

Development plan for the Division of Infection Control and Environmental Health

Norwegian Institute of Public Health 2019-2024

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Background

This strategic development plan shows how the Division of Infection Control and Environmental Health wants to develop in the coming years. The plan describes the Division's goals and initiatives from 2019 – 2024. In addition, the initiatives at the Division level are exemplified by more subject-specific initiatives that are more easily translated to departmental level. The development plan will be the starting point for more concrete plans and provide direction for activities within the Division. The goal is for the development plan to help the Division fulfil its social mission in the best possible way. Examples of activities under described focus areas are scientifically justified proposals, and no prioritisation of the examples or resource-related/financial assessments of the example projects in this note have been made.

The Division's core tasks

The Division of Infection Control and Environmental Health shall have high professional competence in the incidence and prevention of infectious diseases, as well as health effects of exposure factors in the environment, acute poisonings and infectious agents. The Division is responsible for all the core tasks (consulting, emergency preparedness, research, services and communication) of the department within this field. The Division has a broad emergency preparedness responsibility within infection control and environmental health protection (the Act on protection against communicable diseases, the Public Health Act and the Health Preparedness Act). The Norwegian Institute of Public Health is the Norwegian Institute of Infection Control (Infection Control Act §7-9) and many of the Division's activities are related to this task. Infection control, environment and health are also responsible for a number of reference functions in medical microbiology and for professional guidelines for the implementation of the national vaccination programmes, vaccine procurement and preparedness, as well as distribution of vaccines. In the next few years, the Division of Infection Control and Environmental Health will clarify and develop our role as technical advisor to the ministry and directorate, as well as provide support to the municipalities and the health services in environmental health protection and infection control.

The Division contributes to global processes and projects where we have national responsibility and expertise.

The challenge picture

Society is constantly changing and we are expected to be flexible and able to adjust the organisation and work tasks to changing requirements. Technological development and method development mean that the Division needs to build better infrastructure for knowledge and services. The digitalisation that takes place both in the health field and in society in general means that the number of data is increasing, and that other actors may also be relevant for analysis and interpretation in fields where the Division is currently the only actor. The Division must follow developments and be equipped to be able to assess new data sources and utilise the new data sources that we consider useful for our work. The Division must ensure that it has good analytical competence, so that we can make appropriate use of both internally generated and externally generated data. We must be able to assess and use relevant data sources, and analyse and understand data in order to provide timely advice.

Demographic changes and an increasing degree of globalisation mean that the challenges facing many of the current diseases the Division provides advice and information about are changing. Changes are expected in the size of risk groups for various diseases (e.g. as a result of the ageing population), and changes in disease burden conditions. Groups that are sceptical of the authorities' advice in various fields are growing elsewhere in Europe, and one should be prepared for similar developments in Norway even though the scope in this country is so far small. Increased problems with resistance are expected, and this is a stated focus area for the Division where we are establishing a centre. Climate change may give us new challenges, for example in the field of vector-borne diseases. Increased trade and travel activity for both people and animals, food and other goods and services have been pointed to by ECDC as one of the main drivers of the spread of diseases across national borders. Globalisation means that national and international challenges go hand in hand and national and international health are two sides of the same coin. Solving the challenges requires cooperation across sectors and national borders.

An additional challenge is that budgets have been reduced in recent years, and there are signals of continued scarcity of resources in the future.

The main challenges for the work in the Division of Infection Control and Environmental Health are therefore:

- The need to meet digitalisation in society
- The need for an increased degree of cross-sectoral cooperation nationally and internationally
- Need to do more with scarcer resources

This development plan is a priority measure to meet these challenges.

Organisational development of the Division

In connection with the OP in 2016, the Division implemented an organization based on line structure with formalized cross-cutting structures. In the period 2019-2024, the Division will focus on achieving greater flexibility in the organization both at management level and among employees in order to fully implement this structure. The division of responsibility for different functions will be clarified and interdisciplinary cooperation in the Division developed. It will also be possible to make ongoing organisational adjustments during the period to facilitate the OP's intention.

