



# BMJ Open Healthcare system maturity for integrated care: results of a Swiss nationwide survey using the SCIROCCO tool

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## ABSTRACT

**Objectives** To assess the maturity of the Swiss healthcare system for integrated care and to explore whether this maturity varied according to several variables.

**Design** A Swiss nationwide individual electronic survey in November 2019.

**Setting and population** Stakeholders identified via lists of the Swiss Forum for Integrated Care and of the integrated care unit of the Swiss Federal Office of Public Health, and representatives of 26 cantonal public health departments, were invited to participate.

**Primary outcome measure** The outcome was the maturity of the Swiss healthcare system for integrated care, measured with the Scaling Integrated Care in Context maturity model tool (SCIROCCO tool), which comprises 12 dimensions and questions rated on a 6-point scale.

**Analysis** Univariate analyses were first performed, followed by bivariate analyses, to find out whether maturity varied according to working linguistic region, healthcare profession, main domain of professional activity, implication in integrated care, attitude towards integrated care and attitude towards the Swiss healthcare system.

**Results** The 642 respondents were 53.7 years on average, 42.5% were women, 60.0% and 20.7% worked in the German and French-speaking parts of Switzerland, respectively. Overall, the maturity of the Swiss healthcare system for integrated care was evaluated as low, with dimension means ranging from 1.0 ( $\pm 1.0$ ) for the 'Funding' dimension to a maximum of 2.7 ( $\pm 1.1$ ) for 'eHealth Services'. Results only varied according to the working linguistic region.

**Conclusions** Results highlight a limited maturity of the Swiss healthcare system for integrated care, as assessed at a national level by a large and varied number of healthcare stakeholders. They represent important information for the further development of integrated care in Switzerland, and should help identify areas requiring attention for a successful transformation of the Swiss healthcare system towards more integrated care.

## INTRODUCTION

Since the late 1990s, healthcare systems have been facing the challenge of preventing and managing chronic diseases and their related societal and individual burden. Since then, integrated care has emerged as a way to overcome

## Strengths and limitations of this study

- The Scaling Integrated Care in Context (SCIROCCO) maturity model tool is a validated instrument targeting the maturity of healthcare system for integrated care, the results of which may support the implementation and further expansion of integrated care at the system and organisational level.
- The SCIROCCO tool has not been previously used at a nationwide level; in Switzerland, more than 600 healthcare stakeholders took part in a national electronic survey.
- We used the SCIROCCO tool in conditions different than those in which it was originally developed, without the consensus-like method which encourages discussion and sharing of experiences among smaller groups of key participants; the latter may also allow a common understanding and interpretation of the content of the dimensions and response modalities.
- Due to the complexity of the Swiss health system, individual respondents of a large-scale survey may lack comprehensive knowledge of all dimensions.

the overall fragmentation of healthcare services,<sup>1</sup> and various initiatives have been implemented across and within countries.<sup>2</sup> Despite common overall goals, often aligned with the triple aim (ie, population health, quality of care/care experiences, costs),<sup>3</sup> integrated care initiatives are very heterogeneous because of their context dependency.<sup>4</sup> In fact, they often differ in terms of target populations, type of healthcare professionals and healthcare system levels involved, scope, components and size, among others. Additionally, integrated care initiatives often remain at the pilot stage as they present scaling up difficulties and limited transferability and replicability.<sup>2</sup> For these reasons, understanding barriers and facilitators of the implementation and scaling up of integrated care programmes has been the focus of several comprehensive European projects.<sup>5–10</sup>

