Identification of multi-sectoral service needs in health and social services

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By identifying individuals with multi-sectoral service needs, it is possible to offer support and integrated services.

The Finnish Institute for Health and Welfare investigated approaches and tools for the identification of individuals with increased or multi-sectoral needs for health and social services, and high service-use costs. The investigation included an evaluation of how successfully such needs are identified in Finland, and how the process should be developed.

Approximately 80 percent of the costs of health and social care service use are attributed to 10 percent of clients. Due to the complexity of the service system, problems in information flow and the lack of established models, increased or multi-sectoral service needs and usage are currently not identified well enough. The use of services is not necessarily coordinated or managed by anyone.

If proactive identification of individuals with increased or multi-sectoral service needs could be made more efficient, it would enable better planning and delivery of preventative and joined-up services and care practices.

A small minority of clients have increased or multi-sectoral service needs.

For the purposes of this report, clients with increased service needs are those who frequently access services, but not necessarily multi-sectoral services. Individuals with multi-sectoral service needs are those who use services from more than one sector or service group; for example, a combination of primary health care services and community-based social services.

INFORMATION FROM MULTIPLE PERSPECTIVES IS NEEDED

In order to develop the service system, information from multiple perspectives is needed about the identification of individuals who have increased or multi-sectoral needs, and about problems relating to their identification. The Finnish Institute for Health and Welfare examined the current situation based on the following questions:

- What types of approaches and tools for identifying multi-sectoral service needs are currently in use or being developed in other countries?

- Based on datasets, what are the characteristics of multi-sectoral use of health and social care services in the Finnish population, and what are the costs?

- What kinds of models and tools have been developed and/or are used in Finland for identifying clients and client groups who need multi-sectoral services?

- What kinds of models and tools have been developed and/or are used for identifying support needs relating to work and functional capacities? How are health checks for unemployed people implemented in practice?

IDENTIFICATION MODELS IN OTHER COUNTRIES

The study included an overview of models and tools for the identification of individuals with increased or multi-sectoral service needs that are in use or under development in other countries. These data were sourced in a survey and literature review conducted in spring and summer 2019.

Prediction and identification models

The models were primarily based on the identification and prediction of high costs. They can be categorised into five groups based on their working principle.

1. **Client and patient databases**

Client and patient databases contain population data that can be used to predict and identify social problems, various risks, the existence or absence of diseases, and the use of services. The reviewed models enabled the identification of e.g.

- increased out-of-hours risk
- individuals who need demanding treatment measures
- high-volume service use
- individuals who need social care support, and
- individuals who need primary health care services.

For example, in the Clinical Reasoning model, the aim is to identify inpatients who have an increased risk of needing demanding treatment measures[1.]

2. **A mix of information resources and measures**

The models which used a mix of information resources and measures were aimed at predicting

- support needs of older people
- high-risk patients from the point of view of somatic disorders
- individuals who frequently use A&E, and the coordination of treatment measures in this context, and
- at-risk clients and service referral needs.

The data are usually collated from client/patient databases and discussed by a multi-sectoral team of specialists. For example, the GeroS model collates data from multiple sources and identifies factors in challenges relating to ageing[2].

3. Questionnaire-based surveys

Questionnaire-based models were generally focused on measuring indicators relating to mental health or children's circumstances. There are numerous indicators for analysing cases of adults with high use of primary health care services. Children's situations are analysed by questionnaires such as the QuICCC. It consists of 16 questions relating to children's functional limitations and increased service use.[3]

4. Self-assessment

Self-assessment models were based on

- risk assessment from biometric measurements in telemonitoring, and
- prediction of hospital admissions in low-income and homelessness situations.

In the Valcronic application, older patients with chronic conditions submit information to the healthcare provider for monitoring purposes by smartphone or computer[4]. The Vulnerability Index (VI) model is based on self-reported hospital admissions and chronic conditions[5].

5. Cost-based prediction

The following types of cost-based prediction models were identified:

- health-economic assessment models
- identification of high-cost patients, and
- diagnosis-based prediction of high-cost patients by using client data.

For example, a model that is based on identifying disease-specific costs and cost-effectiveness (Disease Management Program, DMP) is suitable for monitoring and assessing the long-term costs of conditions such as hypertension[6].

