

Swiss Personalized Health Network (SPHN)

Call for proposals: Demonstrator Projects

17 May 2022

1. Aim and scope

The Swiss Personalized Health Network (SPHN) aims at bringing Switzerland to the forefront of personalized health research by establishing coordinated research infrastructures and processes for the use and exchange of FAIR health-related data for research purposes. The network fosters the interdisciplinary exploitation of health-related data to develop innovative approaches in prevention, diagnosis, and treatment of disease. In the context of personalized health, these data typically involve large datasets, allowing data-driven or multi-omics analytical research approaches. SPHN has created common infrastructures and a change in culture to share health data between institutions and research groups in Switzerland, actively involving patients and healthy individuals.

“**Demonstrator projects**” demonstrate the added value of the SPHN data resources and infrastructure elements for data-driven personalized health research, clinical and public health research, and clinical use. Demonstrator projects **use the SPHN infrastructures, processes, and frameworks**, to demonstrate the utility and fit-for-purpose of those SPHN ecosystem elements and to identify gaps.

Demonstrator projects in the following two areas are eligible for funding:

- A. **Infrastructure components:** Operational application (in daily practice) or transferability (to another setting) of infrastructure components, systems or tools developed locally along the goals of SPHN or as part of SPHN-funded projects;
- Infrastructure components can be data platforms, data-processing tools, etc. of minimum viable product (MVP) maturity that serve the goals of SPHN. Examples include, but are not limited to, products of previous SPHN-funded Infrastructure Development and Driver projects, tools to automatize structuring, deidentifying or otherwise processing health data for personalized health research and application.
 - Operational application must be based on real-world use cases, for instance from research, clinical care and quality assurance, and public health.
 - Transferability to another setting comprises the successful onboarding of new stakeholders, for instance from additional institutions, from different fields of research/care, or for a new purpose than the original setting.

- The vested interest from the (new) stakeholders, the feasibility of implementing the infrastructure component, its added value and costs for the specific use case shall be demonstrated and ideally quantified.

B. Routine healthcare data: Leveraging the potential and validating the use of routine healthcare data from the UH Clinical Data Warehouses (CDW) for translational and clinical research projects, clinical trials (proof-of-principle studies), or other real-world use cases;

- The main source of data must be routine healthcare data readily available from the UH CDW.
- The routine healthcare data shall then be used and further processed for a real-world use case from research, clinical care and quality assurance, public health, etc. This may include proof of principle studies how routine healthcare data could facilitate or complement randomized clinical trials in the future.

Demonstrator projects may include international collaborations or public-private partnerships (see requirements below) and could synergize with ongoing SPHN projects, projects funded by the ETH Domain «Strategic Focus Area in Personalized Health and Related Technologies» (PHRT), or research projects funded through other instruments and organizations.

Demonstrator projects shall not build new infrastructure from scratch, but consolidate what has been started, complement missing links, and assess applicability and impact on clinical decision making and personalized health research.

To “test drive” the infrastructure, processes and interoperability of SPHN in a research or real-world clinical context, milestones of Demonstrator projects shall reveal and report the readiness of the infrastructure to support the specific use case.

An independent expert panel will evaluate the applications and provide a shortlist of outstanding proposals. The National Steering Board of SPHN will make its final selection based on this shortlist.

2. Key information

2.1 Budget

SPHN will allocate up to **CHF 3.7 million** for Demonstrator projects. Demonstrator projects are envisaged to span 12-18 months and can be funded by SPHN with CHF ~200'000 up to 500'000 max. Funding by SPHN requires matching contributions by the applicant institutions.

2.2 Timelines

17 May 2022	Launch call for Demonstrator projects
31 August 2022 (23h59 CET)	Submission deadline
End of November 2022	Selection of Demonstrator projects by the NSB
01 December 2022	Earliest start date of Demonstrator projects (latest: 01 April 2023)
30 September 2024	Latest end date of Demonstrator projects

3. Background information

The long-term goal of SPHN is to establish a Swiss network in personalized medicine/health, in which all relevant biomedical research institutions, university (and other research) hospitals, research funding organizations, public health institutions/authorities (e.g., Federal Office of Public Health) and patient/citizen organizations are included.