In Europe, the degree and extent of development of integrated care initiatives varies greatly between countries.<sup>2 5–10</sup> While some countries such as the UK, the Netherlands and Spain often are considered as early adopters for developing large-scale integrated care for more than three decades, other countries such as Switzerland and Belgium seem to have developed less visible or more recent large-scale innovations.<sup>11 12</sup> To support stakeholders in their endeavour towards better integrated care, a conceptual maturity model was developed on the basis of qualitative interviews conducted with health and social care delivery organisations from across 12 European countries and regions.<sup>13</sup> Results were categorised into 12 dimensions considered key to deliver integrated care: ‘Readiness to Change’; ‘Structure and Governance’; ‘eHealth Services’; ‘Standardisation and Simplification’; ‘Funding’; ‘Removal of Inhibitors’; ‘Population Approach’; ‘Citizen Empowerment’; ‘Evaluation Methods’; ‘Breadth of Ambition’; ‘Innovation Management’; ‘Capacity Building’. Further on, the maturity model was validated and developed into an online self-assessment tool for integrated care through a European Union-funded project (SCIROCCO—Scaling Integrated Care in Context).<sup>14</sup> The aim of this tool is to ‘comprehensively assess the maturity of the progress of a regional system uncovering its strengths, weaknesses and areas for improvement in the development of integrated care delivery’.<sup>15 16</sup> As such, it may support the implementation and further expansion of integrated care at the system and organisational level. Up to now, the assessment of integrated care with the SCIROCCO tool has been conducted at regional levels, and mostly within the context of the SCIROCCO project.<sup>17 18</sup> Integrated care being very context dependent, assessing maturity of healthcare integration at a regional level, makes sense. However, since healthcare may be organised both at national and regional levels, assessing maturity at a country level could also help inform healthcare policymakers about areas of improvement that might be the target of nationwide actions. This may be particularly crucial in federal countries such as Switzerland, which decentralise healthcare responsibilities and lack restrictive national health policies and legal frameworks to ease the quicker and larger scale development of integrated care. Concretely realising where gaps lie may motivate healthcare policymakers to act. To our knowledge, a nationwide evaluation using the SCIROCCO tool has not been performed yet. Using that tool, we aimed to: first, assess the maturity of the Swiss healthcare system for integrated care; and second, explore whether maturity assessed by the SCIROCCO tool varied according to working linguistic regions (German, French, Italian), or according to the profession of, or position held by, the respondents.

## METHODS

### Study design, population and setting

In November 2019, we conducted an online survey across Switzerland, which link was sent to integrated care stakeholders. Eligible participants were purposefully selected on the basis of their potential knowledge and experience

in the field of integrated care. This was done using lists of stakeholders of both the FMC, the Swiss Forum for integrated Care, and the integrated care unit of the Swiss Federal Office of Public Health; we also included representatives of the 26 cantonal public health departments. An email invitation to participate in the electronic survey was sent to approximately 5500 healthcare stakeholders spread across Switzerland; 2 weeks later, we sent a reminder to non-respondents.

### Measures

The main dependent variable of this study is the maturity of the Swiss healthcare system for integrated care, measured with the SCIROCCO tool,<sup>14–16</sup> which comprises the following 12 dimensions: ‘Readiness to Change’; ‘Structure and Governance’; ‘eHealth Services’; ‘Standardisation and Simplification’; ‘Funding’; ‘Removal of Inhibitors’; ‘Population Approach’; ‘Citizen Empowerment’; ‘Evaluation Methods’; ‘Breadth of Ambition’; ‘Innovation Management’; ‘Capacity Building’. Each of the 12 dimensions presents first a brief description of the dimension, followed by the response modalities according to a 6-point scale, ranging from 0 (equivalent to ‘not fulfilled’, ‘not present/available’) to 5 (equivalent to ‘fully fulfilled’, ‘totally present/available’) (table 1). Using data from seven European countries, this tool has shown good content validity, as well as a one-factor structure with good internal consistency.<sup>16</sup> Because French and German versions of the tool did not exist at the time of the survey preparation, we translated and culturally adapted the SCIROCCO version using the following pragmatic approach. First, two pairs of persons (one professional translator and one English-native collaborator fluent in French and German, respectively) prepared French and German versions of the questionnaire that were then discussed by a group of experts. After reaching consensus on the first French and German versions, the tool was pretested among a dozen of German-speaking and French-speaking healthcare stakeholders. The expert group then resolved discrepancies and agreed on final German and French versions of the SCIROCCO tool. The Italian version of the tool used in Switzerland was updated from the already existing Italian SCIROCCO tool. During the whole translation process, cross-checks across the three versions were made to ensure content consistency and homogeneous understanding of the questions. All three versions of the SCIROCCO tool are available in the online supplemental file 1.

