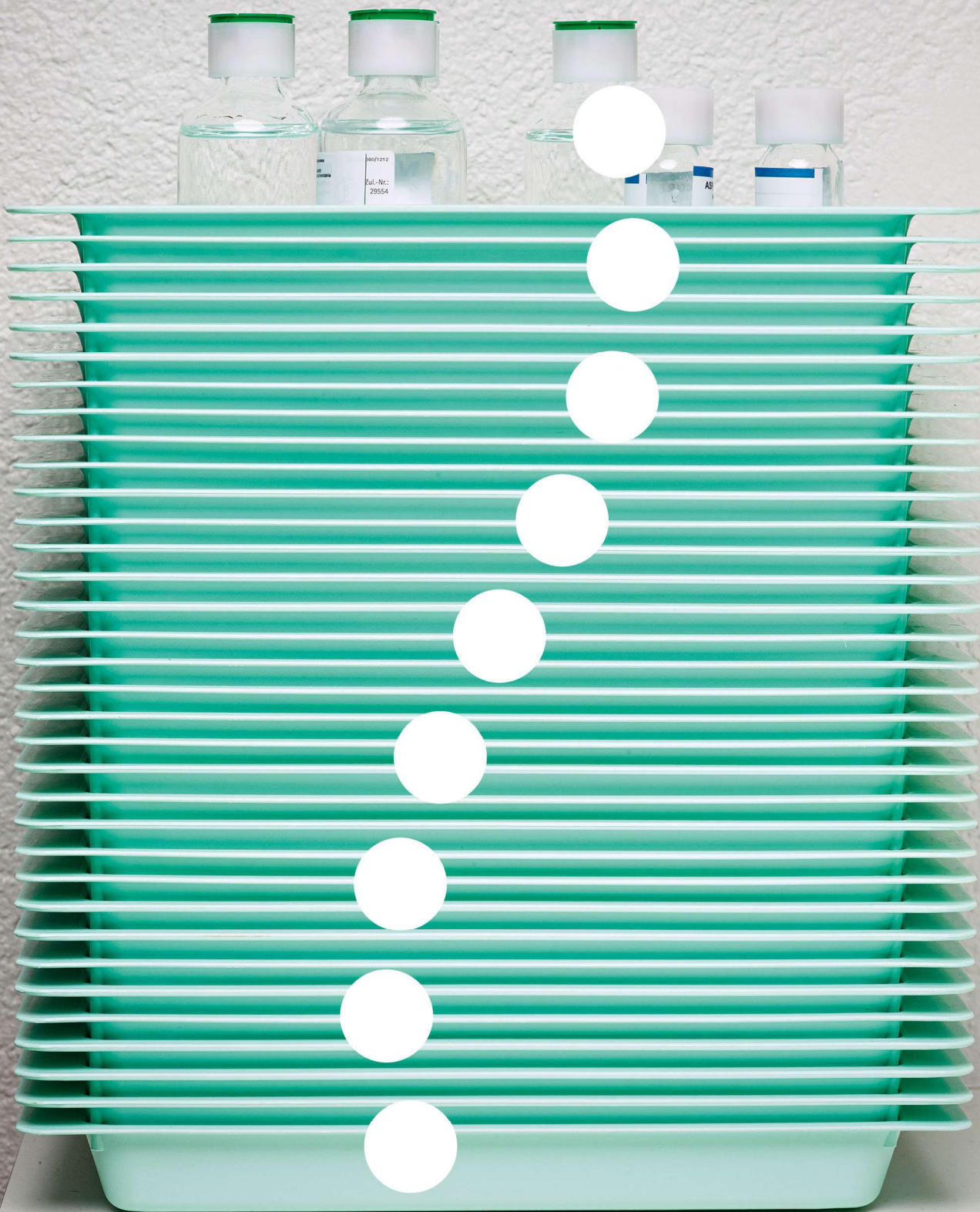


RESEARCH & DEVELOPMENT

R&D Letter

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La Source.
Institut et Haute
Ecole de la Santé

Hes·so
University of Applied Sciences and Arts
Western Switzerland

R&D Letter

Introduction

Our research teams, like everyone working at La Source, demonstrated an exceptional level of engagement in the face of the COVID-19 pandemic. Our research activities were kicked into gear and our researchers demonstrated tremendous responsiveness by proposing a series of initiatives to document and analyse practices within the context of the pandemic. They devised, developed and submitted to funding authorities new projects that might provide clear answers to decision-makers regarding the policies and best practices to adopt under the circumstances. These projects aimed in particular to gain insight on how the pandemic and the health safety measures implemented during the pandemic impacted the population, patients, their families, and health professionals. We were able to count on the support of our Documentation Centre (CEDOC), which centralised reviews of the results of key studies and databases dedicated to health practices in connection with COVID-19. We hope that our efforts will enable us to carry out these projects and that the results might inform practices and policy decisions regarding how epidemics are managed and how care is delivered when they occur.

