is composed of experts in the fields of antibiotic resistance, diagnostic technology and global health and development.

You can register for and enter the Longitude Prize at any time and the competition will close when the Longitude Committee decide to award the Prize. The Longitude Committee reserves the right not to award the money if no team meets the criteria as outlined in Part 3 of this document. Under these circumstances the competition will close on the 31st December 2019.

The Longitude Prize is being supported by Innovate UK, the new name for the Technology Strategy Board, as funding partner.

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WHAT IS THIS DOCUMENT FOR?

This document will give you an overview of the Longitude Prize as a potential competitor.

PART 1 – ‘Longitude Prize Overview’ explains the history and the aims of the Longitude Prize

PART 2 – ‘How to enter’ outlines the structure of the Longitude Prize, and explains what you need to do to compete in the Prize

PART 3 – ‘What you need to do to win the prize’ explains the criteria that you must meet to win the Longitude Prize and explains what you need to do to complete your application form

PART 4 – ‘Judging and Assessment process’ explains the judging process for the prize, including details on how your entries will be assessed and tested; and

PART 5 – ‘Other Requirements’ outlines all additional requirements to compete in the Longitude Prize including our ethical and open access principles.

PART 1

LONGITUDE PRIZE OVERVIEW

OVERVIEW

The Longitude Prize 2014 marks the 300th anniversary of the original Longitude Act of 1714, which encouraged innovators to help the British Government to find a method for measuring longitude at sea by offering a £20,000 prize. For a maritime nation, investment in making long distance travel more accurate was vital for consolidating trade and territory. Many possible solutions were suggested, the most famous and successful being John Harrison's mechanical marine timekeeper, which in the following years allowed sailors to accurately judge their position and navigate their course.

Three hundred years on and many global technical problems are now deeply intertwined with social issues. One of these socio-technical challenges forms the basis for the new Longitude Prize 2014 – the problem of growing resistance to antibiotics.

In the summer of 2013 the new Longitude Committee chaired by the Astronomer Royal Lord Martin Rees came together to discuss the most pressing global challenges of our time. In consultation with some of the UK's leading experts, the government and the public, Nesta presented six possible challenges that could be the focus of the Longitude Prize. These challenges were:



FLIGHT

How can we fly without damaging the environment?



ANTIBIOTICS

How can we prevent the rise of resistance to antibiotics?



DEMENTIA

How can we help people with dementia live independently for longer?



PARALYSIS

How can we restore movement to those with paralysis?



WATER

How can we ensure everyone can have access to safe and clean water?



FOOD

How can we ensure everyone has nutritious, sustainable food?

The British public had the opportunity to vote for the challenge that they thought should become the focus of Longitude Prize 2014. Voting took place between 22nd May and 25th June 2014 and after all of the votes were received '**ANTIBIOTICS**' was announced as the winning challenge on the BBC One Show.

WHAT IS A CHALLENGE PRIZE?

Challenge prizes are a very simple idea. A problem is identified, and the challenge is publicised with an offer of a reward to the person or organisation who can find the first or best solution. Talented individuals and teams with the right knowledge and expertise become interested and are compelled by the powerful motivations that competitions tap into – the promise of a large cash reward, the honour of being the first or best, the satisfaction of putting skills to use and making a change in the world – to put aside what they are doing and make solving the problem one of their urgent priorities. One of the advantages of approaching it in this way is the additional innovation and awareness that is generated for the issue.

Challenge prizes are most effective when a clear goal can be defined in response to the challenge or problem that is selected. There are a number of technical, social, and political barriers that stand in the way of attempts to address the growing problem of antibiotic resistance. The Longitude Prize aims to encourage innovation to address one of these technical barriers through the development of a rapid, point-of-care diagnostic test to improve how accurately antibiotics are used.

The Longitude Prize aims to stimulate innovation in the field of rapid diagnostics for infections because we need a step change in technological capability. This requires a concerted effort from a variety of communities, from designers to applied scientists.

THE PROBLEM

The growing resistance to antibiotics poses a global health threat by reducing the efficacy of the drugs which underpin much of modern medicine. We take for granted the vastly lower risks than previous eras for example, giving birth, undergoing surgery, and even surviving infections from minor bumps and scratches. Eighty years since the discovery of penicillin, the overuse and unnecessary use of antibiotics is rapidly diminishing their effectiveness because bacteria are acquiring resistance to antibiotics.

The growth of antibiotic resistance is accelerating. After penicillin was granted regulatory approval in 1943, it took about 22 years for the first cases of penicillin resistance in pneumonia to develop. It took 15 years for erythromycin (approved in 1953, resistance in *Staphylococcus*) and 12 years for gentamicin (approved in 1967, resistance in *Enterococcus*) (Hede, 2014). The first cases of resistance to linezolid outside of clinical trials were reported in 2001, only one year after its regulatory approval in 2000 (Tsiodras, et al., 2001).

The problem is urgent and demands immediate action (WHO, 2014a). Our ability to treat infections that once were believed to be under control is now at risk and a 'post-antibiotic era' is becoming a real possibility for the 21st century.

Antibiotic resistance needs to be addressed globally and simultaneously on many levels (scientific, regulatory, and educational) if we are to see a real change. Resistance to the last-resort treatment for life-threatening infections caused by *K. pneumoniae* has spread to all regions of the world. Resistance to the last-resort treatment for gonorrhoea has been confirmed in Austria, Australia, Canada, France, Japan, Norway, Slovenia, South Africa, Sweden, and the United Kingdom (WHO, 2014a). Several nations have recently prioritised the fight against antibiotic resistance, with examples including India's Chennai Declaration and President Obama's Executive Order to implement an antibiotic resistance strategy in the United States. Wide-ranging coordination must be maintained to effectively mitigate resistance, because all of us – general practitioners, scientists, lawmakers, farmers and patients – contribute to and suffer from the problem and we all have a role to play in the solution.

SOLUTIONS

Currently we are dependent on antibiotics to treat bacterial infections. In the long-term we need to expand our portfolio of treatments by creating alternatives to existing antibiotic therapies. Antibiotic adjuvants (Kalan and Wright, 2011), phage therapy (Sulakvelidze, Alavidze and Morris, 2001), prebiotics (Gibson, McCartney and Rastall, 2005), anti-virulence strategies and biological therapeutics (Laxminarayan, et al., 2013) are potential options at various stages of research. Developing these novel approaches could usher in the era of entirely new, targeted, and potent antibiotic therapies. In parallel we still need to be developing new antibiotic drugs.