The other variables included in the survey were: respondents’ age (continuous) and gender (men/women), type of healthcare profession (six categories: practising physicians, non-physician practising healthcare professionals, directors, administration, project management, other), main setting of professional activity (nine categories: independent, public administration, foundation/association, insurance, private clinic, university hospital, cantonal hospital, medical home, other) and working linguistic region (German-speaking Switzerland, French-speaking

**Table 1** Description of the 12 dimensions of the SCIROCCO tool

Dimensions	Objectives
Readiness to Change	Providing a more integrated set of services by creating new roles, processes and working practices, as well as new systems to support information sharing and collaboration across care teams.
Structure and Governance	Multiyear programmes with efficient change management, funding and communication, and the power to influence and mandate new working practices needed to deliver integrated care at a regional or national level.
eHealth Services	Building on existing eHealth services, connecting them in new ways to support integration, and augmenting them with new capabilities (enhanced security and mobility) will enable continuous collaboration, measuring and managing outcomes, and citizens will take a more active role in their care.
Standardisation and Simplification	Simplification of the number of different systems in use and the formats in which they store data by consolidating data centres, standardising on fewer systems and agreeing on what technical standards will be used across a region or country.
Funding	Initial investment and funding are required to change systems of care so that they can offer better integration. To ensure that the initial and ongoing costs can be financed, a full range of mechanisms from regional/national budgets to ‘stimulus’ funds, public–private partnerships and risk-sharing mechanisms need to be used.
Removal of Inhibitors	Funded programmes and good eHealth infrastructure can face barriers (legal issues with data governance, resistance to change from individuals or professional bodies, cultural barrier to the use of technology, perverse financial incentives and lack of skills), which need to be recognised early in order to develop a plan to deal with them and to minimise their impact.
Population Approach	Integrated care can be developed to benefit citizens who are not thriving under existing systems of care, in order to help them manage their health and care needs in a better way, and to avoid emergency calls and hospital admissions and reduce hospital stays. That way, the citizens can maintain their health for longer and be less dependent on care services as they age.
Citizen Empowerment	Easy-to-use services, such as appointment booking, self-monitoring of health status and alternatives to medical appointments, need to be available to citizens, as they are willing to do more to participate in their own care, as suggested by evidence. This means providing services and tools that enable convenience, offer choice, and encourage self-service and engagement in health management, considering the need to address the risk of health and social inequalities.
Evaluation Methods	Evidence-based investment is required, meaning that the impact of each change is evaluated. Health technology assessment is an important method here and can be used to justify the cost of scaling up of integrated care to regional or national level.
Breadth of Ambition	Integrated care includes many levels of integration, such as integration between primary and secondary care, of all stakeholders involved in the care process, or across many organisations. The long-term goal should be fully integrated care services, which provide a complete set of seamless interactions for the citizen, leading to better care and improved outcomes.
Innovation Management	Managing the innovation process to get the best results for the systems of care and ensuring that good ideas are encouraged and rewarded, is necessary. Innovations from clinicians, nurses and social workers need to be recognised and scaled up to provide benefit across the system as well as taking into consideration universities and private sector companies, which are increasingly willing to engage in open innovation in order to develop new technologies, test process improvements and deliver new services that meet the needs of citizens. There is also value in looking outside the system to other regions and countries that are dealing with the same set of challenges, to learn from their experiences.
Capacity Building	Capacity building is the process by which individual and organisations obtain, improve and retain the skills and knowledge needed to do their jobs competently. New roles will need to be created, new skills developed and the systems of care need to become ‘learning systems’ that are constantly striving to improve quality, cost and access, so that they become more adaptable and resilient. Ensuring that knowledge is captured and used to improve the next set of projects, leading to greater productivity and increasing success, is needed.