Development goals for the Division of Infection Control and Environmental Health in the period 2019-2024

As mentioned above, the Division of Infection Control and Environmental Health shall have high professional competence in the incidence and prevention of infectious diseases, as well as health effects of exposure factors in the environment, acute poisonings and infectious agents. In the years 2019-2024, the Division will focus on:

- Develop infrastructure, data and analysis platforms to produce and disseminate data of higher quality and to make better use of available data, thereby improving monitoring and improving the knowledge base for consulting, emergency preparedness and research.
- Further develop a robust and comprehensive emergency preparedness based on good professional competence, modern and effective analyses, clear and structured plans and systematic learning.
- Assist our users with effective and knowledge-based advice in infection control and environmental medicine and improve communication of these.

The Division has defined several initiatives within infrastructure, knowledge and emergency preparedness that build around the objectives (see figure 1). Goal attainment will also depend on the Division building stronger analytical competence, both in the form of distortions of competence among employees in the Division, and in recruitment processes.

Initiatives

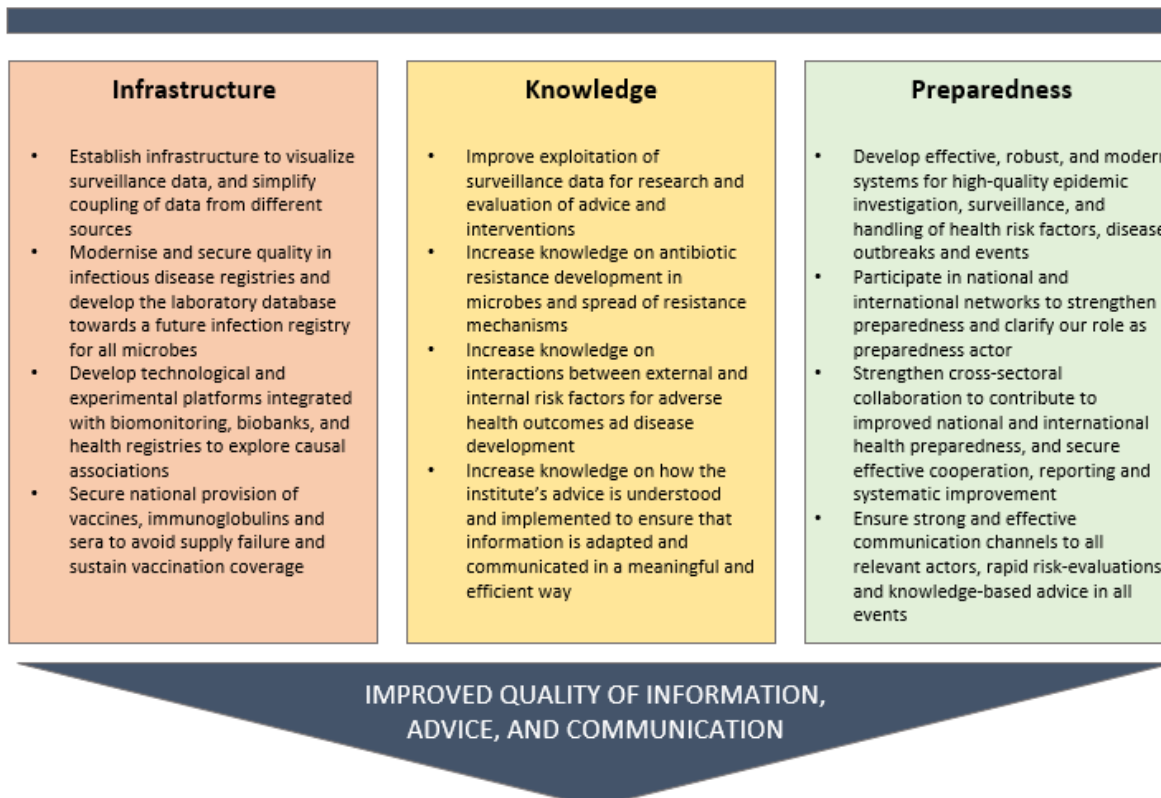


Figure 1. Schematic overview of the Division's initiatives in the period 2019-2024.

Infrastructure

The Division supplies infrastructure and services to the health service, other external actors and the population. This includes, for example, round-the-clock advisory services, establishment of a human environmental biobank, advice and risk assessments in the event of chronic exposures, reference functions in medical microbiology, vaccine procurement and vaccine distribution. The Division manages and develops infection control registries for infection surveillance and emergency preparedness with operational and data processing responsibilities.