Five new projects were added to our research activities, bringing the total number of ongoing projects to 22. For the first time ever, we are partners in a large-scale EU Horizon 2020 (H2020) project, CANCERPREV, which will inform practices regarding the targeted prevention of different types of cancer. Two projects deal with the challenges of the aging of the population and aim to improve the quality of life of seniors. The first has to do with a community-based integrated caring model and the second with ethical and social issues related to the use of smart health technologies. A fourth project involves the teaching, innovation and the simulation lab (SILAB) and is geared to develop a practical guide to the gamification of learning. Finally, one project is evaluating a new tool for real-time, online monitoring of medication adherence. The prototype allows data to be transferred securely between patients and pharmacists.

In January 2020, our Vice-Dean for Research, Prof Séverine Vuilleumier, was appointed Chair of the University of Applied Sciences and Arts Western Switzerland (HES-SO) Health R&D Committee. She will work to promote research in the health field and will contribute to develop and implement the strategy in this regard for the 2021-24 period.

The Ageing and Health LAB (AH LAB) has added a new academic associate: **Rafael Fink**. He will be working at the senior-lab on research projects headed by Prof Delphine Roulet Schwab. He holds a Master's in Social Science and has worked for the Office of the Public Health Director of the Canton of Ticino, where he oversaw the implementation of the Electronic Health Record (EHR) in the canton's health system.

We must also highlight our joining the Swiss Integrative Centre for Human Health ([SICHH](#)), a skills centre for research and innovation in health, and the appointment of Prof Séverine Vuilleumier to its Scientific Advisory Board.

S. Vuilleumier, Vice-Dean for Research, La Source

New projects

[CANCERPREV] Innovative strategies for cancer prevention with focus on sex hormone signalling and chronic inflammation

The CANCERPREV project being coordinated by the Ecole polytechnique fédérale de Lausanne (EPFL) involves 11 other research partners, including La Source. Its purpose is the creation of a network of European experts in cancer prevention geared to developing new methods for preventing the most common types of cancer. To this end, 15 research projects will be conducted to examine two key factors that may signal cancer risk: chronic inflammation and blood hormone levels. Epidemiological studies indicate that one quarter of all cancers is provoked by an infection or chronic inflammation. Moreover, there is a strong correlation between blood sex hormone levels and cancer of the female reproductive system. The project also aims to train young researchers in cutting-edge experimental mathematics techniques in order to develop new guidelines for the prevention of cancer of reproductive and non-reproductive organs.

Contact: S.Vuilleumier, La Source

From a theoretical model of community-based integrated care to the development of Open Access practical tools

An integrated care management approach centred on the social environment offers promising leads for meeting in a pro-active manner the challenges presented by an ageing population and for improving the quality of life of seniors and people living with a chronic condition. In Switzerland, more and more healthcare institutions want to restructure themselves in order to better integrate the dimensions of living and care. However, each tends to build its own model without benefiting from the experience of others. What's more, there are no practical tools for planning and implementing such a reorganisation.



What housing and care model for seniors? Photo: Unsplash.

The aim of this interdisciplinary project conducted by CURAVIVA SUISSE in conjunction with La Source and the senior-lab is twofold: 1) refine a community-based integrated care model by holding it up against examples in the field; and 2) translate and disseminate the principles of this holistic approach through practical tools. The project comprises three principal stages: 1) analyse the development, functioning, success factors and funding modalities of five institutions organised according to a community-based integrated care model in the three linguistic regions of Switzerland (2020); 2) refine the theoretical framework and develop sustainable funding models (2021-2022); and 3) develop a diagnostic application to enable institutions, private investors and public entities to define the organisational and funding mode best suited to their profile (2022-2023).

Contact: D. Roulet Schwab, La Source

[RESOURCE]: Smart homes, seniors and carers: Facilitating social acceptance and the negotiation of responsibility

Advances in the field of digitalisation are raising hopes that smart home health technologies might cut the cost of eldercare and support, while ensuring the safety of seniors both at home and in institutions. However, the use of these technologies is also raising social and ethical issues, particularly regarding autonomy, privacy, safety, and data access. The fear of seeing technology replace human contact is also quite prevalent.

The RESOURCE project is being conducted jointly by the Institute for Biomedical Ethics at the University of Basel and La Source, and is funded by the Swiss National Science Foundation (SNF) - PNR 77, Digital Transformation. It aims to carry out a critical assessment of the knowledge, will, and social and ethical concerns regarding the use of smart health technologies in caring for seniors.