SCIROCCO, Scaling Integrated Care in Context.

Switzerland, Italian-speaking Switzerland, nationwide). Participants were also asked to indicate whether they had been, or were currently involved, in an integrated

care initiative (three categories: no, never; yes, once; yes, several times). For those involved in such initiatives, an additional question asked about their role in them (seven

categories: executive; coordinator; healthcare provider; project leader; case manager; administrative or financial administrator; other). Finally, we enquired about the participants' opinion towards integrated care (nine items: eg, 'integrated care is the best option for patient-centred care'; 'integrated care is efficient in terms of health costs'; 'integrated care is just one care option among many') and about their general opinion towards the Swiss healthcare system (single item adapted from the Swiss version of the 2016 International Health Policy Survey of the Commonwealth Fund).<sup>19 20</sup>

### Statistical analyses

We performed cross-sectional analyses on our survey data. First, we ran univariate analyses to describe the characteristics of the respondents and responses to each dimension, considering frequencies and percentages for categorical variables as well as means and SDs for continuous variables. Then, we performed bivariate analyses to find out whether maturity for integrated care, as measured by the 12 dimensions of the SCIROCCO tool, varied according to the stratified variables. For the region of professional activity (nationwide; German-speaking Switzerland; French-speaking Switzerland), Italian-speaking Switzerland was not kept as a category because the number of respondents was too small. The bivariate analyses therefore considered the working linguistic region, the type of healthcare profession, the main setting of professional activity of the respondents, their role in integrated care initiatives, if any, and their participation in integrated care initiatives. Associations between the answers on the 12 dimensions of the SCIROCCO tool and the respondents' attitude towards integrated care and towards the Swiss healthcare system were tested using Pearson's correlations. Statistical analyses were performed using SPSS V.25 and STATA V.16.0.

### Patient and public involvement

Healthcare and integrated care stakeholders helped to adapt the German and French versions of the SCIROCCO tool. Stakeholders and representatives were the main informants of the results of our study, through their participation and responses to the survey. Patients were not explicitly involved.

## RESULTS

Approximately one out of six persons contacted answered the questionnaire (n=642). Their characteristics are presented in table 2. The mean age of respondents was 53.7 years ( $\pm 10.5$ ) and 42.5% were women. Approximately one-third and a quarter of the respondents were healthcare providers (physicians and non-physicians) and directors of institutions, respectively. In addition, a little less than half were working in healthcare institutions. Respondents were mainly professionally active in the German-speaking part of Switzerland (60.0%), the others worked in the French-speaking Switzerland (20.7%) or

**Table 2** Respondents' characteristics (n=642)

Variables	(n)	Mean (SD) or %
Age	(610)	53.7 (10.5)
Women	(617)	42.5
Profession	(625)	
Practising physicians		19.8
Non-physician practising healthcare professionals		16.0
Directors		27.7
Administration		9.6
Project management		15.4
Other		11.5
Professional activity	(597)	
Independent		19.4
Public administration		11.6
Foundation/association		12.2
Insurance		5.7
Private clinic		3.2
University hospital		22.1
Cantonal hospital		11.2
Medical home		9.2
Other		5.4
Working linguistic region	(627)	
German-speaking Switzerland		60.0
French-speaking Switzerland		20.7
Italian-speaking Switzerland		3.2
Nationwide		16.1
Implication in integrated care	(628)	
No, never		46.5
Yes, once		18.8
Yes, several times		34.7
Attitude towards the Swiss healthcare system	(610)	
Complete change needed		8.2
Major changes		76.9
Minor changes		14.9

across the country (16.1%). Whereas respondents were working in all 26 Swiss cantons, 7 cantons had more than 20 participants: Zurich (n=121), Bern (n=91), Vaud (n=53), St-Gall (n=35), Argau (n=28), Lucern (n=26), Basel city (n=21). Just over half of the respondents took part in integrated care activities.