Adapting international lessons to the Finnish context

The problems relating to the international models are in particular their standard-like nature and lack of consideration of individual circumstances and needs. When lessons from the international experience are collated and adapted for use in the Finnish context some of these problems may at the same time be resolved:

- The identification of multi-sectoral needs should be part of daily practice, not just in direct case work and patient care, but also in low-threshold services and administrative tasks.

- The identification process should be justified, be ethically acceptable, and take into account clients' welfare.

- A range of information resources and measures can be used (e.g. client and patient data, questionnaires, self-assessments, cost-based prediction).

- The data should ideally be analysed and processed by a multi-sectoral team of specialists. Representation or attendance of clients and patients is also advisable.

- Once a need has been identified, it is important that the client or the patient can be reached in order to carry out a needs assessment or agree on the necessary services or monitoring measures.

- Collated data should be utilised and made available for use in decision-making and operational development.

MULTI-SECTORAL SERVICE USE AND COSTS

High-cost and/or multi-sectoral use of health and social care services and the distribution of calculated service use costs in the population in 2017 was analysed based on available datasets[7]. This included both population-level analysis and a breakdown of costs by decile and age groups. Seven service groups were defined for analysis purposes:

1. Primary outpatient healthcare clinics
2. Somatic specialised medical care
3. Mental health and substance abuse services, care
4. Mental health and substance abuse services, housing
5. Community-based social care services
6. Institutionally based social care services
7. Services for the elderly.

Over a fifth of the population had not used any of the analysed services, and 66% had used only health care services. Approximately 71% had used primary outpatient health care services, 39% somatic specialised medical care, 6% mental health and substance abuse services, 9% community-based social care services, 4% services for the elderly, and approximately 1% had used (non-elderly) housing or institutionally based services.

Multi-sectoral service use

Approximately 38% had used services from a single service group, 29% from two groups, 7% from three groups, and 2.5% of the population had used services from four different service groups. Only about 3,800 residents had used services from more than four service groups. Residents had most commonly used only primary outpatient health care services, or a mixture of outpatient and somatic specialised medical care.

When analysed by decile distribution of the calculated service use costs, the proportion of those who had used services from three service groups or more increased from the sixth decile group onwards (Figure 1). In the decile group with the highest costs, the most common mix was primary outpatient health care services and somatic specialised medical care (just under a third of the group). In addition to these, approximately 40% had used services from one or two of the following service groups: community-based social care, services for the elderly and mental health services.
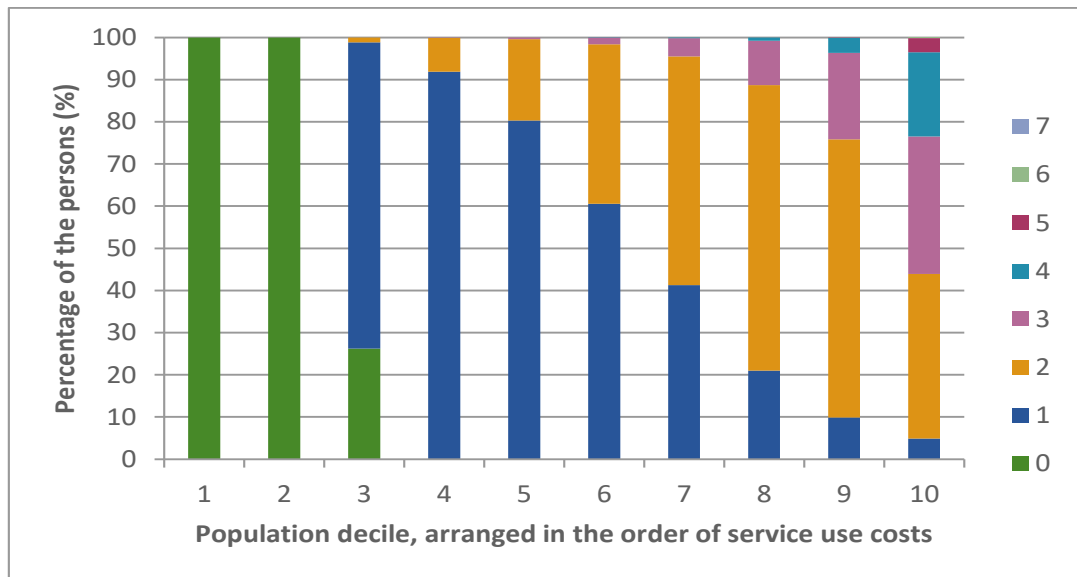
Figure 1. In percentage, the number of service groups used in each population decile, arranged by service use costs (N = 1,048,180).

