

# Principal Expert Mathematical Modelling

Unit: Scientific Methods and Standards

Reference: ECDC/AD8/2023/SMS-PEMM

Applications are invited for the above Temporary Agent post at the European Centre for Disease Prevention and Control (ECDC).

## Job description

ECDC plans to recruit one person for the above-mentioned vacancy. ECDC also aims to establish a reserve list, which may be used for any future vacancies in the area.

The post is located in the Scientific Process and Methods (SPM) Section, within which the jobholder will report to the Head of Section. The SPM Section is based within the Scientific Methods and Standards Unit. The jobholder will provide expertise and leadership on mathematical modelling, and also provide the focus of expertise within ECDC on health economic evaluations, to inform infectious disease prevention and control policy and the understanding and forecasting of trends and impacts of determinants and disease.

The jobholder will be responsible in particular for the following areas of work:

- Lead the ECDC mathematical modelling work and provide strategic advice to the Centre;
- Analyse emerging topics and conceive and implement modelling and health economic studies to address public health questions;
- Identify critical knowledge gaps for infectious disease prevention and control that can be addressed with mathematical modelling;
- Implement forecasting methods for infectious diseases and their determinants, presenting scenarios and quantifying uncertainty;
- Work closely with experts across ECDC (e.g. epidemiologists, statisticians, surveillance, epidemic intelligence, and disease experts) and coordinate projects with a mathematical modelling or health economics scope involving experts across Units and Disease Programmes;

- Contribute to establishing and sustaining partnerships with existing modelling networks and experts, and with health economics experts, within public health institutes and academic institutions at Member State, European and international level;
- Propose methodological approaches for mathematical modelling and economic evaluations that can complement the development of ECDC's outputs;
- Stay up to date with the current literature on disease modelling and health economic evaluations and assess its value for ECDC's work and contribute to capacity building activities;
- Contribute to the planning, drafting, implementation and monitoring of work plan and budget;
- Contribute to other activities of ECDC, as required, in his/her field of expertise;
- May be asked to contribute to the 24/7 duty system of ECDC.

## Qualifications and experiences required

### A. Formal requirements

In order to be an eligible candidate you need to fulfil a set of formal requirements. These requirements are:

- A level of education which corresponds to completed university studies attested by a diploma when the normal period of university education is 4 years or more, or a level of education which corresponds to completed university studies attested by a diploma and appropriate professional experience of at least 1 year when the normal period of university education is at least 3 years<sup>1</sup>;
- At least 9 years of professional experience<sup>2</sup> (following the award of the diploma);
- Thorough knowledge of one of the official EU languages and a satisfactory knowledge of another official EU language to the extent necessary for the performance of his/her duties<sup>3</sup>;
- Nationality of one of the EU Member States or of Norway, Iceland or Liechtenstein;
- To be entitled to his or her full rights as a citizen<sup>4</sup>;
- To have fulfilled any obligations imposed by the applicable laws on military service;
- Meet the character requirements for the duties involved; and
- Be physically fit to perform the duties linked to the post.

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<sup>1</sup> Only diplomas and certificates that have been awarded in EU member states or that are the subject of equivalence certificates issued by authorities in the said Member States shall be taken into consideration

<sup>2</sup> Compulsory military service is always taken into consideration.

<sup>3</sup> Candidates with a non-official EU language or English as their mother tongue must provide proof of their level of a second language with a certificate (B1 or more).

In addition, in order to be eligible for a promotion through an annual promotion exercise the staff members have to have a working knowledge of a third EU language, as described in the applicable Staff Regulations and Implementing Rules.

<sup>4</sup> Prior to the appointment, the successful candidate will be asked to provide a certificate from the police file to the effect of non-existing criminal record.

## B. Selection criteria

To qualify for this post we have identified essential criteria with regard to professional experience and personal characteristics/interpersonal skills. These are:

### Professional experience/knowledge:

- At least 5 years professional experience (following the award of the diploma) in positions relevant to the job description, including experience in infectious disease modelling;
- Degree in biomedical sciences, epidemiology, natural sciences, (applied) mathematics, or related field;
- Excellent understanding of infectious disease epidemiology and proven experience in infectious disease modelling with high impact on public health decisions;
- Excellent understanding of health economic evaluations such as cost-effectiveness studies, burden of disease analyses, health technology and health impact assessments in the area of public health;
- Proven experience in managing large scale projects and experience in coordinating the input of experts from across different disciplines;
- Proficiency in the R statistical language and possibly additional programming skills in C++, Python or the Linux environment, and proven use of coding language to solve modelling problems;
- Excellent level of English, both written and spoken.

### Personal characteristics/interpersonal skills:

- Quality driven and service minded;
- Strong analytical, computational, statistical and problem-solving skills;
- Ability to work collaboratively in a multi-disciplinary and multi-cultural team and build strong working relationships;
- Good oral and written communication skills and ability to communicate effectively on public health matters, models and modelling results with persons from other disciplines and scientific areas;
- Results-oriented with good organisational skills and ability to work under pressure.

Depending on the number of applications received, the selection committee may apply stricter requirements within the aforementioned selection criteria.

## Equal Opportunities

ECDC is an equal opportunities employer and encourages applications from all candidates who fulfil the eligibility and selection criteria without any distinction on grounds of age, race, political, philosophical or religious conviction, gender or sexual orientation and regardless of disabilities.

## Appointment and conditions of employment

The jobholder will be appointed on the basis of a shortlist proposed by the Selection Committee to the Director. This vacancy notice is the basis for the establishment of the Selection Committee's proposal. Candidates will be requested to undergo written tests. Candidates should note that the proposal may be made public and that inclusion in the

shortlist does not guarantee recruitment. The shortlist of candidates will be established following an open selection process.

The successful candidate will be recruited as a Temporary Agent, pursuant to article 2f) of the Conditions of Employment of Other Servants of the European Union, for a period of five years which may be renewed. The appointment will be in grade **AD 8**.

Applicants should note the requirement under the EU staff regulations for all new staff to successfully complete a probationary period of nine months.

For any further information on contractual and working conditions, please refer to the Conditions of Employment of Other Servants of the European Communities, which are available at the following link:

<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A01962R0031-20140501>

The place of employment will be Stockholm, where the Centre has its activities.

## Reserve list

A reserve list may be created and used for recruitment, should similar vacancies arise. It will be valid until 31 December of the same year as the application deadline and may be extended.

## Application procedure

To apply for this vacancy, please create/ log in to your account via ECDC's e-recruitment system, complete all required sections of the application and submit it. **ECDC does not accept applications submitted by e-mail, mail or any other means.**

The closing date for the submission of applications is on 17 April 2023 at 11:59:59 (midday) Stockholm time. You are advised to submit your application well ahead of the deadline in case you face technical issues and/or if there is heavy traffic on the website. ECDC will not accept any applications after the deadline. Once you have submitted your application, you will receive an automatic e-mail message confirming receipt of your application. Please ensure that the email address you provide for your applicant account is correct and that you check your email regularly.

You can find an e-recruitment user guide and a guide on the ECDC recruitment and selection process on our website:

<https://ecdc.europa.eu/en/about-us/work-us/recruitment-process>

Due to the large volume of applications received, only candidates selected for interviews will be notified.

You can find the translation<sup>5</sup> of this vacancy notice in all EU languages here:

<https://www.ecdc.europa.eu/en/about-ecdc/work-ecdc/recruitment/vacancies/vacancy-translations>

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<sup>5</sup> While this vacancy notice has been translated into all official EU languages from its English original the language of day-to-day operations in the Agency is generally English. ECDC therefore prefers to receive the application in English.