In the first period 2017-2020, funding priority by SPHN was given to the development of nationally coordinated data infrastructures enabling interoperability of local and regional information systems. The second and final SPHN funding period 2021-2024 will focus on the consolidation and sustainability of these infrastructures within the Swiss research and healthcare landscape.

SPHN closely aligns and synergizes with PHRT, a strategic focus area of the ETH Domain that is complementary to SPHN. By supporting innovative research in ETH Domain institutions, PHRT's goals include improving the quality of personalized health and precision medicine by providing a choice of individual therapeutic strategies for patients, by developing new tools for diagnosis, disease prognosis, treatment prediction and by identifying new drug targets.

4. Legal basis

This call for proposals is published in accordance with the Funding Regulations of SPHN and with the mandate of SERI. Demonstrator projects fall under the category of "Driver" projects. The call document describes the specific requirements for the award of grants, details regarding the application and evaluation procedures, and the rights and obligations of the grantees. Unless defined in this document, the provisions of the Funding Regulations of SPHN apply.

5. Funding requirements

5.1 Basic requirements

- Applications must align with the overall goals of SPHN and describe how the project will test, validate, consolidate or extend available SPHN infrastructure by i) determining its level of maturity, ii) demonstrating its added value for personalized health research and/or clinical application and iii) identifying the infrastructural gaps.
- Applications must be tightly coordinated with the respective infrastructure platforms and all data providers and data processors (e.g., BioMedIT). To limit the burden on data providers such as CDWs at the university hospitals, Demonstrator projects should use readily available data (i.e., data that can be provided by the CDWs within approximately 12 weeks).
- Principal investigators (PIs) from ongoing or completed SPHN projects (main applicants and co-applicants) submitting a Demonstrator project proposal based on the infrastructure developed within their SPHN project must show that the scope of the projects is clearly distinct though it may be synergistic (no double-dipping).
- Adherence to the current valid version of the SPHN Ethical Framework for Responsible Data Processing and the SPHN Information Security Policy is a condition for receiving SPHN funding. The SPHN recommendations for Reporting Actionable Genetic Findings to Research Participants should be

followed. Applications involving the establishment of public-private partnerships (PPPs) need to adhere to the respective Guidance on Ethical Health Data Sharing in PPPs. Applicants should consult the SPHN webpage for information about the newest versions of these documents

- Grantees commit to collaborate constructively with other SPHN and PHRT projects and SPHN partner institutions and, in particular, with the Data Coordination Centre (dcc@sphn.ch) on the choice of IT architecture.
- Controlled third-party access to data, results, and tools is a mandatory requirement in accordance with the FAIR principles and provisions of the SPHN Funding Regulations (Section 2.1).

5.2 Requirements concerning governance

- Appropriate governance mechanisms must be put in place with respect to access to and sharing/processing of infrastructures, data, results and tools. Such governance mechanisms must adhere to the FAIR principles, meaning that infrastructures/data/results/tools must be findable, accessible, interoperable and reusable. Points of contact, documentation, data catalogues etc. need to be available for all infrastructures, data, results, and tools to make them findable and understandable for the research community.
- Governance should rely on the developed SPHN CA/DTUA/DTPA templates, use the ELSI Helpdesk and adhere to the recommendations for data sharing and PPP guidelines, if applicable.
- If services from Clinical Trial Units are expected, these should be contacted early on to discuss requirements and resources.

5.3.1 Requirements concerning data/samples

If applicable to the nature of the project, the following requirements apply:

- The concept of FAIR data is central, technical interoperability and exchange of data must adhere to the SPHN Interoperability Framework and SPHN and SBP standards, including data-encoding standards (e.g. LOINC, SNOMED-CT, ICD-10, ICD-O-3, CHOP, ATC).
- A data management plan, covering data types to be used in the project, data flows, data quality and security concept, and how FAIR criteria will be adhered to, needs to be submitted according to the SPHN guidelines.
- At the end of the project, enriched research datasets shall remain in a FAIR repository.
- Wherever feasible, the BioMedIT network¹ shall be used.
- Projects must proactively contribute to the further development of the SPHN Interoperability Strategy.

For projects using samples, the applicants should follow SBP minimum requirements related to sample management.

