

# Using the Taxonomy of Patient Portals to Classify the ELGA Patient Portal

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**Abstract.** Background: Patient portals may support patient engagement, yet they may differ largely in their characteristics. Objectives: To compare the Austrian patient portal with 10 portals from six other countries using the TOPCOP Taxonomy. Methods: We described the portals using openly available information. Results: The Austrian patient portal shows basic functionality but lacks further functions that other portals partly offer. Conclusion: Comparing portals using TOPCOP is possible and shows functions to improve usefulness of portals.

**Keywords.** Medical informatics, patient portal, taxonomy, EHR portal

## 1. Introduction

Patient portals provide patients with online access to their electronic patient record [1]. Besides this, patient portal features may cover viewing visit notes, requesting medication refills, appointment scheduling, access to test and lab results, secure messaging with the health provider, e-visits, or reporting patient-generated health data [1, 2]. Patient portals may thus differ largely in their functionality and characteristics.

The TOPCOP Taxonomy has been developed to describe and compare patient portals [3]. The aim of this paper is to use TOPCOP to compare the national Austrian patient portal (“eBefund” and “eMedikation”) offered by ELGA GmbH with ten other patient portals from six other countries. The motivation is to better understand differences of patient portals from other countries to identify ways for improvement.

## 2. Methods

The TOPCOP Taxonomy describes 25 dimensions with 65 characteristics of patient portals [3]. We used TOPCOP to describe the characteristics of the national Austrian patient portal and compared this portal with ten other national or regional patient portals from Germany, Finland, Norway, UK, Australia, and United States. We used openly available information to determine the characteristics. If the functions or characteristics were described in an unclear way, we classified it based on the context. If no information was available on a specific feature, it was classified as “not available”. The analysis, description and comparison was done jointly by the authors.

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3. Results

Figure 1 shows the classification of the Austrian patient portal in the TOPCOP Taxonomy, in comparison with 10 other portals. All 25 dimensions are defined in [3].

DIMENSIONS		CHARACTERISTICS   PATIENT PORTALS									
D1: Portal Type	integrated	E	1,2,3,4,5,6,7,8,9,10	tethered							
D2: Care Sector Target	generic	E	2,4,5,6,7,8,10	primary care		secondary care	1,3,9	tertiary care			
D3: Patient Target	outpatient	E	1,2,3,4,5,6,7,8,10	in & outpatient	9						
D4: Portal Specialization	universal	E	1,2,3,5,6,7,8,9	extended	10	disease-specific	4				
D5: Medical Speciality	generic	E	1,2,3,5,6,7,8,9,10	specialized	4						
D6: Web Accessibility	not supported	E	1,2,3,4,5,6,8,9,10	supported	7						
D7: App-Expandability	not expandable	E	2,3,4,5,6	expandable	1,7,8,9,10						
D8: Activity Monitoring	no insight		1,3,4,7,9,10	with insight	E	2,5,6,8					
D9: Appointment Booking	no booking	E	2,8,10	request	4,5	schedule	1,3,6	hybrid	7,9		
D10: Prescription Renewal	no renewal	E	1,2,4,10	with renewal	3,5,6,7,8,9						
D11: Portal Customizability	not customizable	E	1,2,5,6,7,9	customizable	3,4,8,10						
D12: E-Consult	no e-consult	E	8,10	asynchronous	4,5	synchronous	1,2,3	both	6,7,9		
D13: System Notifications	no notifications	E	3	notifications	4,5,8,10	reminder	1,2,6,7,9	alerts			
D14: Patient Education	no education	E	1,2,4,5,6,8,10	non-personalized	3,7,9	personalized					
D15: Therapy Instructions	no instructions	E	2,3,5,10	non-protocol-based	1,7,8,9	protocol-based	4,6				
D16: Medication Summary	no summary		1,10	with summary	E	2,3,4,5,6,7,8,9					
D17: Health Monitoring	no monitoring	E	1,2,5	self-reported	4,6,7	self-tracked	3,10	combined	8,9		
D18: Visit Preparation	no preparation	E	3,4,5,6,8,10	with preparation	1,2,7,9						
D19: Declaration of Will	no registration	E	1,3,4,7,10	with registration	2,5,6,8,9						
D20: Second Opinion	no inquiry	E	1,2,3,4,5,6,8,9,10	with inquiry	7						
D21: Study Sign-Up	no sign-up	E	1,2,3,4,5,6,8,9	with sign-up	7,10						
D22: Record Access	no control		10	shared control	3,4,6,9	full control	E	1,2,5,7,8			
D23: Records Management	no management	E	3,4,6,7,8,9,10	with management	1,2,5						
D24: Health Data Amend	review		1,3,4,6,7,8,10	correct	5,9	delete	E	2			
D25: Health Data Upload	no upload	E	1,3,5,7,8,9	with upload	2,4,6,10						
<b>Legend</b> E = Characteristics fulfilled by ELGA Portal: <a href="https://gesundheits.gv.at">gesundheits.gv.at</a> <sup>d</sup> . 1 - 10 = Characteristics fulfilled by the other patient portals.											
<b>Portal domains</b> 1 = <a href="https://helios-gesundheit.de">helios-gesundheit.de</a> <sup>a</sup> , 2 = <a href="https://myhealthrecord.gov.au">myhealthrecord.gov.au</a> <sup>a</sup> , 3 = <a href="https://trinity-health.org">trinity-health.org</a> <sup>a</sup> , 4 = <a href="https://patientview.org">patientview.org</a> <sup>b</sup> , 5 = <a href="https://helkenorge.no">helkenorge.no</a> <sup>a</sup> , 6 = <a href="https://wa.kaiserpermanente.org">wa.kaiserpermanente.org</a> <sup>b</sup> , 7 = <a href="https://weillcornell.org">weillcornell.org</a> <sup>c</sup> , 8 = <a href="https://kanta.fi">kanta.fi</a> <sup>c</sup> , 9 = <a href="https://wexnermedical.osu.edu">wexnermedical.osu.edu</a> <sup>c</sup> , 10 = <a href="https://pepa.eu/phellow">pepa.eu/phellow</a> App <sup>c</sup> .											
<b>Period of analysis</b> a = 11/2020. b = 12/2020. c = 1/2021. d = 1/2022.											

Figure 1: The Austrian patient portal ELGA compared to ten other patient portals.

4. Discussion

Besides basic functions, the Austrian patient portal shows specific features such as that patients can manage access rights or review stakeholders’ access to their health data. It however lacks functionality often offered by other portals, such as notifications or reminders, adding patient-generated data, or expandability by apps.

Overall, we found the TOPCOP taxonomy to be quite useful in comparing characteristics of patient portals from various countries. TOPCOP can help to identify missing functions. This in turn may help to integrate further functions and by this to increase portal adoption and impact on patient care. As a limitation, our analysis is based on mostly openly available information. Complementing this information with expert opinions or internal documents may detect some features that we missed.

References

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