Satsinger:

1. Establish infrastructure for visualization of monitoring data, and easier linking of data from different sources.
2. Modernise and ensure good quality in the infection control registries and develop the laboratory database towards a future infection registry that includes all microbes
3. Develop technological and experimental platforms, integrated with biomonitoring, biobanks, health registries and health surveys to investigate causal relationships.
4. Ensure good, secure national supply of vaccines, immunoglobulins and sera to avoid supply shortages and maintain good vaccination coverage.

Examples:

Establish infrastructure for visualization of monitoring data, and easier linking of data from different sources.

- Ensure good and timely dissemination of monitoring data to internal and external users.
- Develop disease burden models for overview and real-time information for diseases and resistant microbes relevant to the Division.
- Establish a platform with user-controlled access where, for example, municipal medical officers can view monitoring data from their municipality with timely data.
- Develop models and analytical tools for processing data from infection control registries and present data in a more user-friendly way.
- Develop a professional system for post-vaccination events that improves the quality of surveillance of adverse reactions by better facilitating the availability of data at the individual level. Better availability of adverse reaction data for research.
- Develop the possibility of quick and easy linkage between SYSVAK and MSIS for rapid clarification of the proportion of vaccinated cases in MSIS, vaccine failure, quality assurance, reporting to WHO and ECDC.
- Further develop internal infrastructure so that IT systems and analysis programs within laboratory operations and monitoring can deliver data more efficiently.
- Work to make health registries unique, to ensure that they can be linked to other health registries, both to quality assure data, but also to be able to optimize the use of collected information and contribute to useful management data

Modernise and ensure good quality in the infection control registries and develop the laboratory database towards a future infection registry that includes all microbes

- Work for electronic clinician reports to MSIS.
- work to ensure that a future infection registry also includes healthcare-associated infections
- Work for the establishment of a National Infection Registry.
- Work for the establishment of a national laboratory database.
- Work for electronic analysis results from NIPH.
- Work for easier access to linking of various registers to find causal relationships.
- Enhancing the quality of the registers:
 - Systematic evaluation of surveillance of the individual disease that is notifiable, type of infection and microbe.
 - Improve the quality of data into existing surveillance systems by modernising infection control registries.

Develop technological and experimental platforms, integrated with biomonitoring, biobanks, health registries and health surveys to investigate causal relationships.

- Further develop laboratory activities through the use of new technology such as CyTOF, flow cytometry, Luminex, whole genome sequencing, *in vitro* systems, etc.
- Establish advanced *in vitro* models (cocultures, organoids, organ-on-a-chip) to better model/study effects in tissues/organs, which will contribute to the detection of causal relationships.

Ensure good, secure national supply of vaccines, immunoglobulins and sera to avoid supply shortages and maintain good vaccination coverage.

- Provide preparedness in the event of a new pandemic, both the right to buy a vaccine and a trained distribution system to distribute it.

Knowledge

With increasing digitalization, the amount of data available in various fields is increasing, and the Division needs to develop greater analytical competence. By producing data of higher quality and making even better use of available data, we will conduct better monitoring and improve the knowledge base for consulting, emergency preparedness and research.

The Division has a large portfolio of research projects. The Division's research will support our deliveries. There is a need for the externally funded part of the research to increase in the next few years. The research will support the strategy for the Division and the institute and our deliveries. This means that the research will be directed towards a more limited number of research topics. One of the research topics to be strengthened is antimicrobial resistance (AMR), and NIPH has therefore established the Centre for Antimicrobial Resistance.

Satsinger:

1. Make better use of monitoring results and registry data for research and evaluation of advice and measures.
2. Increased knowledge about the development of resistance in microbes and the spread of resistance mechanisms.
3. Increased knowledge about the interaction between different external and internal health risk factors for health outcomes and the development of disease.
4. Strengthen knowledge summaries and health technology assessments for advice and measures.
5. Increased knowledge of how the Institute's advice is perceived and translated, to ensure that information is adapted and communicated in a good and effective manner.

Examples:

Make better use of monitoring results for research and evaluation of advice and measures.