For Demonstrator projects **type B** (routine healthcare data):

¹ <https://sphn.ch/network/projects/biomedit/> and www.biomedit.ch

- The main source of data must be routine healthcare data readily available (i.e., within approximately 12 weeks) from the UH CDW and provided in RDF format.
- An overview of available data types from UH CDWs can be found on the [SPHN website](#).

Prospective applicants **must contact the responsible persons for CDW data requests as soon as possible** to clarify requirements and resources. The SPHN Data and Concepts Table must be used to specify the data.

Single points of contact for UH CDW data requests:

- USZ: ctc-rdsc@usz.ch
- Inselspital: productline_LF@insel.ch (Dominique Furrer)
- CHUV: solange.zoergiebel@chuv.ch
- HUG: catherine.chenaud@hcuge.ch
- USB: bram.stieltjes@usb.ch

5.4 Requirements relating to impact and sustainability

- Projects need to demonstrate the value of the used infrastructure, for instance for data-driven research, healthcare of patients, and/or citizens, to increase the support base of SPHN infrastructure and to ultimately incentivize stakeholders to keep investing in the infrastructure beyond SPHN.
- Applications should show how patients benefit from and are engaged and involved in the project (patient and public involvement, PPI).
- Data should be collected in a scalable and sustainable manner. Prospective collection of data should be embedded in systematic and sustained clinical, research (and molecular if appropriate) data acquisition within the normal clinical/research activity through sustainably standardizing and harmonizing data capture at the source or on extract-transform-load processes. Manual curation of retrospective data must remain minimal.

5.6 Required outcomes/deliverables

For all Demonstrator projects:

- Reports with feedback to SPHN what is fit for purpose and where are the gaps
- Research paper and other forms of dissemination, contributing to increasing the visibility of SPHN infrastructures.
- FAIR datasets, results and tools accessible to the research community under appropriate governance

For Demonstrator projects type A (infrastructure component):

- Complete documentation for technical deployment and maintenance (including costs) and for end-users.

5.7 Requirements for applicants

5.7.1 Eligibility:

Each proposal submission requires the designation of a **main applicant** responsible for corresponding with SPHN and for setting up and managing the consortium (i.e., co-applicants and/or associated applicants) for his/her proposal (if applicable). The main applicant and co-applicants need to be employed as PI / group leader (or similar) for the entire duration of the project at a higher education institution (ETH/EPF, universities, universities of applied sciences), or university hospital in Switzerland. **Co-applicants** are fully eligible to receive SPHN funding.

Associated applicants: Wider participation of various institutions is desired. For instance, other hospitals (e.g., cantonal hospitals) and research institutions (including research facilities of national importance as defined by Article 15 of the Federal Act on the Promotion of Research and Innovation) are encouraged to associate with SPHN partner institutions and to submit joint applications.

Associated applicants are employed at other research institutions or hospitals. As a general rule, costs for all associated applicants combined should not exceed 20% of the total grant from SPHN. Their involvement in the development and implementation of the project must be justified.

Research groups located in a foreign country can be included to demonstrate interoperability of SPHN with international consortia. Applicants located in countries outside of Switzerland are not eligible for SPHN funding.

5.7.2 Collaboration with industry

For-profit organizations can collaborate with a consortium led by a SPHN partner institution and may participate as co- or associated applicants on a project basis; however, they must cover their efforts with their own resources and provide a legal agreement regulating the general principles of collaboration and principles under which conditions data are disclosed to the parties. Such agreements must adhere to the public-private partnership (PPP) guidelines and contractual architecture for sharing health-related data of SPHN.

In addition, written guarantee must be provided stating that:

1. Data provided are accessible at all times by all parties included in the agreement and project results can be published without restrictions following the Authorship Guidelines of the Swiss Academies of Arts and Sciences.
2. SPHN projects aim at generating scientific knowledge and the use of the project outcome/deliverables is not a commercial activity.

6. How to submit an application

The following requirements apply:

- a. Applicants must submit a single project plan that outlines the envisaged technical and scientific questions and describe how the requirements listed above will be fulfilled and goals achieved. Applicants must describe their objectives precisely and provide a timeline of the milestones to be achieved.