However, a new antibiotic would have a very limited lifespan if it was used in the same irresponsible fashion as antibiotics are used today. If the efficacy of existing and future antibiotics is to be preserved, we need to learn how to conserve and target them more effectively. Addressing the problem of antibiotic overuse and unnecessary use is a central part of the challenge in slowing antibiotic resistance and conserving existing drugs for longer.

DIAGNOSTICS TO INFORM CHANGE IN CLINICAL PRACTICE

Clinical practice will inevitably need to change. Healthcare practitioners are often pressured by patient demands to administer antibiotics even when they are not needed (Singh, 2013). Up to half of antibiotic prescriptions given to respiratory infections in the US are unnecessary (Meeker, et al., 2014). In many cases clinicians must also administer antibiotics when they are pressed to act quickly on imperfect information. In urgent situations, when there is no clear direction for treatment, broad-spectrum antibiotics are used to cover a range of suspected pathogens (Peacock, 2014). There are also major problems with counterfeit antibiotics and self-prescription (Vikram, et al., 2005).

Better diagnosis of infections would enable clinicians and patients to make informed decisions on the course of prescribed treatment. Equally important will be the ability to convince patients to accept a more targeted antibiotic approach (or no antibiotic treatment at all if there is no need) to preserve our antibiotics for the future. With the intention to reduce antibiotic overuse and unnecessary use, the Longitude Prize will focus on methods and tools for informing the more accurate use of antibiotics.

More easily attainable results from diagnostic tests would help clinicians make better informed decisions, thereby conserving antibiotics and restricting their use only to those cases when they would really be beneficial. Slowing down the pace at which bacteria attain resistance will not only minimise the costs involved in healthcare and new drug research, but also benefit patient safety in general.

Besides enabling better stewardship of antibiotics, diagnostic tests will also help in coordinating policy, regulation, and surveillance efforts to manage and track the use of antibiotics worldwide. They will contribute to the identification and understanding of pathogen resistance mechanisms, aiding the development of better treatments and clinical trials as well as targeting novel alternative therapies to antibiotics.

There are many tools available for diagnosing infections in a hospital laboratory. However, there is a great need to improve upon available point-of-care diagnostics that do not require the time, resources and expertise that laboratory-based diagnostics do. This is especially true in developing countries where the availability of resources such as clean water or electricity cannot be guaranteed. The Longitude Prize will therefore focus on diagnostic technologies that can be used at the point-of-care and exclude technologies that can only be used in a laboratory. The challenge: better point-of-care diagnosis of infections.

AIM OF THE LONGITUDE PRIZE

The Longitude Prize aims to incentivise the development and production of a transformational diagnostic test that will revolutionise the way that people around the world make choices about the use of antibiotics, as one element of a global, interdisciplinary effort to address the problem of antibiotic resistance.

In order to encourage innovation in all aspects of diagnostic development for point-of-care use, the Longitude Prize will not narrow its focus further to a particular subset of diagnostic tests or clinical problems. Developing a new diagnostic test requires ingenuity, not only in devising methods of detection, but also in determining a clinical context in which a diagnostic test can have the greatest impact. It will be up to the competitors in this challenge to determine the scope of their proposed diagnostic test.

The Longitude Prize invites a variety of proposals from a wide range of specialist fields and sectors: from academic groups through to commercial companies, from biomedical scientists through to material engineers, from synthetic and molecular biologists through to physicians, specialist clinicians, and completely unexpected sources.

PART 2

HOW TO ENTER

PRIZE STRUCTURE

The Longitude Prize opened on the 18th November 2014 and will run for up to five years, or until a winner meets all the criteria for the prize. The prize fund totals £10 million. £8 million will be awarded to the competitor who manages to solve the challenge. At the discretion of Nesta and the Longitude Committee, up to £2 million may be used to support promising submissions along the journey including as part of the Longitude Discovery awards. The Longitude Committee reserves the right not to award the prize if no team meets the criteria. If no entry is judged by the Longitude Committee to have met all of the requirements set out in the criteria, the competition will close on the 31st December 2019, unless Nesta, our partners and the Longitude Committee decide to extend it. For further details on the prize timeline and deadlines please see the timeline in **PART 4**.

All entries will be subject to the Longitude Prize Terms and Conditions. Please read the Terms and Conditions carefully before you enter the prize.

REGISTRATION

To compete in the Longitude Prize you must first register by completing the registration form on the **Longitude Prize website**: <http://www.longitudeprize.org/>.

By registering for the Prize you will be able to formally compete in the Longitude Prize and you will receive key information and updates regarding the Prize.

The registration form asks for information about your team including the team name, leader and contact details. If you are entering the Longitude Prize as part of a team, you must nominate one person as team leader. This person is responsible for making sure that all other team members are aware of and comply with the Terms & Conditions and this document. The form also asks for a summary of the entry that you are developing.

Some of the information provided in the registration form will be made publicly available on the Longitude Prize website. Please make sure that you have read this document and our Terms and Conditions before submitting your registration form.

You can register at any time. We encourage you to register at an early stage so that we can showcase your progress towards winning the prize on the Longitude Prize website.

Once you have registered, a full application form will be made available to you. If your team is eligible to compete, you will receive this **within five working days** of receipt of your registration form.

APPLICATION

It is the responsibility of each team or individual to submit a complete application form when they believe that their innovation meets the criteria for the Prize. Supporting evidence will be required to validate the claims that you make in the application form.

You can see the timeline for submission of entries to the Longitude Prize in **PART 4** of this document. Application forms and supporting evidence will be uploaded on to a secure online system. Please identify any confidential or sensitive information included in your entry. Only prize organisers, assessors and the Prize Advisory Panel will be able to access this information and all individuals that can access, view or judge this information will be subject to strict confidentiality including non-disclosure agreements.

WHO CAN PARTICIPATE?

Anyone of any age² and any organisation may enter the competition as long as you meet the **Eligibility Criteria** below:

The team is able to demonstrate that in winning the Longitude Prize it would deliver direct economic growth or benefit or social benefit in the UK.

To demonstrate such benefit the team must:

Include a member which has a presence in the United Kingdom, meaning an office in the UK, affiliation with a UK Company or partnership with a UK organisation or institution, and meet one of the following requirements:

- a. carry out manufacturing and/or design of the winning solution in the UK, or
- b. lab test or showcase the winning solutions in the UK, or
- c. use some other means agreed in writing with Nesta and Innovate UK before participating in the Longitude Prize

OFFICIAL LANGUAGE AND CURRENCY

LANGUAGE

The official language of the prize is English. All communications and entries must be made in English.

CURRENCY

The official currency is pounds sterling. All monetary values are in pounds sterling unless otherwise stated.

