National Institute for Public Health
and the Environment
Ministry of Health, Welfare and Sport

market consultation

Whole genome sequencing solution NIPT

Market consultation for a whole genome sequencing solution, such as (analysis) equipment, software, cell-free DNA blood collection tubes, test kits, reagents, and disposables for the non-invasive prenatal test (NIPT)

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Content

1 Introduction

1.1 General information RIVM

The National Institute for Public Health and the Environment (RIVM) is an agency of the Ministry of Health, Welfare and Sport (VWS). The National Institute for Public Health and the Environment has been promoting public health and safeguarding a healthy environment for more than 100 years. RIVM National Institute for Public Health and the Environment has a central role in infectious disease control and national prevention and population screening programs. We conduct independent (scientific) research in the field of Public Health, Health Services, Environmental Safety and Security. In our role as trusted advisor, we support citizens, professionals and governments in the challenge of keeping the environment and ourselves healthy. The RIVM not only conducts independent scientific research for the Ministry of Health, Welfare and Sport, but also for other departments, such as the Ministry for Infrastructure and the Environment and the Ministry for Economy, Agriculture and Innovation.

The RIVM consists of three knowledge domains, each of which is led by a director. These three knowledge domains are Infectious Diseases and Vaccinology, Environment and Safety and Public Health and Care. Within these three domains associated specialist knowledge centers resides. For more information about RIVM, see: https://www.rivm.nl/over-het-rivm / organization.

The centre for Population Screening (CvB) falls within the domain Public Health and Care. The Centre for Population Screening directs and coordinates the eight national population screening programs offered by the government. It is also responsible for the National Influenza Prevention Program. The centre connects the parties in policy making and implementation. It organizes and supports the network proactively and aims to further develop current population screening and successfully implement new screening. The Dutch national population screening program includes: breast cancer screening, cervical cancer screening, bowel cancer screening, antenatal screening for infectious diseases and erythrocyte sensitization (blood tests in pregnancy), screening for Down's, Edwards' and Patau's syndromes in pregnancy, Structural Ultrasound Scan (SEO, anomaly scan), neonatal blood spot screening, neonatal hearing screening. For more information see: https://www.rivm.nl/en/about-rivm/organisation/centre-for-population-screening

1.2 Rational for the market consultation

In January 2019, the Dutch Ministry of Health, Welfare and Sport commissioned the RIVM to conduct a feasibility study for the non-invasive prenatal test (hereinafter: NIPT). With the feasibility we look at how the NIPT can become part of the prenatal screening program of the Netherlands (coordinated by the RIVM). As a result of the addition of NIPT to the national screening program, a tender will be published within one to two years for the supply of certain products, such as cell-free blood collection tubes, and equipment required for DNA analysis, such as test kits, reagents, disposables and control materials. In order to obtain independent advice, RIVM has asked the consultancy firms Significant and Mitopics to develop scenarios and strategies for the tender. More background information can be found in chapter 3.

The RIVM wants to consult the opinion of the market before the tender procedures starts. Therefore a written open market consultation is prepared. With this market consultation suppliers and distributers are asked for information that can help with the elaboration of (a) tender strategy (s). RIVM is exploring the possibility of contracting NIPT as a total solution. Nonetheless, parties that supply only some parts of the NIPT solution are also invited to participate in this market consultation. The information and knowledge that is collected can contribute to a better definition of a tender strategy.

After this market consultation, additional questions may follow at a later date, or even in a subsequent market consultation (s).

1.3 Objectives

Objectives of the market consultation are to verify:

- Whether the assignment is feasible and the preconditions are realistic;
- Whether market parties are interested in the assignment and have the possibilities to execute or realize the assignment;
- Whether the need will lead to the optimum solution;
- Which standards may be relevant;
- Whether there are alternative solutions;
- What the best purchasing strategy will be to follow.

2 Rules

2.1 Procedure

The procedure for this market consultation is:

1. The market consultation starts by publication of this document on TenderNed;
2. Questions about the content and process can be submitted in writing via Tenderned no later than Wednesday July 3th, 2019. RIVM aims to answer the questions no later than Friday July 12th, 2019;
3. Any interested market party that wants to contribute to the market consultation is kindly inivited to submit the answers to the questions of this market consultation before but no later than Wednesday July 24th, 2019 (also indicated in TenderNed);
4. Submitting is done by clicking on the 'Submit' button in TenderNed;
5. All communication takes place via TenderNed;
6. The RIVM reserves the right, in response to the responses submitted, to invite the parties to provide additional explanations of their answers;
7. The RIVM will take notes for its own use of the consultation. The RIVM will not send the participating parties an abstract or report of the consultation.
8. All responses will be treated confidentially.