- b. Applications must be submitted in electronic form to info@sphn.ch before the submission deadline on 31 August 2022, using the application and budget templates (including all required annexes) from the [SPHN website](#).
- c. Applications (including all annexes) must be written in English.
- d. A signed letter of commitment from the host institution's management concerning own contributions (in cash and/or in kind) and adherence to the current valid version of the Ethical Framework for Responsible Data Processing and the SPHN Information Security Policy must be provided by all applicants requesting funding from SPHN. In case several applicants from the same institution are part of the same project proposal, the host institutions may provide one host commitment letter that covers the total amount requested by its applicants. The letter should be signed by a person who is authorised to sign research grants/contracts (Authorised Legal Signatory for Research Contracts). Depending on the institutional bylaws, it can be the dean, the vice-rector/vice-president or the head of the grants office.
- e. Applicants are expected to consider gender balances when forming a consortium and hiring personnel.
- f. Applications must provide information on how the requested funding will be distributed between applicants, if applicable.
 - i. Associated institutions receiving SPHN funding for relevant project activities should be listed as associated applicants (not as service providers), unless the activity is available on a standard fee-for-service basis (see SNSF rules for core facility access²).
 - ii. The resources allocated to services from BioMedIT and/or from hospital IT departments for providing necessary data in the appropriate format must be specified. Confirmation letters need to be submitted from all data and service providers that are not listed as applicants (e.g., university hospital data warehouses, analytical (PHRT) platforms, BioMedIT nodes, CTUs) and should outline what services and/or data will be provided and what are the corresponding required resources.
- g. Before the release of the first instalment, the following documents are required (if applicable):
 - Fully **approved ethics protocol** and consent framework.
 - **Signed Data Transfer and Use Agreement** (SPHN template); including process for second-level and third-level further use requests.
 - **Approved and signed consortium agreement** (SPHN template) signed by all project partners.

7. Budget requirements

Applications must include a detailed budget outlining the requested funding for different activities. Activities that were already in the scope of a previous SPHN-, PHRT- or otherwise funded project can generally not be budgeted again for the Demonstrator project.

² <http://www.snf.ch/en/funding/infrastructures/use-of-infrastructure/Pages/default.aspx>

7.1 Eligible costs for support by SPHN and acceptable matching contributions

Grants are awarded by SPHN to support improving and benchmarking data sharing, infrastructure, interoperability of clinical and research data, scientific output (publication), and feedback loops to clinical care and health decision making. The costs that can be charged include:

- Salaries of collaborators employed to implement information management and analysis systems, including efforts to modify data capture systems at hospitals, or efforts to establish mechanisms for programmatic access and sharing of project data (e.g., -omics, images, EEG, ECG).
- Salaries of collaborators employed to generate, manage, curate, or analyze data to reach the primary goals of the project.
- Cost for services from data providers (e.g., Clinical Data Warehouses, multi-omics and other analysis platforms).
- Usage fees linked to the usage of IT resources (fees for storage, CPU hours) and support according to respective core facility usage fees (see SNSF regulations³).
- Equipment costs linked to the development and implementation of the research data management systems: IT hardware (computers and data storage), software and licenses.
- Costs related to project management, ELSI (including data governance), CTUs, PPI, and networking activities.
- Costs for disseminating results and implementing feedback loops to clinicians and other health decision makers.

The costs must be quantified and their coverage requested in the application.

The following costs are **excluded**:

- Costs related to the creation, expansion and maintenance of laboratory infrastructure, biobanks, registries, etc.
- Research costs associated with the investigation of scientific questions that go beyond the primary goals of the project.
- Under no circumstances does SPHN cover the following costs: standard IT equipment incl. hardware and software, scientific literature, tools and aids, and objects comprising the usual basic equipment of an operational scientific facility. Expenses for regular postage, phone calls, photocopies, translations, etc., are also not eligible (except project-induced costs of patient-centered research). In addition, outlays for rent, electricity, water, insurances, maintenance and service, service centers and repairs are not regarded as eligible costs.
- No overheads shall be paid for SPHN-funded projects.

SPHN may authorize transfers between cost categories during the grant period.

Costs generated by associated applicants must be minor in comparison with the total budget of the project (see Section 5.7.1).

³ <http://www.snf.ch/en/funding/infrastructures/use-of-infrastructure/Pages/default.aspx>

Matching contributions (i.e., own contributions) by the applicants' institutions may pertain to all aspects within the scope and goals of the specific project, including research activities, data generation, access to research infrastructures and services, etc. The matching funds principle applies to all financial contributions provided by SPHN. The corresponding grantee is responsible for ensuring that, at the end of the project, all funds received from SPHN are matched by own contributions from the institutions involved in the project.

