EVH Regulatory Preparedness Strategy - Executive Summary

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The European Vaccines Hub (EVH) serves as a coordinative platform for the development of pandemic vaccines and monoclonal antibodies (mAb). Its ambition is to support vaccine and antibody development across all stages, seamlessly leading to large-scale manufacturing and marketing authorization. To fulfill this objective the EVH will follow the Vaccines Readiness Plan (VRP), which covers the relevant aspects from pathogen selection to pre-pandemic vaccine development and stress testing of the network. This document specifically addresses the EVH strategy for anticipation and preparation for challenges that might impede product development, manufacturing and marketing authorization in a pandemic.

In emergency outbreak situations, the EVH will take a central role in enabling rapid access to data and coordination of fast-track authorization pathways already established by EMA, including rolling submissions and adaptive trial designs. Moreover, EVH will interact with regional authorities overseeing production sites. The following major action fields for EVH preparatory regulatory activities have been identified:

1. **Warm-base and preparedness concepts throughout the EVH**. EVH partners will seek early engagement with the EMA to obtain regulatory alignment on critical development and manufacturing processes and approval of selected pre-pandemic products. For example, EVH-supported prototype candidates for epidemic and pandemic vaccines will be developed through completion of phase II clinical trials followed by submission of a regulatory dossier to confirm the formal acceptability of the strategy for an accelerated product development in an epidemic or pandemic situation. These actions will further include qualification and validation of assays to be used for preclinical and clinical testing, clinical trial protocols, manufacturing processes and qualification of quality control methods for batch release testing. In particular, the EVH will further engage in progressing the regulatory positioning of platform technologies for rapid pandemic vaccine development and manufacturing in public health crisis.
2. **Measures to accelerate vaccine development and manufacturing.** The EVH will evaluate new approaches to speed up individual development phases and the seamless transition through all development stages to marketing authorization. To this end, the EVH will leverage the application of AI and machine learning tools, will attempt to prepare CHIM studies suitable for products and pathogens of pandemic relevance, develop innovative *in vitro* models for preclinical and clinical testing and platform-, cohort- and epidemiology-based innovative clinical trial designs.

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To achieve these objectives, the EVH developed a dual approach to tackle the predictable regulatory hurdles, which relies on 1) support for individual product candidates and preparedness activities within and in cooperation with the EVH, and 2) overarching activities that contribute to the identification of unresolved general regulatory issues, promote global harmonization of regulatory pathways and/or data provision facilitating regulatory decision-making in a pandemic scenario. The EVH regulatory team will function as a contact point for EMA and national competent authorities regulating medicines and their production to proactively communicate regulatory needs and support the regulatory path to approval of EVH product candidates.

Product and preparedness support: The EVH regulatory team will provide comprehensive guidance during development of product candidates as well as preparedness activities requiring pre-approval strategies such as standardized clinical trial protocols or CMC files for pandemic readiness. It will address regulatory requirements in early development and pandemic preparedness to increase efficiency and ensure regulatory acceptability through provision of documentation, safety standards and GxP compliance.

Strategic support of regulatory preparedness: The EVH regulatory team intends to become an important driver of pandemic-related topics of regulatory relevance. It will shape the discussion and drive regulatory innovation through think tanks and white papers in key areas where identification of regulatory gaps and regulatory harmonization are needed. These activities will focus on critical aspects of pandemic preparedness such as platform-based vaccine regulation, innovative clinical development concepts during epidemic and pandemic crises, crisis-ready manufacturing concepts, and alternative administration routes.

Regulatory research concept: The EVH will identify areas where regulatory decision-making is hampered by lack of data and uncertainties that affect pandemic preparedness strategies in vaccine development and manufacturing. Based on these analyses, the EVH will initiate research projects to obtain data and analyses that facilitate regulatory decision making in these areas.

Communication and education: The EVH will proactively reach out to relevant stakeholders and partners within and outside of EVH to establish a cross-sectorial expert network to provide a platform for exchange on pandemic-relevant regulatory topics. It will further contribute to develop and maintain regulatory-relevant expertise through educational and training activities. Transparent communication of EVH activities and developments will be implemented to build public trust and counteract misinformation.

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