Using new technologies for the benefit of seniors while respecting ethics and the need for social ties. Photo: Unsplash.

This knowledge is necessary to foster the adoption of new technologies not only by family carers and health professionals, but also by seniors themselves. The transfer of the responsibility of care from human carers to smart home devices is an ethically delicate process fraught with significant implications. The RESOURCE project will formulate recommendations that technology developers will be able to apply to ensure responsible innovation.

Contact: D. Roulet Schwab, La Source

G-GAMA: Practical guide to the gamification of learning

The G-Gama project run jointly by La Source, the Lausanne School of Hospitality (EHL) and the School of Engineering and Architecture of Fribourg (HEIA-FR) was selected for funding under the HES-SO "Innovation pédagogique 2020" call for projects. The gamification of learning represents a theoretically ideal approach for enriching the pedagogical offer. However, it is little used for various reasons, including implementation barriers. The aim of the project is to complete a synthesis of the state of the art of gamification in order to provide a comprehensive and concise view of the different approaches available. A best practices guide laying out the key steps to creating games will be developed to support instructors in implementing gamification in the pedagogical engineering of their courses. An assortment of games will be made available. These will be annotated to facilitate their transposition to other learning contexts. Finally, participation in various events centred on the topic and the organisation of roundtable discussions will help gamification to gain visibility, to be deployed and to become a staple at the HES-SO.

Contact: N. Baudat, La Source

MEMS® Button Project: A new connected prototype for monitoring medication adherence

Optimal medication adherence is essential to patients with chronic conditions. However, 50% of patients do not adhere to medication regularly. Funded by [Swiss Innovation Agency](#) (innovation cheque), the MEMS® Button Project is being conducted by La Source Prof Valérie Santschi in collaboration with Swiss-based AARDEX SA. Its purpose is to evaluate a new online tool for helping patients adhere more closely to their medication. The data collected will serve to evaluate the feasibility of using the tool on a daily basis in clinical practice and user satisfaction among patients and pharmacists. Developed by [AARDEX SA](#), this new technology should help polymedicated patients in their daily life and facilitate both the adherence in real time and the secure transfer of data between patients and pharmacists.

Contact: V. Santschi, La Source

Success for the first MOOC on recovery in mental health

Launched for the first time on October 10th on the occasion of the World Mental Health Day, the Massive Open Online Course (MOOC) on recovery in mental health was a collaborative effort between several professionals and partners in the community. Designed with peer workers and carers, the course was developed under the HES-SO "cyberlearn" call for projects in 2017. Its aim is to raise public awareness of the possibility of recovering from mental illness, a matter still largely unknown in the general population. Whether personally affected by mental illness, carers, mental health professionals or just interested in the subject, 428 people completed the course, 129 downloaded their certificate, and more than 300 returned their course evaluations, which turned out to be excellent. The evaluations also showed that the participants' knowledge of the evolution of and recovery from mental illness had progressed considerably thanks to the course. More than three quarters of the participants indicated that they would recommend the course to others. The second edition of the MOOC is wrapping up soon and it has been confirmed that the course will be offered again in the fall.

Contact: P. Ferrari, La Source

Looking back on scientific events

Overview of the clinical examination of elderly persons

The AH LAB held its first half-day update workshop this past December 12. The event, which attracted 60 nursing professionals and focused on the challenges and specificities of the clinical examination of elderly persons, afforded the opportunity to exchange on this important subject via videoconference with Prof Philippe Voyer of Université Laval in Quebec City. Project Leader Mathieu Turcotte, Lecturer at La Source, kicked off the workshop with a presentation on atypical manifestations in elderly patients. This was followed by a presentation on the implementation of clinical evaluations by Leila Guesmia, Project Manager at the Department of Medicine of the Lausanne University Hospital (CHUV). The second part of the day was dedicated to conducting clinical exams at the new Beaulieu facilities. The aim of the AH LAB update workshops is to spotlight scientific advances and innovations of interest to geriatric and gerontological nursing care.

Contact: M. Turcotte, La Source

Recovery: Values for life

More than 160 people took part in the 11th R3 Day (Recovery, Rétablissement, Recupero) held November 29, 2019. The event was organised by SO-PSY (Swiss society for social psychiatry) in conjunction with the Mental Health and Psychiatry LAB (MHP LAB).



R3 Day (Recovery, Rétablissement, Recupero). Photo: S. Rexhaj.

Speakers examined the organisational, ethical, economic and political issues relative to the integration of peer practitioners in the health care system. Workshops served to present recent innovations in the field of mental health care.