Overall, over a 0–5 rating scale, mean ratings were on the lower side, with 7 out of 12 dimensions having means lower than 2 ('Readiness to Change'; 'Structure and Governance'; 'Standardisation and Simplification'; 'Funding'; 'Breadth of Ambition'; 'Innovation



**Figure 1** Spider graph representing means (dark line) and proportions (dots) of each response category, by dimension (dots are proportionate to the number of responses for each response category).

Management'; 'Capacity Building') and dimensions' means varying between a minimum of 1.0 (two dimensions: 'Funding'; 'Breath of Ambition') and a maximum of 2.7 (one dimension: 'eHealth Services') (see [figure 1](#) and [table 2](#) for details). As illustrated in [figure 1](#) and [table 3](#), which show the distributions of the individual responses, the span of responses varied across dimensions. Whereas dimensions 6 ('Removal of Inhibitors') and 10 ('Breadth of Ambition') concentrated the majority of responses on two response modalities, all the other dimensions showed a spread of responses over three or four response modalities.

Subgroup analyses did not show significant differences, except between working linguistic regions: compared with respondents working in the German-speaking part of Switzerland or working across the country (ie, 'nationwide' category), persons working in the French-speaking part of Switzerland gave lower ratings to the 'Population Approach', 'Citizen Empowerment' and 'Evaluation Methods' dimensions and higher ones to the 'Readiness to Change' and 'Structure and Governance' dimensions.

Additionally, notwithstanding the fact that answers from the same canton were very much spread across the whole range of modalities, the distribution of ratings across cantons presented some particularities. For example, while the distributions were very much similar for the dimensions of 'Readiness to Change' and 'Capacity Building', they were more heterogeneous for the dimensions of 'Population Approach' (range 0–4) and 'eHealth Services' (range 2–4) ([figure 2](#)).

Finally, attitudes toward integrated care and attitudes toward the Swiss healthcare system did not show strong associations with the 12 dimensions (correlations ranging from  $-0.35$  to  $0.16$  and from  $-0.06$  to  $0.17$ , respectively).

## DISCUSSION

The results of this nationwide survey show that overall, the 'maturity' of the Swiss healthcare system for integrated care, as assessed using the SCIROCCO tool, was rated on the lower side. Whereas the 'Funding' dimension was rated as the lowest (1='Funding is available but



**Table 3** Responses to all dimensions\*: mean (SD) and median by dimension; % for all response categories†

Dimension (n)	Mean (SD)	Median	Response modalities	%
1. Readiness to Change (n=640)	1.3 (0.9)	1.0	0 No acknowledgement of compelling need to change	6.7
			1 Compelling need is recognised, but no clear vision or strategic plan	67.8
			2 Dialogue and consensus building underway; plan being developed	16.1
			3 Vision or plan embedded in policy; leaders and champions emerging	4.2
			4 Leadership, vision and plan clear to general public; pressure for change	3.6
5 Political consensus; public support; visible stakeholder engagement	1.6			
2. Structure and Governance (n=642)	1.2 (1.2)	1.0	0 Fragmented structure and governance in place	37.4
			1 Recognition of the need for structural and governance change	24.8
			2 Formation of task forces, alliances and other informal ways of collaborating	26.9
			3 Governance established at a regional or national level	5.6
			4 Roadmap for a change programme defined and accepted by stakeholders involved	2.0
3. eHealth Services (n=635)	2.7 (1.1)	1.0	5 Full, integrated programme established, with funding and a clear mandate	3.3
			0 There is no eHealth service to support integrated care in place	1.6
			1 There is a recognition of need but there is no strategy and/or plan on how to deploy eHealth services to support integrated care	11.8
			2 There is a mandate and plan(s) to deploy regional/national eHealth services, across the healthcare system but not yet implemented	32.8
			3 eHealth services to support integrated care are piloted but there is no yet region-wide coverage	29.0
4 eHealth services to support integrated care are deployed widely at large scale	22.8			
5 Universal, at-scale regional/national eHealth services used by all integrated care stakeholders.	2.0			

