

# The role of modern information technologies in the processes of integration of care

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*Source / Izvornik:* **MEDICINSKA INFORMATIKA 2021. Zbornik radova 15. simpozija Hrvatskog društva za medicinsku informatiku., 2021, 47 - 48**

**Conference presentation / Izlaganje na skupu**

*Permanent link / Trajna poveznica:* <https://um.nsk.hr/um:nbn:hr:184:505044>

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*Download date / Datum preuzimanja:* **2025-02-01**



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printed on the cover so that it can be uploaded to a computer or smartphone. If the guardian does not want the QR to be used, he or she can reduce it with black pencil. The text of the passport was also sent to the patient's pediatrician or family physician in order to enter it in the patient's card and make it visible in the electronic health record (eKarton).

It takes about two man-hours to make one passport. So far, over a hundred passports have been produced for patients with the autism spectrum, and the development of passports for other invisible disabilities is planned. A package of instructions was also developed so that the technology of making passports could be easily introduced in other interested health care institutions. So far, KBC Zagreb and KBC Split have expressed interest

The issuance of a hospital passport is highly individualized, professionally demanding and time-consuming, but it greatly improves communication about complex patients, and ultimately brings great relief to healthcare professionals, patients and their parents or guardians.

**Keywords:** hospital passport, invisible disability, QR code, electronic health record

Med.Inform. 2021;15:47-48.

## Uloga suvremenih informacijskih tehnologija u procesima integracije skrbi

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**Sažetak.** Cilj rada je prikazati odnos informacijskih tehnologija i integracije skrbi za kompleksne pacijente. Napravljena je SWOT analiza uloge informacijskih tehnologija u integraciji skrbi. Na primjerima situacija/slučaja bolničke putovnice za osobe s poremećajem iz spektra autizma, palijativne skrbi te neformalne skrbi prikazano je kako informacijske tehnologije mogu služiti kao podrška u integraciji skrbi. Korištenjem Donabedianovog modela kvalitete, napravili smo dekonstrukciju slučaja bolničke skrbi djece s poremećajem iz spektra autizma te skrbi o palijativnom pacijentu. Pritom smo kao pružatelje skrbi u obzir uzeli i formalne (profesionalce – zdravstvene djelatnike) i neformalne njegovatelje (roditelji/obitelj pacijenta). Dekonstrukcijom procesa skrbi stekli smo uvid u kritične točke ili uska grla u procesu skrbi te su nam upravo ta mjesta bila ciljana za intervenciju.

Medicinsko-tehnološki napredak je rezultirao kompleksnošću skrbi za pacijenta. Međutim, upravljanje, odnosno menadžment skrbi ne prati medicinsko-tehnološki napredak. Zbog toga se događaju prekidi u procesu skrbi (npr. dupliciranje postupaka, fragmentirano pružanje usluga, itd.) što rezultira lošim ishodom liječenja i neadekvatnim korištenjem resursa. Kao odgovor na to, javlja se potreba za integracijom skrbi. Jedan od elemenata integracije je povezivanje svih dionika u procesu skrbi. To je omogućeno informacijskom tehnologijom, tj. softverskim rješenjima. Opasnosti koje nosi informatizacija su: nametanje rješenja prije nego su definirani svi procesi u skrbi, diskontinuitet informiranja (npr. nepovezana softverska rješenja), povećana količina informacija koje brzo i lako kolaju te dovode do zagušenja informacijama, a sve skupa paradoksalno otežava donošenje odluke. Pritom se javlja percepcija dodatnog administrativnog opterećenja koje se premjestilo s papira na računalo te u cjelini povećalo opsegom. Snage koncepta korištenog u odabranim slučajevima očituju se u pristupu problemu odozdo prema gore, uključivanju svih korisnika u razvoj rješenja, mapiranje postojećih i zatim cjelovit razvoj procesa što prethodi informatizaciji, te fokus na ključne

informacije za donošenje odluka po principu ček-lista, umjesto na automatsko prikupljanje informacija. Za prihvatanje tehnologije bitnim se pokazalo komuniciranje problema koje rješenje adresira i integracija u postojeće servise.

Umjesto da nameće integraciju, potrebno je da informacijska tehnologija bude podrška za procese integracije. Za svakog dionika uključenog u proces skrbi potrebno je definirati specifičan paket korisnih informacija koje mu pomažu pri donošenju odluka, i koje jednostavno i pouzdano može koristiti.

**Ključne riječi:** Informacijske tehnologije, integracija skrbi, proces skrbi

## **The role of modern information technologies in the processes of integration of care**

**Abstract.** The aim of this paper is to show the relationship between information technology and the integration of care for complex patients.

A SWOT analysis of the role of information technology in the integration of care was made. In the examples of situations / cases of hospital passport for people with autism spectrum disorder, palliative care and informal care it is shown how information technology can serve as a support in the integration of care. Using Donabedian's quality model, we deconstructed the case of hospital care for children with autism spectrum disorder and palliative care. We took into account both formal (health professionals) and informal carers (parents / family of the patient) as care providers. By deconstructing the care process, we gained insight into critical points or bottlenecks in the care process, and these places were targeted for our intervention.

Medical-technological advances have resulted in the complexity of patient care. However, management does not follow medical-technological progress. As a result, interruptions in the care process occur (e.g., duplication of procedures, fragmented service delivery, etc.) resulting in poor treatment outcomes and inadequate use of resources. In response, a need for care integration has emerged. One of the elements of integration is to connect and coordinate all stakeholders within the care process. This is made possible by information technology, i.e. software solutions. The risks of informatization are: imposing solutions before all care processes are defined, discontinuity of information (e.g. incoherent software solutions), increased amount of information that circulates quickly and easily and leads to information congestion, and all together paradoxically complicates decision making. Furthermore, there is a perception of the additional administrative burden that has shifted from paper to computer and increased in scope as a whole. The strengths of the concept used in the selected cases are manifested in the bottom-up approach to the problem, involving all users in the development of solutions, mapping existing and then development of the whole care process preceding informatization, and focus on key information for decision-making using the checklists principle, instead of automatic collection of the information. Communication of the problems addressed by the solution and integration into existing services proved to be important for the acceptance of technology.

Instead of imposing integration, information technology needs to be a support for integration processes. For each stakeholder involved in the care process, it is necessary to define a specific package of useful information that helps in the decision-making, and that can be used easily and reliably.

**Keywords:** Information technologies, integrated care, care process