Contact: S. Rexhaj and J. Favrod, La Source

New publications

Scientific publications

- Anker, D., Tsuyuki, R.T., Paradis, G., Chiolero, A., & **Santschi, V.** (2019) Les guidelines internationaux incitent à une implication plus active du pharmacien. *pharmajournal*, 11, 10-11.
- Anker A., Santos-Eggimann, B., Zwahlen, M., **Santschi, V.**, Rodondi N., & Chiolero A. (2020). Blood pressure control and complex health conditions in older adults: impact of recent hypertension management guidelines. *Journal of Human Hypertension*.
- Antonini, M.**, Pullman, A., Fuller, S., & Andres, L. (2020). Pre- and postpartum employment patterns : Comparing leave policy reform in Canada and Switzerland. *Community, Work & Family*, 0(0), 1 28.
- Aubert, C.**, Diab, B., Luster, J., Binsha, C. P., & **Schäublin, M.-P.** (2019). Prévention de la consommation d'alcool chez les adolescents à Mangalore. *Revue Médicale Suisse*, 15, 2216-2217.
- Buchholz, V. N., Mühle, C., Cohort Study on Substance Use Risk Factors, Kornhuber, J., & Lenz, B. (2019). Lower Digit Ratio (2D:4D) Indicative of Excess Prenatal Androgen Is Associated With Increased Sociability and Greater Social Capital. *Frontiers in Behavioral Neuroscience*, 13, 246.
- Chiolero, A., Rodondi, N., & **Santschi, V.** (2020). High-value, data-informed, and team-based care for multimorbidity. *The Lancet Public Health*, 5(2), e84.
- Coloni-Terrapon, C.**, **Favrod, J.**, Clément-Perritaz, A., Gothuey, I., & **Rexhaj, S.** (2020). Optimism and the Psychological Recovery Process Among Informal Caregivers of Inpatients Suffering From Depressive Disorder : A Descriptive Exploratory Study. *Frontiers in Psychiatry*, 10(972).
- Delmas, P.**, **Antonini, M.**, **Berthoud, L.**, O'Reilly, L., Cara, C., **Brousseau, S.**, **Bellier-Teichmann, T.**, Weidmann, J., **Roulet-Schwab, D.**, Ledoux, I., Pasquier, J., Boillat, E., Brandalesi, V., & Konishi, M. (2020). A comparative descriptive analysis of perceived quality of caring attitudes and behaviours between haemodialysis patients and their nurses. *Nursing Open*, 7(2), 563-570.
- Droz Mendelzweig, M.** (2020). Social regulation activities in end-of-life : A qualitative study on completion of advance directives in Swiss nursing homes. *BMC Palliative Care*, 19(57).
- Estévez-Lamorte, N., Pitzurra, R., Foster, S., Gmel, G., **Mohler-Kuo, M.**, & Schnyder, U. (2019). Exposure to potentially traumatic events in young Swiss men : Associations with socio-demographics and mental health outcomes (alcohol use disorder, major depression and suicide attempts). *European Journal of Psychotraumatology*, 10(1), 1611093.

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Foster, S., **Mohler-Kuo, M.**, Tay, L., Hothorn, T., & Seibold, H. (2019). Estimating patient-specific treatment advantages in the « Treatment for Adolescents with Depression Study ». *Journal of Psychiatric Research*, 112, 61-70.

Guessous, I., Ridder, D., Marques-Vidal, P., & **Joost, S.** (2020). GeoLaus, une étude de l'influence des caractéristiques géo-environnementales sur la santé. *Praxis*, 109(1), 27-30.

Guinchard, B. (2019). Commentary : Comparison of managerial competence of Indonesian first-line nurse managers: A two-generational analysis. *Journal of Research in Nursing*, 25(1), 20-21

Joost, S., Ridder, D. D., Marques-Vidal, P., Bacchilega, B., Theler, J.-M., Gaspoz, J.-M., & Guessous, I. (2019). Overlapping spatial clusters of sugar-sweetened beverage intake and body mass index in Geneva state, Switzerland. *Nutrition & Diabetes*, 9(1), 1-10.

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Book chapters

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Fiorentino, A., Jaccard, D., Hulaas, J., Hugli, O., **Stotzer, G.**, **Kollbrunner, A.**, **Antonini, M.**, Simon, J., **Vuilleumier, S.**, Gilart de Keranflec'h, C., & **Delmas, P.** (2020). Prise de décision clinique de l'infirmière d'accueil et de tri aux urgences : méthode d'évaluation à l'aide d'un serious game. Dans M. Saint-Jean et V. LeBlanc (Eds.), *Formation des professionnels de santé, partenariat-patient. Vers une perspective humaniste*. (pp. 83-94). Paris: L'Harmattan.

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