Continued

Table 3 Continued

Dimension (n)	Mean (SD)	Median	Response modalities	%
4. Standardisation and Simplification (n=642)	1.4 (0.9)	1.0	0 No standards in place or planned that support integrated care services	17.0
			1 Discussion of the necessity of ICT to support integrated care and of any standards associated with that ICT is initiated	33.5
			2 An ICT infrastructure to support integrated care has been agreed together with a recommended set of technical standards – there may still be local variations or some systems in place that are not yet standardised	42.2
			3 A recommended set of agreed technical standards at regional/national level; some shared procurements of new systems at regional/national level; some large-scale consolidations of ICT underway	5.5
			4 A unified set of agreed standards to be used for system implementations specified in procurement documents; many shared procurements of new systems; consolidated data centres and shared services widely deployed	1.1
			5 A unified and mandated set of agreed standards to be used for system implementations fully incorporated into procurement processes; clear strategy for technical specification of new systems in regional/national procurement of new systems; consolidated data centres and shared services (including the cloud) are normal practice.	0.8
5. Funding (n=640)	1.0 (1.0)	1.0	0 No additional funding is available to support the move towards integrated care	29.2
			1 Funding is available but mainly for the pilot projects and testing	51.1
			2 Consolidated innovation funding available through competitions/grants for individual care providers and small-scale implementation	11.9
			3 Regional/national (or European) funding or PPP for scaling up is available	4.7
			4 Regional/national funding and/ or reimbursement schemes for ongoing operations are available	2.2
			5 Secure multiyear budget and/ or reimbursement schemes, accessible to all stakeholders, to enable further service development	0.9
6. Removal of Inhibitors (n=641)	2.0 (0.7)	2.0	0 No awareness of the effects of inhibitors on integrated care	1.1
			1 Awareness of inhibitors but no systematic approach to their management is in place	18.6
			2 Strategy for removing inhibitors agreed at a high level	67.4
			3 Implementation plan and process for removing inhibitors have started being implemented locally	7.3
			4 Solutions for removal of inhibitors developed and commonly used	5.1
			5 High completion rate of projects and programmes; inhibitors no longer an issue for service development	0.5