Distribution of costs of service use

Approximately 80% of the calculated costs were concentrated in the decile group with the highest costs. In this decile group, 44% of average service use costs were attributed to health care, 26% were attributed to services for the elderly, and 30% were attributed to other social care services. In the other decile groups, the costs were primarily attributed to health care services and outpatient prescriptions. Multi-sectoral service use manifested as higher average costs.

High costs have a number of underlying factors

The analysis supports previous findings which indicate that service use costs are concentrated in a relatively small proportion of the population. The decile group with the highest costs included people from all age groups, and the average costs varied by service group across the age groups. Multi-sectoral service needs and high costs are linked to factors such as health, functional capacity and social circumstances, and it can be difficult to form a comprehensive view within the service system. Regions and service providers could benefit from data made available from national databases when they develop services for individuals with increased or multi-sectoral service needs.

IDENTIFICATION MODELS IN FINLAND

Existing models and tools were mapped in a survey carried out in spring and summer 2019 and in five thematic interviews conducted in spring 2020.

Four approaches to identification

According to the survey results, only one in three organisations have an established model or tool in place for the identification of individuals with multi-sectoral service needs. The models can be grouped into four general categories.

1. Initial interview or assessment of service/care needs

Service needs are most commonly identified in an initial interview or service/care needs assessment conducted by health or social care professionals. Measurements and indicators (e.g. AUDIT, Beck Depression Inventory BDI) are sometimes used. For example, in Pirkanmaa, the client's personal resources and health or welfare risks are assessed by the professional and the client together by using the Suuntima tool. The data can then be used in broader contexts in the segmentation of clientship and services.

2. Information systems

The identification of individuals with multi-sectoral service needs can involve the use of information systems. They can provide information about e.g. number of appointments and admissions or health risks. Once the predetermined criteria are exceeded, the client's service needs can be reviewed more closely. For example, the City of Helsinki uses the Health Benefit Analysis tool, which automatically collates risk factors recorded in the patient information system and analyses whether a patient is at risk of increased service needs.

Table 1. Examples of identification tools and models.

Model	Description
Suuntima (Pirkanmaa)	Case segmentation tool, used by the client and the professional together
Health benefit analysis (Helsinki)	A tool which utilises information systems to produce e.g. risk assessments and individualised recommendations
Case manager model (Päijät-Häme)	A model for the identification of individuals with increased service needs to facilitate service planning and delivery
Joint case management model (Siun Sote)	Model for the identification of multi-sectoral clients and the ensuring of service delivery
Core process model for supporting clients with increased service needs (Helsinki)	Model for the identification of clients with increased service needs and the implementation of measures

3. Multidisciplinary teams and paired teams

Many organisations utilise multidisciplinary or paired teams in the identification and referral of individuals with multi-sectoral service needs. The teams are convened, for example, if one of the professionals is concerned about a client or they are accessing services more frequently, or in cases where a client presents with an issue which cannot be resolved by a single appointment or by a single professional. Alternatively, advice can be sought from a designated contact person or other named party.

4. Multidisciplinary coordinator

Many organisations have designated professionals (e.g. case managers) who are responsible for coordinating referrals, services and the work of multidisciplinary teams once the client's needs have been identified elsewhere in the service system. They investigate the client's circumstances and service needs, convene other professionals as appropriate, and ensure that services are provided as agreed. For example, North Karelia uses a joint case

management model for identifying clients who require multiple services simultaneously. It also ensures that clients receive the appropriate support and services.