PART 3

WHAT YOU MUST DO TO WIN THE LONGITUDE PRIZE

The winning entry must fully meet the requirements set out in the criteria and Challenge Statement.

CHALLENGE STATEMENT

The Longitude Prize will reward a competitor that can develop a transformative point-of-care diagnostic test that will conserve antibiotics for future generations and revolutionise the delivery of global healthcare. The test must be accurate, rapid, affordable, easy-to-use and available to anyone, anywhere in the world. It will identify when antibiotics are needed and, if they are, which ones to use.

CHECKLIST

YOUR TEST* MUST BE:

*The test must be a design-locked, optimised prototype which is ready for clinical performance trials in preparation for regulatory approval.

A. NEEDED

Focused on a globally-occurring problem

The test must improve the targeted use of antibiotics for common globally-occurring infections (including in the UK) by:

- Ruling out unnecessary antibiotic use,

AND/OR

- Providing all of the necessary information to identify an effective antibiotic or combination of antibiotics.

Able to improve antibiotic treatment decisions

The test must address the described problem appropriately so that it improves antibiotic treatment decisions and public health.

The test must improve on currently available existing diagnostic approaches.

B. ACCURATE	The test must be accurate enough to eliminate harmful treatment decisions, inform more targeted antibiotic use, and give users the confidence to act upon its result.
C. AFFORDABLE	At forecasted full scale manufacture the test, including any instrumentation, must be affordable for purchase and use in its intended global market(s). Less expensive tests will be favoured.
D. RAPID	The time from sample collection to reporting of the result to the treatment decision-maker must be less than thirty minutes. More rapid tests will be favoured.
E. EASY-TO-USE	<p>Globally applicable</p> <p>The test must be suitable for point-of-care use in all global healthcare settings where the test could be used to inform treatment decisions.</p>
	<p>Minimally reliant on healthcare resources</p> <p>The test must require minimal healthcare resources and training to be used effectively and safely.</p>
	<p>Easy-to-use and Interpret</p> <p>The test must be easy to use and interpret safely and effectively, in the global settings and locations where it will be used.</p>
F. SCALABLE	<p>Ready for manufacture and distribution</p> <p>There must be a feasible business plan for full-scale manufacture and global distribution.</p>
	<p>Original</p> <p>You must take reasonable steps to find out whether your technology infringes on the intellectual property rights of others.</p>

G. SAFE	The risks associated with a test will be judged against the benefit it can provide.
H. CONNECTED	Tests which have an in-built data recording and transmitting capacity will be favoured. A test does not need to have this capacity in order to win the prize.
LEVEL OF DEVELOPMENT REQUIRED	The test must be a design-locked, optimised prototype which is ready for performance evaluation in preparation for regulatory approval.

CRITERIA

Judging of the Longitude Prize will be based on the criteria and requirements set out above and described in more detail below. In your application form you must provide information that outlines how your innovation meets each of these criteria. You must also provide detailed evidence that validates each of these claims.

Nesta may refine and clarify the criteria and requirements as appropriate over the course of the Longitude Prize in-line with the overarching aim of the prize. Any changes will be communicated to all registered participants.

A. NEEDED

A1. FOCUSED ON A GLOBALLY-OCCURRING PROBLEM

This section is to ensure that the submitted diagnostic test's target infection(s) represent a genuine pressing global problem, particularly with respect to antibiotic resistance. As well as identifying the existence of the problem, you should explain the drivers behind it, whether these are unsuitable existing diagnostics or behavioural practices.

We recognise that good data can be scarce for some diseases and antibiotic resistance levels, both locally and globally. You should nevertheless base their problem description on good evidence where possible. Statistics and definitions used should be provided, referenced, and clearly explained.

WHAT YOU NEED TO DO TO WIN

The diagnostic test will improve the targeted use of antibiotics for common globally-occurring infections by:

- Ruling out unnecessary antibiotic use;

AND/OR

- Providing all of the necessary information to identify an effective antibiotic or combination of antibiotics.

Tests that are able to both rule out unnecessary antibiotic use and help identify a suitable antibiotic will be favoured.

In both cases the diagnostic test must fulfil a global and UK need. It must be sold in the UK.

A diagnostic test may do this in a number of ways:

- differentiate between viral or bacterial infections; or
- it may identify the causative pathogen and its antibiotic susceptibility and resistance; or,
- It may use a completely novel mechanism.

The Longitude Prize is ambitious. We are not looking for incremental changes to existing technologies but for transformative solutions that will revolutionise the prescribing and use of antibiotics globally. Our vision is that the Longitude Prize will only be awarded to a test which has the potential to positively influence treatment decisions in the maximum possible number of occurrences where antibiotics are taken. In 2010 there were over 73.5 billion units of antibiotics bought globally, of which around 2.5 billion were broad spectrum penicillins. Therefore the winning test to improve the targeted use of antibiotics must have the potential for impact both in the scale of treatments it could improve and the global distribution of those treatments. The test should have the biggest impact in relation to the overall number of improved treatment decisions that involve antibiotic use globally each year.

Exceptions may be made from the stipulations above if competitors can provide a compelling, well-evidenced argument for the severity of the infection(s) that their diagnostic test targets. For example, such an argument may be based on the fact that a disease is rapidly proliferating, or that growing antibiotic resistance threatens to make a treatable infection extremely harmful.

We encourage innovators to consider developing tests that identify bacteria which demonstrate resistance to multiple antibiotics and that also cause multiple types of infection globally. We welcome diagnostics that concentrate on problem areas where there is a clear need articulated for a point-of-care device, which outlines the potential the diagnostic has to halt the rise of resistance with respect to its target infections.

WHAT YOU NEED TO TELL US

You must provide a clear explanation of why a diagnostic is needed and the potential it has to reduce unnecessary antibiotic use. You will need to tell us about the problem created by the pathogens and infections being tested for, and explain how this contributes to the growth of antibiotic resistance, therefore demonstrating there is a clear need for a solution. This information, along with a description of how the test will specifically improve antibiotic treatment decisions (in the next section), will allow our judging panel to see the potential the diagnostic test has to make a positive impact. We will accept clearly referenced papers or studies that support claims for the burden of specific infections globally.