- Understand the prevalence of infectious diseases and the effect of infection control measures.
- Identify risk groups that do not have the expected effect of vaccination measures, such as cases of vaccine failure.
- Work to connect different data sources to a greater extent and look at new connections Better interaction and research collaboration between the different Divisions at NIPH.
- Building a system for burden of disease modeling.

Increased knowledge about the development of resistance in microbes and the spread of resistance mechanisms.

- Understand the link between genetic and phenotypic resistance and be able to predict the spread of resistance *in silico*.
- Integrate molecular and epidemiological data into models for increased understanding of transmission dynamics and better control of resistant microbes.
- Continuous monitoring of resistance and incidence of new resistance markers.

Increased knowledge about the interaction between different external and internal health risk factors for health outcomes and the development of disease.

- Build expertise in advanced *in silico* and *in vitro* models, epidemiological data and disease burden estimates.
- Integrate experimental research, biomonitoring, biobanks and epidemiology for more holistic studies of complex issues.
- Utilise existing biobank material to obtain a better overview of the population's exposure to environmental pollution and its importance for health.
- Build competence on interactions between various external health risk factors, such as indoor climate, mixed exposures, interaction between exposure to environmental toxins and diseases, significance of exposure to environmental toxins for vaccine efficacy, socioeconomic status.
- Build knowledge about the impacts of climate change on current and future health in Norway, including the spread of infectious diseases from food and water, vector-borne diseases, interactions with air pollution and impacts on food production.
- Build competence on the interaction between external health risk factors (environmental toxins, infectious diseases, socioeconomic factors, lifestyle factors, drugs in overdose) and internal health risk factors (microbiota, genetics, inflammation responses, existing, cyp genotype) to better understand susceptibility in the population.
- Contribute to generating new knowledge and a valuable overview of events in the water supply that may cause health consequences for the population

Strengthen knowledge summaries and health technology assessments for advice and measures.

- Develop a methodbook for evidence-based counselling.
- Strengthen competence and increase resources for health technology assessments to assess the introduction of new vaccines or changes to vaccines administered under public auspices (programme or blue prescription).
- Develop methodology for better and faster knowledge summaries in the context of emergency preparedness through increased collaboration with the Division of Health Services
- Strengthen expertise and increase resources for health technology assessments to assess the effect and cost-effectiveness of other measures in infection control and the environment in order to increase decision support for these fields.
- Increase research-based knowledge and innovation in vaccine development as well as evaluation and optimization of vaccination programmes.
- Increase research-based knowledge and innovation in access to antibiotics
- Ensure that new knowledge is implemented in counselling by systematically reviewing the most relevant literature in the field of poisoning, conducting knowledge summaries at the appropriate level and making treatment recommendations that are kept up-to-date.
- Ensure that information and advice to the general public and the health service is evidence-based and disseminated effectively.

Increased knowledge of how the Institute's advice is perceived and translated, to ensure that information is adapted and communicated in a good and effective manner.

- Carry out *Knowledge, Attitude and Practice (KAP)* studies on our advice in various fields (e.g. our advice for protection against tick bites, our advice for hand hygiene in healthcare).

[Dokumenttitel]

- Call back to those exposed who contact the Poison Information Centre to see to what extent the advice was understood and followed, and whether the course of poisoning was as expected.

Preparedness

The Division shall monitor the national and participate in monitoring the international epidemiological situation of infectious diseases, thereby keeping track of international health threats. The Division must also have an overview of environmental incidents with an impact on the population and changes in the poisoning picture. In the years 2018-2024, the Division wants to further strengthen its emergency preparedness work. We will build a robust and comprehensive emergency preparedness based on good professional competence, modern and effective analyses, clear and structured planning and systematic learning.

Satsinger:

1. Develop effective, robust and high-quality, modern systems for epidemic intelligence, surveillance and management of health risk factors, outbreaks and incidents.
2. Participation in national and international networks in the emergency preparedness area to strengthen preparedness and clarify our role as an emergency preparedness actor.
3. Strengthen cross-sectoral cooperation to contribute to better national and international health preparedness, and ensure effective collaboration, reporting and systematic improvement.
4. Ensure good and effective lines of communication with all relevant actors, quick knowledge summaries and risk assessments, and timely knowledge-based advice in the event of incidents.