Factors that impede identification

The identification of clients with multi-sectoral service needs is hampered by the inadequate development of information systems, disjointed operating cultures, lack of knowledge about the work and competencies of other sectors, and the lack or inadequacy of established models. Most of the identification tools have been developed exclusively for health or social services, and do not support the identification of multi-sectoral needs. Only a few of the tools use combined data from the primary and specialised health care sectors.

Information systems are typically unable to automatically collate data on clients who may need multi-sectoral services, and professionals are unable to see whether a client accesses multiple services or, for example, frequently visits out-of-hours services. Confidentiality regulations were cited as a significant obstacle to information-sharing between professionals and the collation of data from different systems. The utilisation of data is limited.

Established identification models are not used systematically. For example, employees are sometimes unaware that such a tool exists, or they do not know when and how it is meant to be used. Identification is often the responsibility of individual professionals, without support from the system. Nevertheless, the survey results indicate that experiences of using the established models are fairly positive.

IDENTIFICATION OF SUPPORT NEEDS RELATING TO WORK AND FUNCTIONAL CAPACITIES

In the working age population, appropriate services and rehabilitation cannot be delivered without identifying support needs relating to work and functional capacities. Identification models and tools were mapped based on a survey carried out in spring and summer 2019.

Identification models and tools

29 percent of the respondents said that their organisation had an established model or tool for predicting or identifying individual support needs relating to work and functional capacities. For example, identification can be carried out by a specific professional or unit as part of employment support (TYP) services. In addition, paired teams or multidisciplinary teams as well as information systems and measurement tools can also be used in identification and follow-up measures (see Table 2). Some organisations have no established identification models or task allocation in place. In these cases, identification is non-systematic and often takes place in client contact situations.

In addition, the survey results highlighted various identification models and tools that are based on e-services or interactive collaborative work. Statutory interactive models include e.g. activation plans and multi-sectoral job-seeking plans. Other interactive models include the Keropudas model in Tornio, which is based on open dialogue with the client or patient, and the ESY method for analysing a client's life situation collaboratively with him or her based on 10 categories.

Information systems are utilised in the PAULA online service needs assessment of TE employment services, and in the Selfi method of TYP services, which is based on

professional assessment and self-assessment of service needs. The URA client profiling system of TE employment services includes a long-term-unemployment risk indicator. Other tools mentioned included KunnonSyyni, an information-sharing tool for health and social care and TE services.

Table 2. Tools for the identification of support needs relating to work and functional capacities.

Tool	Description
Työelämätutka / Employment Radar	Eight dimensions of an individual's development in regard to working life
Kompassi	Assessment of seven life areas
Abilitator	Work and functional capacities assessment method
IMBA and Melba	Melba: assessment of the psychosocial demands of a job role relative to an individual's abilities IMBA: assessment of physical demand and comparison with an individual's functional capacity
15D	A self-assessment questionnaire for assessing 15 areas of quality of life
Sovari	Anonymous online self-assessment covering five areas of social empowerment
3X10D quality-of-life indicator	Self-assessment of life circumstances consisting of 10 questions
OnnenApila	Self-assessment for young people on eight areas of life

Local practices and inadequate monitoring

There are numerous models for the assessment of support needs relating to work and functional capacities, but they tend to be regional or organisation-specific. Individual professionals carry a lot of responsibility for the identification of support needs. Identification is made difficult by the inadequate development of information systems, the lack or inadequacy of models and methods, disjointed operating cultures, lack of knowledge about the work of other professionals, and attitudes. Information systems and technological solutions, such as safeguarding alerts and AI, are still rarely used.

Respondents called for joined-up, multi-sectoral practices for the prediction and early identification of support needs, and better definition of responsibilities. Suggestions included joint clinics, agreed identification criteria and service paths, and joint client/patient plans. Jointly compatible, comparable and measurable data could be produced by promoting the use of national indicators and standardised client data entry.