Finally, no overheads and no VAT shall be paid for SPHN-funded projects.

8. Evaluation process

8.1 Evaluation procedure

The evaluation of the proposals will be preceded by a formal check by the SPHN Management Office. Applications that meet the formal requirements and are within the scope of the call will be evaluated by a multidisciplinary panel composed of international and national experts.

Based on the recommendation provided by the expert panel, the National Steering Board will select the Demonstrator projects to be funded and decide on the amount of allocated funds.

8.2 Evaluation criteria

Proposals will be selected according to the following criteria:

- a. Fit with the goals of SPHN outlined in Section 1, 3 and 5, and potential to impact personalized health and personalized health research in Switzerland.
- b. Potential to determine the level of maturity of developed SPHN infrastructures, to identify potential gaps and to demonstrate the added value of SPHN.
- c. Level of use of SPHN infrastructures, processes, standards, ethical and interoperability framework.
- d. Feasibility of reaching the project aims within the given timeframe, quality of the project plan (including ethics/ELSI aspects, sample/data availability, project management and governance, etc.).
- e. Financial planning in general and distribution of the funding (total costs, own contributions, federal grant applications, third party funding).
- f. Added value for the research and clinical community in Switzerland, including long-term access to data, infrastructure, and technology (reusability).
- g. PPI elements (if applicable)

8.3 Conflict of interest policy

If a member of an SPHN body submits an application, he/she shall be denied access to the evaluation documents and shall be obliged to withdraw from any discussions or decision-making concerning his/her application. In addition, a member of any SPHN body must withdraw if he/she has a potential conflict of interest with respect to an application under evaluation by the relevant evaluation body.

Members of the SPHN bodies must declare any reasons for withdrawal without being prompted, such as:

- To be co-applicant for the project being proposed or are referred to as a partner in a cooperation project.

- To have a close family or personal relationship with the applicant (relatives, marriage, partnership, close friendship).
- To professionally depend on or compete with the applicant, or have done so until recently or will do so in the foreseeable future.
- To have published jointly with the person concerned during the past five years, with such publication being an expression of close cooperation.
- To fulfil other criteria that put their impartiality in doubt.

All decisions with respect to proposal evaluation and funding are documented in writing, conflict of interests and absence from the discussion will be documented in the meeting minutes.

9. Grant and grant management

9.1 Legal consequences of the award

On the full or partial approval of a grant application (award), the applicants become grantees of SPHN.

Grantees are obliged:

- To use the grant in accordance with the conditions set out in the funding decision.
- To comply with the provisions stipulated in the SPHN Funding Regulations and all other rules applicable to the grant.

The grantees must provide the Management Office with a written summary of the planned project that is understandable to non-experts (lay summary) as well as thematic keywords for project. Both, the lay summary and the keywords will be published on the SPHN website and must be submitted no later than upon submission of the release of funds request.

9.2 Grant payments

Funds are transferred in three instalments. The first payment is made upon request by the grantee responsible for correspondence, when all requirements are fulfilled (see 7.5).

The second installment is subject to approval of the 6-month project Activity Report (attainment of agreed milestones). The final 10% installment is subject to approval of the final reports (Activity and Financial Report). A comprehensive delivery of the project achievements for the SPHN website needs to be submitted before release of the final 10% payment (indicated in the funding decision). Deposition of data in FAIR data repositories with a simple access schedule is a mandatory requirement for continued funding by SPHN.

9.3 Cost-neutral extension of the project

At the grantee's request, SPHN may exceptionally extend the grant once by a maximum of 6 months (until 31.03.2025 at the latest) without provision of additional funding. The extension request must be submitted to the NSB-Ausschuss in due time before the end of the grant and requires a written justification.

9.4 Reporting

Grantees must submit regular (every 6 months) written feedback reports to the SPHN Management Office. The following information must be included in the report:

- a. Summary
- b. Main achievements and results; attainment of milestones
- c. Next steps.

Annual financial reports are also to be submitted no later than 3 months after the end of the calendar year and must disclose the following:

- a. Use of SPHN funds
- b. Own contributions “in cash” and “in kind” by the involved partners.