- **Which infection(s) does your diagnostic target?**
 - Give the global incidence of new cases per year for the target infections based upon the best available data (please reference clearly).
- **Explain how the targeted infections represent a pressing need in relation to antibiotic resistance and discuss the evidence that a diagnostic test is the right approach.** We favour a global perspective and expect this answer to include a description of the situation in multiple locations globally in order to demonstrate that there is substantial need for an intervention. Please attach and clearly label any supporting data or studies that demonstrate disease burden, etc.
 - Outline the key problems that produce a need for a diagnostic and why it is important with regard to the bigger picture of antibiotic resistance globally.
- **Describe any relevant existing diagnostics (point-of-care and lab based) and explain why they do not adequately address the problem.** Outline the best available and the most commonly used alternatives.
- **Describe any social and cultural factors which drive the problem(s).** Please include behavioural drivers of the problem across the different locations where the target infection(s) has a significant incidence, for example, end users buy antibiotics direct from pharmacies without prescriptions, existing diagnostics are too expensive for use in primary healthcare settings, sample collection methods are not accepted locally.

A2. ABLE TO IMPROVE ANTIBIOTIC TREATMENT DECISIONS

This section is to ensure that the submitted diagnostic test will effectively address the problem outlined above. This means not just providing a diagnostic test which targets a burdensome infection(s), but also ensuring that it will actually influence antibiotic use by addressing the particular factors which influence treatment decisions.

WHAT YOU NEED TO DO TO WIN

The diagnostic test **must** address the described problem appropriately so that it improves treatment decisions and public health.

The diagnostic test **must** improve on existing diagnostic approaches that were available to purchase at the time the prize launched on 18th November 2014.

WHAT YOU NEED TO TELL US

Explain how the test will specifically address the outlined problem(s). This should include details of:

- **Improving targeted antibiotic use** – How the submitted diagnostic test is intended to improve targeted use of antibiotics;
- **Existing diagnostics** – How the submitted test improves upon existing diagnostics in this field against the remaining criteria outlined in this document. Please outline the best alternative and most commonly used alternatives (either point-of-care or lab-based testing);
- **Treatment decision** – How the test will fit into or change the treatment decision process. If the process varies across different settings, please describe the most widespread processes. Outline a patient pathway for the diagnostic test; this can be a traditional flowchart or another graphic representation. This will demonstrate at what point the diagnostic test can be used, and how the test affects treatment decisions. The pathway must show a journey from patient presentation to final intervention.³
- **Behaviour and cultural practices** – How the test addresses the behavioural drivers of the problem across the different locations at which the infection has significant incidence, for example, if antibiotics are regularly bought from pharmacies without prescriptions, the diagnostic test should be suitable for sale in pharmacies and self-use. How will external factors which will impact the efficacy of your test be addressed?
- **Feasibility** – Research which demonstrates that the diagnostic test will be used and have an effect in its intended-use setting. This research is likely to be qualitative and could include focus groups and interviews with the relevant communities. This evidence is particularly important when a submitted diagnostic test either has a novel operation or will be used in a novel setting.⁴

B. ACCURATE

Accuracy is an essential characteristic of diagnostic tests. An inaccurate diagnostic test may result in low uptake and incorrect treatment decisions, with potentially harmful consequences. Sensitivity and specificity are vital components of accuracy.

- **Sensitivity** is the probability that patients with the specific infection will have a correct positive result using the test.
- **Specificity** is the probability that patients without the specific infection will have a correct negative result using the test.

This information is combined with infection prevalence in the studied population to give predictive value:

- The **positive predictive value** is the probability that a test result accurately indicates the presence of infection.

- The **negative predictive value** is the probability that a negative result accurately indicates the absence of infection.

WHAT YOU NEED TO DO TO WIN

The test **must** be accurate enough to eliminate harmful treatment decisions, improve targeted antibiotic use, and give users the confidence to act on its result in the global settings and locations where the test will be used. There are no uniform values for minimum accuracy for the Longitude Prize because acceptable accuracy varies between infections and populations. The higher the accuracy the better.

WHAT YOU NEED TO TELL US

You must submit;

- **Sensitivity and specificity values** for your diagnostic test and the positive and negative predictive values, where available. Please include a brief summary of how you have calculated these figures, including details of the samples used and patient cohorts. You must also attach supporting material with full details of the relevant trials that you have undertaken to calculate these figures.
- **A description of the range of analytes** over which there is an accurate result and which standard your diagnostic accuracy is measured against.
- **A summary of any local conditions**, such as diet, comorbidities, or anything else, which affects the accuracy of your test.
- **A description of how the accuracy values of your test are high enough to improve targeted antibiotic use** whilst eliminating harmful treatment decisions. Evidence should also be provided that details how the accuracy of your test gives users the confidence to act on its result.

Shortlisted tests will be subjected to independent testing for accuracy.

C. AFFORDABLE

Affordability covers the **price point** of the diagnostic test in the relevant global markets.

To be affordable, the price of the test must reflect value for money to the intended users, whoever they might be (for example, patient, doctor, health service). The price of your test must be cheaper than any existing diagnostic test or method with similar performance characteristics and, where feasible and realistic, it should aim to not exceed the cost of the treatments that it might save.

The **manufacturing and operational costs** of the diagnostic test will also be considered.

WHAT YOU NEED TO DO TO WIN

At forecasted full scale manufacture the test must be affordable for purchase and use in its intended global markets.

A test will be considered affordable if the price of the test:

- reflects value for money for the intended users (patient, doctor, health service);
- is cheaper than any competing diagnostic test or method of similar performance characteristics; and,
- where feasible and realistic, it should aim to be cheaper than the treatment cost that the test might save.

Less expensive diagnostic tests will be favoured.

You should review the price point alongside the cost of unnecessary antibiotics and other treatment costs that the test might save in the relevant global markets, and the next best diagnostic technique in the different contexts in which the test is going to be used. This comparison demonstrates how the innovation provides value for money and whether it is genuinely affordable.

For example, in India a one week course of 250mg amoxicillin can be bought for as little as 100 rupees or £1. In this particular instance, a diagnostic test should be sold at a price lower than 100 rupees when the patient is the consumer.

If considered necessary following evaluation, Nesta will independently verify or calculate manufacturing cost, price point and any other relevant information to validate the affordability of your test.

WHAT YOU NEED TO TELL US

You must demonstrate to the judges through written evidence and forecasting that your product will be affordable at scaled production. You must show an understanding of customer affordability or competitive pricing requirements in order for their product to be truly affordable globally. We encourage you to have direct contact with customers to understand their true needs and hear their sensitivity to costs directly, and to have thoroughly researched competitors' product pricing in the market place.