Examples:

Develop effective, robust and high-quality, modern systems for epidemic intelligence, surveillance and management of health risk factors, outbreaks and incidents.

- Have robust systems for early detection of incidents and ensure rapid coordinated response to outbreaks and public health threats.
- Assess the use of new data sources for monitoring purposes, e.g. social media, BigData.
- Develop spatial analysis tools with short-term prediction for increased room for manoeuvre.
- Develop root-cause analysis tools
- Assess the need to develop a method for and possibly regularly carry out mapping surveys in the health service to identify any challenges in the field of infection control
- Assess the need to develop a system in cooperation with the health service for notification between different health institutions about ongoing outbreaks
- Ensure the defined level of preparedness for emergency phones in infection control, microbiological preparedness, drinking water and poisonings
- Strengthen national management of acute and serious incidents in the water supply through advice and knowledge building
- Further develop and modernise infection control registries to provide rapid, high-quality information to the health service, authorities and the population.
- Provide for and contribute to local and national preparedness plans for outbreaks of infectious diseases and environmental incidents.
- Carry out exercises to test the robustness and operability of the systems.
- Secure emergency stocks of vaccines, immunoglobulins and sera for Norway (incl. Armed Forces).

Participation in national and international networks in the emergency preparedness area to strengthen preparedness and clarify our role as an emergency preparedness actor.

- Participate in and influence global processes for the development of emergency preparedness measurement tools in Norway, Europe and the world.
- Participate actively in networks in the field of monitoring and emergency preparedness under the auspices of the European Commission, ECDC and WHO.
- Become a stronger voice internationally by communicating surveillance data and infection control.

Strengthen cross-sectoral cooperation to contribute to better national and international health preparedness, and ensure effective collaboration, reporting and systematic improvement.

- Participate in network meetings and influence the development of tools for improving health preparedness internationally as well as nationally.
- Support One Health collaboration in defined partner countries
- Participate and contribute to the further development of good cooperation models for Crisis Committee B, and cooperative area CE
- strengthen coordination and utilise expertise across sectors for better preparedness
- Strengthen civil-military cooperation and common methodology through joint educational pathways in field epidemiology and in the laboratory

Ensure good and effective lines of communication with all relevant actors, quick knowledge summaries and risk assessments, and timely knowledge-based advice in the event of incidents.

- Ensure quick access to contact information for all the country's municipal medical officers for use in crises.
- Maintain good cooperation with the Norwegian Medicines Agency to ensure effective and good handling of unexpected events after vaccination.
- Develop methodology for quick knowledge summaries
- Strengthen the use of HelseCIM for effective and rapid notification and reporting to relevant actors in the event of incidents and crises

Operationalization

Current plans:

1. Foundation Strategy (5-year)
2. Business plan (annual – top management document)
3. Disposal letter (annually – here it is stated which assignments from the activity plan have been assigned to the Division, also reflect tasks from the letter of allocation)
4. The Division's development plan (That is, this one you are now reading 😊. The development plan is 5-year)
5. Division plan (annual. Reflects disposal document and development plan)
6. Departmental activity plans (annually)

Planverk nevnt in points 1 to 3 and point 5 is located [here](#).

Ad items 4-6:

The development plan is initially valid for a five-year period. The development plan, together with the Disposal Paper, will form the basis for annual Division Plans. The Division plans in turn form the basis for the annual departmental plans.

In the Division Plan, initiatives to be initiated and implemented during the year will be described in more detail. The site plan is an important tool for resource allocation. The departments' activity plans describe the departments' mandated and self-initiated activities.

Division management's responsibilities:

The Division management is responsible for preparing the annual Division Plans. The Division management shall also prepare timelines for the implementation of the development plan, with specific milestones. Responsibility for the implementation of the various initiatives is assigned to the technical directors, who ensure good coordination and resource allocation between departments within each goal and each initiative.

The initiatives are entered in the action portal with the relevant technical director as responsible for follow-up.

Responsibilities of Department Directors:

The department directors are responsible for incorporating activities that reflect the initiatives into their departmental plans, and for following up these activities.

Division management and department directors must work together to ensure sufficient resources for implementation. Prioritisation of activities should take place in dialogue between department directors and Division management. This is to ensure a comprehensive prioritisation in the Division.