Continued

Table 3 Continued

Dimension (n)	Mean (SD)	Median	Response modalities	%
7. Population Approach (n=640)	2.3 (1.3)	2.0	0 Population health approach is not applied to the provision of integrated care services	5.5
			1 Population-wide risk stratification considered but not started	27.8
			2 Risk stratification approach is used in certain projects on an experimental basis	22.2
			3 Risk stratification used for specific group, that is, those who are at risk of becoming frequent service users	25.8
			4 A population risk approach is applied to integrated care services but not yet systematically or to the full population	15.0
			5 Whole population stratification deployed and fully implemented	3.8
8. Citizen Empowerment (n=642)	2.1 (1.1)	2.0	0 Citizen empowerment is not considered as part of integrated care provision	3.4
			1 Citizen empowerment is recognised as important part of integrated care provision but effective policies to support citizen empowerment are still in development	23.8
			2 Citizen empowerment is recognised as important part of integrated care provision; effective policies to support citizen empowerment are in place but citizens do not have access to health information and health data	48.0
			3 Citizens are consulted on integrated care services and have access to health information and health data	15.7
			4 Incentives and tools exist to motivate and support citizens to co-create healthcare services and use these services to participate in decision-making process about their own health	4.4
			5 Citizens are fully engaged in decision-making processes about their health and care included in decision-making on service delivery and policy-making	4.7
9. Evaluation Methods (n=639)	2.2 (1.2)	2.0	0 No evaluation of integrated care services is in place or in development	5.2
			1 Evaluation of integrated care services is planned to take place and be established as part of a systematic approach	31.5
			2 Evaluation of integrated care services exists, but not as part of systematic approach	20.2
			3 Some integrated care initiatives and services are evaluated as part of a systematic approach	28.2
			4 Most integrated care initiatives are subject to a systematic approach to evaluation; published results	13.6
			5 A systematic approach to evaluation, responsiveness to the evaluation outcome and evaluation of the desired impact on service redesign (ie, a closed loop process).	1.4
10. Breadth of Ambition (n=639)	1.0 (1.1)	1.0	0 Coordination activities arise but not as a result of planning or the implementation of a strategy	37.1
			1 The citizen or their family may need to act as the integrator of service in an unpredictable way	41.9
			2 Integration within the same level of care (eg, primary care) is achieved	9.5
			3 Integration between care levels (eg, between primary and secondary care) is achieved	6.6
			4 Improved coordination of social care service and healthcare service needs is introduced	4.2
			5 Fully integrated health and social care services are in place and functional	0.6

Continued



Table 3 Continued

Dimension (n)	Mean (SD)	Median	Response modalities	%
11. Innovation Management (n=642)	1.2 (0.9)	1.0	0 No innovation management in place	19.0
			1 Innovation is encouraged but there is no overall plan	46.1
			2 Innovations are captured and there are some mechanism in place to encourage knowledge transfer	29.1
			3 Formalised innovation management process is planned and partially implemented	3.9
			4 Formalised innovation management process is in place and widely implemented	1.4
			5 Extensive open innovation combined with supporting procurement and the diffusion of good practice is in place	0.5
12. Capacity Building (n=940)	1.5 (1.0)	1.0	0 Integrated care services are not considered for capacity building	12.8
			1 Some approaches to capacity building for integrated care services are in place	48.1
			2 Cooperation on capacity building for integrated care is growing across the region	21.7
			3 Learning about integrated care and change management is in place but not widely implemented	15.2
			4 Systematic learning about integrated care and change management is widely implemented; knowledge is shared, skills retained and there is a lower turnover of experienced staff	1.3
			5 A 'person-centred learning healthcare system' involving reflection and continuous improvement is in place	0.9

\*Details of dimension denominations and response modalities presented as currently available in the English version of the SCIROCCO tool in the fall of 2019.

†Colour code: 0%–10.0% of respondents: white; 11%–20% of respondents: light blue; 21%–40% of respondents: mild blue; >40% of respondents: dark blue.

ICT, information and communications technology; PPP, public–private partnership; SCIROCCO, Scaling Integrated Care in Context.



**Figure 2** Histograms presenting, by dimension, the distribution of ratings of the nine cantons with the highest number of respondents. AG, Argovie; BE, Bern; BS, Basel; GE, Geneva; LU, Lucern; SG, St-Gall; TI, Ticino; VD, Vaud; ZH, Zurich.

mainly for the pilot projects and testing'), the 'Information and eHealth Services' dimension had the highest rating (3='eHealth Services to support integrated care are piloted but there is no yet region-wide coverage'). Additionally, an important span of ratings was observed for several dimensions. Nevertheless, variations in ratings between working linguistic regions varied only slightly and were limited to a few dimensions.