- **Give the projected unit cost at production scale of 10,000 units** with a breakdown of the unit costs including the estimated costs of production labour, direct materials, process, overheads, primary and secondary packaging, outside processing and all other relevant details. Please specify the manufacturing processes involved. This can be built around existing processes where relatively good historical cost data should exist. On occasion, new manufacturing processes will need to be considered. Data will need to be gathered as a basis for creating or extending the product cost model for the new process or processes.
- **Cost per reportable result.** As well as the cost of the test, this figure should take account of any additional materials and processes needed to perform the test, such as extra syringes, quality control, or calibration.

- Give the price point(s) of the target market(s), along with a description of the target market. Attach the supporting material for this calculation. Please provide comparative data in order to explain how the pricing model is affordable – for example provide the cost of the antibiotic that that test might save or stipulate the cost of the existing diagnostic methods for the infection(s).

D. RAPID

WHAT YOU NEED TO DO TO

In order to win the Prize, tests **must** be able to give a result to the decision maker in less than 30 minutes. In addition, the time to result must be suitable for the relevant clinical treatment pathway. Tests which give a quicker result will be favoured over others. Time to result is constituted of the time from the beginning of sample collection to the delivery of the test result.

WHAT YOU NEED TO TELL US

Give the time to result from the beginning of sample collection to reporting of the result to the decision-maker or end-user, as well as the breakdown times for each step of the process (for example, sample collection, sample preparation, etc.). Attach details of any evidence which supports your claims. The submitted values should reflect use in the intended setting, for example, if it's intended for patient self-use, times should not be based upon use by a trained laboratory technician.

In many instances, depending on the context, a test may need to be significantly quicker than 30 minutes to be clinically useful. You must explain how the time to result of your test will be appropriate for its intended use. We reserve the right not to award the prize if the time-to-result of your test is not appropriate for the intended-use setting, even if it is below 30 minutes.

E. EASY-TO-USE

E.1. GLOBALLY APPLICABLE

To win the Longitude Prize a diagnostic test **must** be able to be used safely and effectively at point-of-care settings globally, including in low and middle-income countries.

The innovation **must** be suitable for use in a range of healthcare settings. Ideally it would be appropriate for self-testing, health posts and community use, or health care centres and clinics, as well as being suitable for laboratories and hospitals.

In addition, it **must** be suitable for use in healthcare settings where a large number of treatment decisions are made with regard to the relevant infection(s). For example, a test for multidrug-resistant tuberculosis could be used in the United Kingdom, but should be designed to be able to be used in point-of-care settings in countries where available healthcare resources will be at a significantly lower level. Specific requirements to help achieve the settings criterion are outlined below.

E2. MINIMALLY RELIANT ON HEALTHCARE RESOURCES

WHAT YOU NEED TO DO TO WIN

A diagnostic test **must** require minimal healthcare resources, as set out below. A test which requires fewer healthcare resources to be used safely and effectively will be favoured.

WHAT YOU NEED TO TELL US

You **must** provide relevant information under each of the categories below. Healthcare resources include personnel and expertise as well as physical resources. Alongside this, you should outline how these specifications match the resources available in the intended-use settings. Where supporting material is available, such as temperature stability trials or user training studies, this should be attached and clearly labelled.

- **Calibration requirements and controls.** The test should provide an accurate result without calibration.
- **Specimen type, volume, and collection method.** Collection methods must be non- or minimally-invasive, they must be able to be performed without specialist equipment, and they must minimise pain or be painless.
- **Sample preparation (steps, biosafety, precision required, time sensitivity).** This process must be fast, automatic, contained within the device, and involve a minimal number of steps.
- **Waste disposal (safety, ease, environmental acceptability).** Waste must be minimised and must be disposed of without posing a safety or environmental risk.
- **Reagents required (availability, inclusion).** The reagents must be widely and cheaply available or be included as part of the diagnostic test.
- **Storage/stability (shelf life inc. reagents, temperature stability, humidity stability).** Diagnostic tests and their reagents must have long expiration dates, and they must be physically robust. They must be stable across a wide range of temperatures (high and low) and stable over wide humidity range (heat stable and humidity stable). It must be able to withstand short-term transport stress i.e. environmental extremes experienced during transportation.
- **Instrumentation (maintenance requirements, replacement cost, size, shock resistance).** Any instrumentation must require no or minimal maintenance, require no specialist expertise to maintain, be cheap to maintain, and be physically robust so as to minimise the need for maintenance and repair.
- **Power requirement.** Any instrumentation must not be reliant on mains power to function. It must require minimal power which would be available from temporary or mobile power sources such as batteries or solar cells.

- **Training required (mode, level, and length).** No training or minimum training should be required, and effective instruction must be given via simple text or pictorial instructions which would take account of language and literacy considerations in the target markets.
- **Intended user (trained laboratory worker, primary care doctor, untrained patient, etc.).** The diagnostic test must be capable of being used safely and effectively by minimally trained primary care workers or even the patients themselves.
- **Portability and size.** The diagnostic test must be able to be carried easily, safely, and comfortably by a single person, and be of a suitable size for desktop storage and use. Tests that are lighter and smaller will be favoured.

Exceptions may be made under exceptional circumstances from the requirements above if you can provide a well-evidenced and compelling argument for the need to do so.

E3. EASY-TO-USE AND INTERPRET

WHAT YOU NEED TO DO TO WIN

The test **must** be easy to use and interpret effectively and safely in its intended-use setting. This means that diagnostic tests should ideally be integrated, closed, sample-to-answer systems with automated data analysis and result presentation. Additionally, the test should be adapted to take account of any particular behavioural and cultural practices. The ideal would be a diagnostic test which could be safely and effectively used by anyone, including the patient themselves.⁵

WHAT YOU NEED TO TELL US

Nesta shall arrange for the independent design and delivery of a validating usability test to assess the ease of use and potential user errors of the submitted device. You **must** provide an appropriate number of devices for testing, as well as any required training. You **must** submit;

- **A description of conditions of use that might affect test use safety or effectiveness, including behavioural and cultural practices;**
 - **A summary of the characteristics of intended-use environments that could impact use (for example, glare, vibration, ambient noise, etc.).** Any environments for which the test is unsuited should be stated;
 - **The known use problems with previous models of the same test (as applicable) or problems with similar types of medical devices;**
 - **Any design modifications of the current device that were specifically developed in response to use problems in the field;**
 - **A synopsis of any previous usability testing, including how the testing was conducted, the test results, and a discussion of all performance failures and critical assessments by test participants; and**
-

- The formative evaluation methods used key results of those evaluations and any modifications that were implemented to the user interface design in response to the results of the formative evaluations.

F. SCALABLE

You **must** outline how you will realise the potential for your diagnostic test to have a significant global impact by describing how you will scale up to large scale manufacture and distribute and sell your test to all of the worldwide settings where it is needed.