2.2 Clause

The following provisions apply to this market consultation. By participating in the market consultation, the participating market party declares to agree unreservedly to all the aforementioned provisions.

- It is explicitly stated that this market consultation is not part of a tendering procedure;
- The consultation is of a non-binding nature, both for RIVM and for the participating market party(s). Participating in the market consultation is entirely voluntary;
- No rights can be derived from the consultation, nor will participation in the consultation lead to any advantage or disadvantage in the tendering procedure that may follow thereafter;
- Refraining from participating in the consultation will not lead to exclusion from the tendering procedure that may follow thereafter;
- The market consultation is not an invitation to tender for the intended tender for which this market consultation serves as preparation;
- Participating parties cannot claim reimbursement of any costs incurred in the context of the market consultation;
- RIVM reserves the right to conduct the market consultation and the subsequent tender in a different way than described in this document and to discontinue the market consultation process in whole or in part;
- The information provided by the participants does not influence the choices to be made by RIVM in the intended tender;
- The information provided by RIVM during the market consultation may differ from the information provided at a later stage for the purpose of (a) possible tender (s).

3 Consultation

3.1 Background

At the end of 2016, the Dutch Health Council gave advice to the Ministry of Health, Welfare and Sport to introduce NIPT as a standard test for Down, Edwards and Patau syndrome. From, April 1st, 2017, the NIPT is presented as the first screening test within a scientific implementation study: TRIDENT-2. For the NIPT, blood is taken from pregnant woman (first trimester). The blood is tested in a laboratory to find out if there is evidence of down, edwards or patau syndrome in the fetus. The blood of the pregnant woman contains free circulating fetal DNA (cfDNA). These fragments are examined and if relatively many DNA fragments of chromosome 21, 18 or 13 are present, this is an indication of down, edwards or patau syndrome in the fetus, respectively. The RIVM is currently conducting a feasibilty study for the NIPT. In this study, the RIVM will investigate how NIPT can become part of the national prenatal screening program. As a result of the addition of NIPT to the national screening program, tender(s) procedure(s) will have to be started within 1 to 2 years, to procure products.

Screening process in TRIDENT-2.

Counseling

The healthcare professional (midwife or gynecologist) asks the pregnant woman if she wants information about screening, e.g down, edwards and patau syndrome. If so, counseling will follow. The pregnant woman is informed by the counselor about the possibilities for prenatal screening, including NIPT. If a pregnant woman chooses to do the NIPT, a second question will be asked. The pregnant woman is asked if she also wants insight into other findings than Down, Edwards and Patau syndrome.

Other findings can be serious or less serious conditions.

Payment

If a pregnant woman opts for prenatal screening with NIPT, she has to pay before the test can take place. Payments via www.niptbetalen.nl. The pregnant woman shows proof of the payment at the blood sample collection site.

Blood collection sites

In the current situation, 56 organizations (with a total of 173 blood collection points in the Netherlands) have been selected for taking blood for NIPT. These collection points are ISO certified.

Blood collection set

A special blood collection set is compiled for NIPT. This set now contains two blood tubes (with two barcode stickers), a return envelope for transport, instruction for blood collection and an application form for the laboratory.

Transport of the collected blood

The collected blood is transported from the blood collection points to the laboratories via courier services or via the medical post.

Analysis by the laboratories

In the current situation, three UMCs are performing NIPT analyzes: the VU Medical Center Clinical Genetics Amsterdam, the Maastricht University Medical Center Laboratory Clinical Genetics and the Erasmus Medical Center Laboratory Clinical Genetics.

Equipment

The laboratories currently carry out NIPT in a uniform manner with whole genome sequencing for screening for down, edward and patau syndrome. In addition, they use in-house software for screening for findings other than down, edward and patau syndrome.

Results in LIMS and Peridos
The digital lab application for NIPT and the receipt of the result goes through the ICT system Peridos. The blood tubes are scanned at the laboratory upon receipt so that they are registered in the LIMS of the lab. The result of the analysis is in the LIMS and is sent to Peridos.