In comparison with other European countries or regions, such as Scotland, Italy, the Netherlands or the Basque Country,<sup>17</sup> where maturity measures were performed at local levels, the maturity of the Swiss healthcare system for integrated care seems to fall behind for some dimensions of the SCIROCCO tool.<sup>17</sup> However, even though these countries and regions have a long tradition of integrated care, they do not rate high on all dimensions either. The low maturity results of Switzerland call for stronger policies targeting all SCIROCCO dimensions. Some have been introduced recently, for example the 2020–2030 Health Policy Strategy<sup>21</sup> issued in December 2019, which targets care coordination, digitalisation of health and health literacy. Additionally, democratic consultations regarding various adaptations of the health insurance law, which address numerous elements included in the SCIROCCO tool, such as eHealth and financing and funding of integrated care services, have been launched in the summer of 2020. These initiatives should support the development of integrated care in Switzerland in the near future.

The low maturity ratings of the Swiss health system can be explained by the fact that the organisation of integrated care and healthcare in general, is not centralised. Indeed, Switzerland is a federal country with a complex division of tasks and funding between the federal and cantonal levels, as well as between all actors of the healthcare system. For instance, each canton is responsible for securing healthcare provision for its own population.<sup>22</sup> This complexity and fragmentation of the Swiss health system prevents rapid and large-scale development of integrated care (<sup>23–25</sup>; Schussel  Filletaz, personal communication 15 December 2020). However, the federal organisation of healthcare leaves considerable room for the implementation of local initiatives, which may need to be considered since large-scale strategies do not always represent the optimal option.<sup>26</sup> Results of the national integrated care survey conducted in 2015–2016 showed that local integrated care initiatives have been steadily growing in Switzerland over the last 20 years and were characterised by a diversity of types and breadth of initiatives, implemented interventions and targeted population, among others.<sup>11</sup> Therefore, the low maturity results according to the SCIROCCO tool probably reflect a limited maturity for integrated care at the federal level rather than the cantonal one.

Within this low Swiss health system maturity context, the rating differences observed between working linguistic regions of the SCIROCCO evaluation could be explained as follows: respondents may have found it difficult to keep

in mind the situation of the whole country and not to be influenced by their own specific experiences and local contexts when rating health system maturity, especially considering the existing heterogeneity of integrated care initiatives between the different regions.<sup>11</sup>

Obtaining responses to this survey from a large sample size of various healthcare stakeholders from across the country represents the main strength of this study. Nevertheless, results should be interpreted with the following two limitations in mind. First, our methodological approach used the SCIROCCO tool in different conditions than the ones in which it was developed. Originally, dimensions are rated individually by regional stakeholders and results are then discussed in small consensus groups to obtain one single (consensual) value for each dimension. In our survey, we used an online approach and obtained one mean value for each dimension. Compared with the latter (ie, a single individual in front of an online survey), it is possible that the consideration of small groups of stakeholders sharing specific expertise in all aspects of the healthcare system allows to obtain a deeper knowledge of the aspects considered in the SCIROCCO tool. In fact, small groups discussions may favour reaching a common understanding and interpretation of the content of the dimensions and response modalities, possibly leading to a higher (more optimistic) rating. Second, even though attention and rigour were given to the adaptation and translation processes for the different versions of the tool for each linguistic region, wording differences cannot be excluded and may have had an effect on the regional differences found.

## CONCLUSION

Our findings reflect an overall limited maturity of the Swiss healthcare system for integrated care, as evaluated with the SCIROCCO tool at a national level by a large variety and number of healthcare stakeholders. Despite the need for a cautious interpretation of the results, they represent the first maturity-related information for further development of integrated care in Switzerland. As such, findings suggest that further support is needed for a successful evolution of the system towards more integrated care, by identifying areas requiring attention. Future research or use of the SCIROCCO tool should try assessing maturity both at system and regional levels and combining discussions and the sharing of experiences at the level where integrated care is concretely developed and implemented, by keeping in mind systemic constraints or facilitators.

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interpreted the data and participated in the writing of the paper, which was led by IP-B. All authors revised the paper and approved the final version.

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