WHAT YOU NEED TO DO TO WIN

You **must** have a feasible plan for delivering the diagnostic test at an affordable price (*Refer to C. Affordable*) to all of the worldwide settings where it is needed. This includes plans for full-scale manufacture and global distribution including, where appropriate, pricing structures and collaborations with partners. You must also consider whether your technology infringes the intellectual property rights of others and you must have an intellectual property strategy which is appropriate for allowing affordable and timely access to the test by end-users. If you do not have in place the necessary intellectual property rights or agreements to develop or exploit your product you may not be awarded the Longitude Prize.

WHAT YOU NEED TO TELL US

You **must** provide a clear business plan and supporting evidence to validate your claims. You do not have to follow a specific template. However, you do have to give a complete, convincing and detailed answer to all of the questions below in the manner that you feel is most appropriate.

- **How will you move to quality assured full-scale manufacture?** Give details of timelines, milestones, partners, suppliers and processes.
- **How will you distribute the diagnostic test to the settings in which it is needed, including low-income countries?** Give details of costs, partners and processes.
- **How will you ensure the long-term sustainability of the solution in different marketplaces?** You should consider service and repair needs and local skills.
- **How will you meet regulatory approval so that your test can be sold in the nations where it is needed?** Give details of timelines, dealings with regulatory agencies and how you meet regulatory requirements.
- **How will you ensure that at point-of-purchase the diagnostic test is below the price point, including in low-income countries?** Consider the potential additional costs of distribution. If appropriate, give details of different pricing structures.
- **What is your competitive landscape?** What are the solutions you need to compete against in the market place (product features and providers)? What similar products can be expected from the development pipelines of other companies in the near and mid-term future? Which will be the 'unique selling points' of your product vs. present and upcoming competitors in the market (please break down by the different markets the solution is supposed to serve)? (*Refer to A. Needed*)

- **Have you taken any steps towards protecting your intellectual property?** Where is it protected? Where do you intend to protect it? Are you aware of or have you explored whether your product infringes on the intellectual property rights of others (freedom to operate)?
- **Have you structured your intellectual property strategy such that end-users will be able to affordably and easily access your test?** The intellectual property strategy for the diagnostic test should not hinder end users from being able to access the test in an affordable and timely fashion.
- **What are the risks involved in the business plan and how will they be mitigated?** How do you address external factors that will impact on your test moving to scale?

G. SAFE

It is your responsibility to adhere to applicable safety and regulatory legislation. This risk framework is only designed for use in the Longitude Prize. This risk assessment will allow us to judge the anticipated benefit of a diagnostic test against the risk it poses. Risk is the combination of the probability of occurrence of harm and the severity of that harm.

WHAT YOU NEED TO DO TO WIN

The risks attached to your test **must not** outweigh its benefits.

WHAT YOU NEED TO TELL US

You must submit your own risk assessment based upon the framework outlined below. Using this framework to justify your decisions, you must separately class the individual and public health risks associated with your diagnostic as low, medium or high. Some illustrative example responses are given alongside the risk framework, taken from the World Health Organisation Prequalification Team document WHO 2014b

RISK FRAMEWORK

- **Clinical importance of test result to the diagnosis (sole determinant or one of several)**

Example:

Test results are used to decide on whether to enter individuals into care using valuable resources that may be in very limited supply.

- **Tasks or use scenarios that are most likely to be associated with use error that could cause clinical harm to the patient or the user.**
- **The likelihood of false results given the clinical importance of a test to diagnosis, setting of use, and expertise of the likely user.**

- **Public health impact of incorrect result (false negative and false positive).**

Example:

- **Public health impact of incorrect result:** Moderate.
- **False positive result:** Unnecessary use of limited resources (medicines), possible contribution to drug resistance due to over-treatment.
- **False negative result:** Possible transmission of the disease, economic impact.

- **Individual health impact of incorrect result (false negative and false positive).**

Example:

- **Individual health impact of incorrect result:** High.
 - **False negative result:** Not initiating treatment for an infected individual can have profound implications for individual health, possibly leading to death.
 - **False positive result:** Risks associated with side effects of treatment.
- **Safety concerns (those not associated with incorrect results, for example, risk of contamination from sample).**

H. CONNECTED

In-built automatic data recording and transmission capability is not a necessity for winning the Prize. Rather a diagnostic test which has this capability will be favoured over one which does not.

A global lack of information on disease occurrence and particularly on the occurrence of antibiotic resistance is a barrier to the design and implementation of successful policies to combat antibiotic resistance (WHO 2014a). Diagnostic tests provide this information, but it does not necessarily follow that it is recorded or transmitted to centralised databases. In order to improve surveillance and provide information for local infection management, automated data recording and transmitting services can be built into diagnostic tests. Such technology is also vital in reporting for maintenance of tests.

WHAT YOU NEED TO TELL US

You must submit the details of any surveillance capacity built in to the test, including how it records and transmits information and the resources it requires to do so (i.e. mobile phone, user input, training), the surveillance system that it feeds into, interoperability and the data interface protocol.

LEVEL OF DEVELOPMENT REQUIRED

Before entering the Longitude Prize you must have produced at least three functional test units that meet all of the criteria outlined above. It must be a design-locked, optimised prototype which is ready for performance evaluation in preparation for regulatory approval.

If your test is selected for further testing you must provide an appropriate number of test units that are required for effective testing.

PART 4

THE JUDGING AND ASSESSMENT PROCESS

You can register for and enter the Longitude Prize from 18th November 2014.

The competition will close when the Longitude Committee agree that a competitor has met all requirements set out in the criteria and decide to award the prize. If no entry is judged by the Longitude Committee to have met all of the requirements set out in the criteria or the aims of the Longitude Prize, the competition will close on the 31st December 2019.

TIMELINE



LONGITUDE COMMITTEE

The Longitude Committee features some of the leading experts from across the scientific world. They will make the final decision as to which entry should win the Longitude Prize.

Members will declare any relationships or interests which they have which might give rise to an actual or perceived conflict. Any conflicts that arise will be handled appropriately.

The membership of the Longitude Committee can be found on the Longitude Prize website.

PRIZE ADVISORY PANEL

The Prize Advisory Panel provides expert independent scientific and technical guardianship for the Longitude Prize. Drawing on their unique expertise they will make judgements and recommendations to the Longitude Committee regarding the allocation of awards to Prize competitors and provide advice about the design of the prize. The membership of the Panel was nominated by Nesta and approved by the Longitude Committee. You can find the list of Prize Advisory Panel members on the Longitude Prize website.