Financial reports are compiled by the grant administration office of the host institution. They must be reviewed, signed and sent to the Management Offices in a timely manner.

A final Financial and Activity Report must be submitted no later than 3 months after the end of the project.

Unused funds must be refunded to SPHN and may not be put to any other use.

9.5 Discontinuation of funding

If the prerequisites for the award are no longer met after approval of the award or if the circumstances on which approval is based change considerably (e.g., milestones are not reached), SPHN may amend or revoke the approved award and:

- a. If the grant has not yet been transferred, it may amend or withhold it.
- b. If the grant has already been transferred, it may demand partial or full repayment of the grant.

Prior to taking such measures, SPHN will hear the parties concerned and communicate the amendment or revocation in the form of a ruling.

A. Appendix

A.1 Table of abbreviations

CDW	Clinical Data Warehouses
CTU	Clinical Trial Unit
DCC	Data Coordination Center
ELSI	Ethical-Legal-Social Issues
IP	Intellectual property
IT	Information technology
MO	Management Office
NSB	National Steering Board
PH	Personalized Health
PHRT	Personalized Health and Related Technologies
PPP	Private-public partnerships
SAMS	Swiss Academy of Medical Sciences
SERI	State Secretariat for Education, Research and Innovation
SIB	Swiss Institute of Bioinformatics
SNSF	Swiss National Science Foundation
UH	University hospital

A.2 Glossary

Terms are defined in the glossary on the [SPHN webpage](#).

A.3 Eligibility criteria

See SPHN Funding Regulations on the [SPHN webpage](#).

A.4 Matching funds guidelines

As required by law, the “matching funds” principle (in cash and/or in kind) is a prerequisite for receiving SPHN funding. The amount requested from SPHN must be matched with own contributions by the consortium as a whole.

A signed letter of commitment concerning own contributions (in cash and/or in kind) and adherence to the current valid version of the Ethical Framework for Responsible Data Processing and SPHN Information Security Policy from the host institution’s management should be provided by all applicants requesting funding from SPHN. In the case that several applicants from the same institution are part of the same proposal, the host institutions may provide one host commitment letter that covers the total amount requested by its applicants. The letter should be signed by a person who is authorized to sign research grants/contracts

(authorized legal signatory for research contracts). Depending on the institutional bylaws, it can be the dean, the vice-rector/vice-president or the head of the grants office.

The own contributions must pertain to the scope and main goals of the SPHN initiative and can be provided as in cash or in kind. They must support the aim of SPHN and not directly relate to clinical service and other health care issues. However, building interconnections between electronic patient records and Personalized Health research data infrastructures are acceptable.

Table 1: Own contributions definitions

Contribution	Definition
Cash	Only funds that are transferred by the host institution to an account/credit line administered by the applicant are to be considered as cash contributions.
Kind	Resources from the institutions' operating budget that are explicitly allocated to SPHN initiatives (projects): <ol style="list-style-type: none"> (1) Personnel paid from the institution's operating budget involved in SPHN initiatives (projects). A maximum of 20% of a professor's time can be claimed. (2) Earlier investments (e.g., infrastructure platforms) will be reported within the financial report of the first year. SPHN will determine the eligible amount on a case-by-case basis.

Notes:

- *Funds and resources received from competitive infrastructure grants (e.g., cohort studies) are eligible as own contribution provided that they support the goal of SPHN. A commitment letter from the institution shall be provided to confirm that the infrastructure is sustainable and will be used and maintained after the end of the project. Institutions shall decide whether they want to use competitive research grants (e.g., SNSF, H2020) as own contribution. SPHN grants cannot be considered as own contributions.*
- *A 50% in kind contribution and 50% in cash contribution is welcomed as opposed to matching contributions which are only 100% in kind.*

Table 2 shows the maximum applicable rates for personnel. Applicants should use their institutional salary scale to fill in the budget.

Table 2: Maximum applicable rates for personnel (direct cost and in-kind own contribution)

Role	Lump sum* [CHF]
Professor	270k
Assistant professor	200k
Senior project manager	170k
Senior researcher	170k
Postdoctoral researcher	130k
Technician, nurse	130k
Doctoral student	60k

* Including salary, social charges; to be calculated pro rata (20% max. for professors).