3.2 Questions
You are invited to give a written response to the questions below.

NIPT as a total solution

1. The RIVM explores the possibility of contracting NIPT as a total solution. All the required products are then placed in one order. Products are the blood collection set and the equipment required for DNA analysis, with the associated hardware, software and consumables such as test kits, reagents, disposables and control materials. It concerns all products that are necessary for the implementation of NIPT from the processing of the blood samples up to and including the reading of the results.
    a. Is it necessary to purchase NIPT as a total solution (and thus a validated combination of the blood collection set and the DNA analysis required equipment as described above?
    b. Is it desirable to purchase NIPT as a total solution or do you see a different solution?
        i. If NIPT does not have to be purchased as a total solution, which components are connected in such a way that simultaneous tendering is desirable?
        ii. Which parts from the table below can you a) provide yourself, b) do you not provide, c) could you provide through a subcontractor, d) provide through a strategic partnership?
        iii. Which products or services connected to NIPT as a total solution are missing in the table below, according to you?

Part NIPT	Can you provide yourself	Can you not provide	could you provide through a subcontractor	could you provide through a strategic partnership
Cell-free DNA blood collection tube				
Blood collection set (including cell-free DNA blood collection tubes, with barcode sticker, a return envelope for transport, instruction for blood collection)				
Transport from blood collection set to blood collection location				
Test kits, reagents				
Validated lab equipment (e.g. pipetting robot, sequencer, including hardware)				
Validated NIPT-analysis software (For trisomy T21/18/13)				

Validated software for analysis data (other findings than down-, edwards- and patau syndrome)				
Other necassary products or services (e.g. disposables, control materials, training and maintenance)				

c. Do you see opportunities to offer NIPT as a total solution, possibly with subcontractors or a strategic partnership?
   i. What are important preconditions for this?
   ii. What risks and opportunities do you see here?
   iii. Which parts and / or combination of parts from the table above have been validated for your NIPT solution?
d. Which points of interest do you see in the collaboration with the laboratories that perform the blood analysis services? This includes issues, such as: handling of equipment and software errors, maintenance, batch changes, stock management of reagents and blood collection tubes.
e. What requirements do you have for the transport of the blood-filled blood collection tubes? Do you also have preconditions for the process (e.g. method of blood collection, storage, pre-treatment for analysis)?
f. How can you offer your service or product? For example: reagent rental, or sale with transfer of ownership.
g. What requirements do you have for transport conditions? Including: the transport of blood collection sets to the blood collection points, the transport of reagents to the laboratories, the transport of tubes with collected blood from the blood collection points to the laboratories. Conditions concern, for example, the temperature, speed, shelf life, etc.
h. What requirements do you have for the storage capacity and space capacity of the laboratory?
i. What requirements do you have for blood collection? E.g. method of storage, et cetera.
j. What is the maximum throughput (analysis capacity) per week of the solution (s) you can provide?
k. What is the minimum throughput (analysis capacity) per week of the solution (s) you can provide?
l. In addition to trisomy 21, 18 and 13, which other findings can you detect and to what extent has these other genetic defects been validated? (in which way).
m. What actions do you take regarding quality control and quality assurance? (QA / QC, control materials, sample shipments, et cetera)

Flexibility in the solution

2. With the NIPT, three disorders (down, edwards and patau syndrome) are now screened as standard. In the current situation, other findings are also reported, depending on the wish of the pregnant woman.
   a. To what extent can your solution analyze other findings and is a flexible choice possible?
   b. To what extent is it possible to only make raw data available?

The market

3. How do you characterize the market of NIPT providers? Think of: number of providers, maturity of the market, distribution of market share and the like.

Selection of a good solution and supplier

4. Which relevant requirements to the (quality of the) organization are important to you?
5. Which relevant quality requirements for the product or service are important? Which criteria,

do you think, helps to distinguish between parties?

4 Planning

For this market consultation, the following planning must be taken into account.

Fase	Date
Publish the market consultation	Friday 21st of June 2019
Interested parties can submit questions on the market consultation	Wednesday 3rd of July 2019
Send the answers to the questions submitted by the interested parties	Friday 12th of July 2019
Recieve the final responses by the interested parties on the market consultation (closing date market consultation)	Wednesday 24th of July 2019