All members of the Prize Advisory Panel are required to sign a non-disclosure agreement. Members declare any relationships or interests which they have which might give rise to an actual or perceived conflict. Panel members will not participate in Prize Advisory Panel discussions or other activities where they are subject to an actual or perceived conflict of interest.

ASSESSMENT

We will undertake a rigorous assessment of all entries to the Longitude Prize to see whether they meet the criteria to win the prize, as set out in this document.

You can register for and enter the Longitude Prize from 18th November 2014 and entries can be submitted at any time, but they will only be reviewed and assessed every four months after each deadline has passed.

DEADLINES

The rolling deadline rounds for entry into the Longitude Prize are provided below:

2015 – 31st May, 30th September

2016 – 31st January, 31st May, 30th September

2017 – 31st January, 31st May, 30th September

2018 – 31st January, 31st May, 30th September

2019 – 31st January, 31st May, 30th September

REVIEW

Once you have submitted your application it will be reviewed by expert assessors to determine whether your entry meets or is capable of meeting the criteria to win the Longitude Prize.

Your entry will be unsuccessful if:

- Your application form is **incomplete**,
- You **do not satisfy the eligibility criteria** set out in the 'Who can participate?' section of this document,
- Your entry is **out-of-scope** for the prize,
- It is clear that your entry **does not meet or is not capable of meeting the Prize criteria**, set out in this document.

If your entry is unsuccessful, you will be informed of this decision by e-mail within two months of the relevant application deadline. You will also receive short feedback on your application that explains why it was unsuccessful. No other correspondence will be entered into.

Entries that have been reviewed by external assessors and that are judged to meet or are close to meeting the prize criteria will be sent to the Prize Advisory Panel for further assessment. At this stage, if you are successful you may be asked to provide further information to support the Prize Advisory Panel's assessment.

PRIZE ADVISORY PANEL

The Prize Advisory Panel meet every four months with the timing of the meetings arranged so that they are within three months of each entry deadline. At these meetings they will review the entries referred to them by external assessors. The Panel will also consider the comments provided by external assessors.

INTERVIEW

If the Prize Advisory Panel decides that from your application form and supporting evidence your entry meets the criteria to win the Prize, you will be invited for an interview with a sub-group of the Prize Advisory Panel. The interview will take place within six weeks of the Prize Advisory Panel's decision. If the Prize Advisory Panel decides that your entry does not meet the criteria, your entry will be unsuccessful. The Panel will provide you with feedback explaining their decision.

At the interview the Panel will ask questions based on the details provided in your application form and supporting evidence. In advance of the interview the Panel may request further information or evidence to clarify the claims made in your application.

Following the interview, the Panel may agree to invite you to take part in independent testing and modelling. You will be informed of the Panel's decision within two weeks of your interview.

TESTING

Testing and modelling will take place over the six months following the Prize Advisory Panel's decision. You must provide an appropriate number of test units for testing.

Independent testing and modelling consists of:

- 1. Accuracy testing** – In order to verify your accuracy claims, submitted diagnostic tests will be independently tested for accuracy. This testing will take the form of a laboratory-based retrospective trial using archived specimens from a target population. In cases where retrospective trials are unsuitable, or incur a similar cost and time to in-field clinical performance trials, in-field clinical performance trials may be performed as well as, or instead of retrospective trials.
 - 2. Usability testing** – In order to assess whether submitted diagnostic tests can be used effectively and easily in clinical settings, a usability trial shall be performed. This will assess both the technical aspects of the diagnostic test which affect its usability, and whether any behavioural or cultural practices will prevent its effective and safe use.
-

3. Impact modelling – A custom model will be constructed based upon an intended–use setting and the diagnostic test characteristics to forecast the effect of the diagnostic test upon treatment decisions. This will give an indication of the ability of the diagnostic test to reduce inappropriate antibiotic use in real–life settings.

If considered necessary, Nesta will independently verify or calculate manufacturing cost, price point and any other relevant information to validate the current and future affordability of your test.

Depending on the evidence provided as part of the application form and the supporting evidence, we reserve the right to forgo all or any of this testing. We reserve the right to conduct further testing, in addition to what is set out above, if required to validate your claims. The form and extent of assessment and testing will be determined by Nesta at its sole discretion.

AWARDING THE PRIZE

If the Panel judges that the testing supports your claims and that the submitted test therefore fully meets the Prize criteria, they will recommend to the Longitude Committee the award of the Longitude Prize. If in the opinion of the Panel, the testing does not sufficiently support your claims, your application will be unsuccessful. Detailed feedback will be provided explaining why the entry did not meet the necessary requirements.

LONGITUDE COMMITTEE

The Longitude Committee will make the final decision as to whether your entry meets the criteria and Challenge Statement.

The Longitude Committee meets twice a year. Recommendations made by the Prize Advisory Panel will be heard at the next Committee meeting following the Panel’s recommendation.

If the Longitude Committee agree that your entry meets the criteria and Challenge Statement in full you will be awarded the Longitude Prize.

The winning team must spend their prize money to develop and market their product as proposed in their winning entry so that it can create maximum global benefit and achieve the aims of the Longitude Prize. This requirement may be relaxed if the winning team can prove to the Longitude Committee that they will be able to create maximum global benefit and achieve the aims of the Longitude Prize without further development, for example, show that it will be utilised for public benefit through openly licensing their IP or demonstrating sufficient funding to commercialise their product.

The Longitude Committee reserve the right to not award the prize money if, in their opinion, no entries satisfy the criteria and aims of the Prize. If they choose not to follow the Panel’s recommendation, they shall provide comprehensive feedback to you and to the Panel as to why they have not awarded the Prize.

'ONE TO WATCH'

Those who do not meet the criteria but whom the external assessors and the Prize Advisory Panel consider show potential to solve the Prize in the future may be awarded 'One to Watch' status.

This status indicates that the innovation has significant potential to win the prize if developed further. The 'One To Watch' status of competitors will be published on the website and publicised by the Longitude Prize. If you are awarded 'One to Watch' status, you will be able to use this status and its associated badge on your promotional materials.

This status does not signify any monetary or in-kind reward or guarantee of future success in the competition

RESUBMISSION

If your entry is unsuccessful, you will be able to resubmit an improved entry to the Longitude Prize eight months after receiving your rejection from the Longitude Prize.

APPEALS

If you disagree with the decision made at any stage of the assessment process you can contact the Longitude Prize on the details provided at the end of this document. We will respond to your enquiry within seven working days. If our response is unsatisfactory we will provide you with further information about how you can escalate your appeal.

INTELLECTUAL PROPERTY

The Longitude Prize winner will retain all intellectual property rights. However if the competitor fails to develop and exploit their rights within five years of the award of the Prize, a license will be granted to Innovate UK or Nesta to develop and exploit the intellectual property rights (see Terms and Conditions for more details).

CONFIDENTIALITY

Please identify any confidential or sensitive information included in your entry. All individuals that can access, view or judge application forms and supporting evidence submitted by competitors will be required to sign nondisclosure agreements. Once entries have been processed they will be kept for twelve months or until there is no reason related to the management of the Longitude Prize for us to keep them.

SUPPORT

Nesta will work with partners to provide support to competing individuals and teams, with the aim of helping competitors gain knowledge and skills in areas where they might lack expertise. This could take the form of workshops on regulatory requirements, business development, intellectual property, and healthcare issues, and speed-dating sessions where competitors can look for collaborators and source necessary external expertise.

LONGITUDE DISCOVERY AWARDS

The original Longitude Prize succeeded in part due to the financial rewards distributed to promising competitors. John Harrison received a large amount of money in 'grants' to help develop his idea.

Concurrent with the Longitude Prize we fund early-stage transformative novel approaches with smaller sums of money, meaning that we can create and maintain a broader base of research working towards meeting the aims of the Longitude Prize. We want to encourage as many innovators who are developing novel ideas as possible to enter the Longitude Prize, rather than simply rewarding research which was already in development. These awards are called the Longitude Prize Discovery Awards.

PUBLIC ENGAGEMENT

Antibiotics was voted as the Longitude Prize challenge by the UK public during a phone and online ballot held between 22nd May and the 25th June 2014. We have also heard the opinion of a wide variety of people in focus groups throughout the development of the prize themes. The science and technology that is developed for the Longitude Prize will have a direct impact on the public through health service provision; therefore it is important that a wide variety of people are consulted. The Longitude Prize will continue to facilitate the coming together of the public, scientists and other expert stakeholders to deliberate and reflect on the development of technology that will radically change health care.

PRIZE TERMINATION

We reserve the right to suspend or terminate the Longitude Prize if we determine that the Prize will no longer achieve its aims or is no longer relevant or useful; or if there are changes or developments outside our control that affect the Prize. This includes changes to the applicable law, or in medical, technological or scientific knowledge. Participation in the Longitude Prize is entirely at your own risk.

For further information please see the [Longitude Prize Terms and Conditions](#).

SECTION 5

OTHER REQUIREMENTS

ETHICS

You must comply with the relevant local laws or regulation governing your research. You are responsible for ensuring that ethical issues relating to your projects are identified and brought to the attention of the relevant approval or regulatory body. Approval to undertake the research must be granted before any work requiring approval begins. Ethical issues should be interpreted broadly and may encompass, among other things, relevant codes of practice, the involvement of human participants, tissue or data in research, the use of animals, research that may result in damage to the environment and the use of sensitive economic, social or personal data. In addition, you must comply with the Helsinki Declaration on Ethical Principles of Medical Research Involving Human Subjects if it provides for a higher standard of protection of humans than the local regulations. If evidence arises that shows that you have acted unethically or illegally, Nesta and the Longitude Committee reserve the right to disqualify you.

ACCESS TO DATA AND INFORMATION

To help ensure that the new knowledge produced as part of the prize has the greatest positive impact, the Longitude Prize strongly encourages the publishing of all non-sensitive research data in order to foster broadest possible access to data in the interest of collaboration, transparency, accountability and enhancing innovation.

We recognise that some data and findings may be commercially sensitive or have implications for individual privacy – in such cases the expectation to make findings publicly available is relaxed. You should provide evidence of your commitment to making data accessible, and provide reasons for why you have not done so in specific cases.

TERMS AND CONDITIONS

You must fully comply with our Terms and Conditions.

COMMUNICATION

If you need to communicate with the Longitude Prize please do so using the longitude.prize@nesta.org.uk email address.

You must not attempt to directly contact any external assessors or any of the Prize Advisory Panel or Longitude Committee members on Longitude Prize matters. All communications should be with the Longitude Prize team at Nesta. Any evidence of competitors trying to influence the Panel or Committee members in this way will lead to their disqualification.

KEY TERMS

DESIGN-LOCKED, OPTIMISED

The product's technical and physical design specification is finalised and has been optimised based upon results and feedback from formative evaluations.

GLOBAL⁶

Pertaining to the entire globe rather than a specific region or country.

GLOBAL HEALTHCARE

Point-of-care medical interventions that are applicable to the majority of healthcare situations globally.

POINT-OF-CARE

Point-of-care is the specific location at which a patient is presenting with illness – this could be at home, or in a range of primary and secondary healthcare settings. Point-of-care diagnosis therefore takes place close to the patient, rather than at a physically removed central laboratory.

TRANSFORMATIVE

New solutions that will revolutionise the prescribing and use of antibiotics globally rather than incremental changes to existing technologies.

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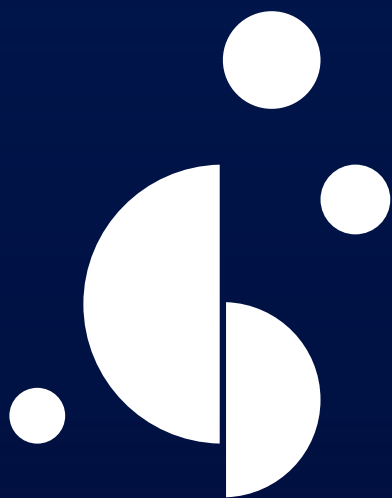
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ENDNOTES

1. Subject to the Eligibility Criteria set out in Part 2, Who can participate? p.9
2. If you or any of your team is under 18, you will need to provide written confirmation of parental or legal guardian consent to participate in the Challenge. Please see the Longitude Prize Terms and Conditions for further details.
3. You can view and explore examples of UK clinical pathways for many conditions on the NICE website;
4. For an example of feasibility research see Mbonye et al. 2010.
5. A good overview of medical device usability, also known as human factors engineering, can be found at FDA 2011.
6. See [www.businessdictionary.com](http://www.businessdictionary.com/definition/global.html#ixzz3JjbGSRie) <http://www.businessdictionary.com/definition/global.html#ixzz3JjbGSRie>



nesta

LONGITUDE PRIZE

Nesta
58 Victoria Embankment
London EC4Y 0DS

longitude.prize@nesta.org.uk

[@longitude_prize](https://twitter.com/longitude_prize)

www.facebook.com/longitudeprize

www.longitudeprize.org

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