Although there were improvement suggestions, 73% of respondents felt that support needs relating to work and functional capacities are mostly identified efficiently, and only 5% felt that identification was not efficient (Figure 2).
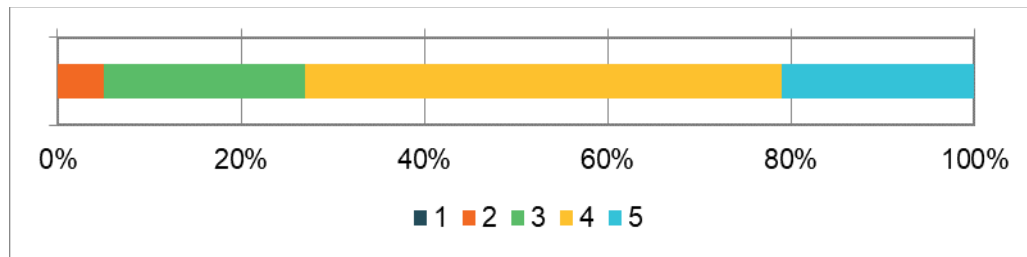
Figure 2. Efficiency in identification of individuals with support needs relating to work and functional capacities (1 = very poor, 5 = very good).

HEALTH CHECKS FOR UNEMPLOYED PEOPLE

Health checks for unemployed people are one way of identifying support needs relating to work and functional capacities. These outcomes were investigated in a survey carried out in spring and summer 2019 and in a survey of health care centres in May 2019.

Statutory requirement

According to the Health Care Act (section 13, 1326/2010), local authorities must provide health checks to young people and individuals of working age who are not covered by student health care or occupational health care. The Ministry of Social Affairs and Health issued guidance notes on this matter in 2013.

Divergent referral models and practices

Based on the survey results, referral methods for health checks for unemployed people can be categorised into three groups.

1. In the most common model, unemployed people are freely referred to health checks from a range of different services and functions. In approximately 40% of the open-ended responses, the only specified criterion was unemployment. The most common referrers were TE employment services, municipal employment services, TYP support employment services and social services.

2. The second group includes referral models that use at least some degree of needs-assessment. Health check referrals are primarily targeted at people with long-term or frequent periods of unemployment, who have not been to a health check recently or ever, or who have health concerns, problems or limitations relating to fitness for work.

3. The third group includes system-based models in which referrals are based on casework. In these models, unemployed clients are systematically referred to or offered health checks at the start of their clientship in services such as adult social work, employment services or TYP services.

Development needs

Based on the survey results, the health check is seen as part of a holistic process, which starts with informing the unemployed person about their access to a health check, followed by a referral, the health check, feedback, follow-up measures and monitoring. 83 percent of

the respondents felt that there is room for improvement in the provision of health checks for unemployed people.

Information about the access to health checks and referral

Unemployed people are not sufficiently informed about their access to a health check. In addition, the health check referral practices and criteria vary by region. Sometimes referrals come so late that the situation has already exacerbated.

Support needs

Some unemployed people would require additional support during the health check process. It would be advisable to have a named person who is responsible for the process and supports the individual through the health check process and subsequent service referrals as appropriate.

Content of the health check

The health checks describe a person's health rather than the need for services and support measures. There were calls to develop the health check more towards assessing work and functional capacities. It was also felt to be important that multi-sectoral collaboration and information-sharing should be enhanced.

Follow-up

Health checks for unemployed people should be better utilised in follow-up. There should be an agreed set of principles for feedback, follow-up plans and multidisciplinary approaches; in addition, follow-up paths for fitness-for-work assessments, rehabilitation and services should be clarified and modelled. The outcomes of follow-up plans should be monitored better than is currently the case.

Deficiencies in statistics and national monitoring

The statistical reporting of health checks is inadequate. 75% of the survey respondents said that there was some degree of statistical reporting of health checks for unemployed people. The information is most commonly logged in health care information systems. The second most common systems appear to be those of TE and TYP employment services. Statistical reporting is partly dependent on the employee in question and is sometimes done manually.

Approximately one in ten respondents said that individuals' experiences of the health checks are reviewed, and approximately one in three said that no reviews were carried out. Many respondents pointed out that client feedback is collected either via general feedback systems or in annual feedback surveys, but these do not necessarily draw attention specifically to the health checks. Respondents said that feedback should be collected in a more systematic manner than is currently the case.

CONCLUSION

The identification of clients with increased or multi-sectoral service needs is inadequate in practice, which may impact the cost outcomes of services and also the welfare of clients and patients. There is too much responsibility on individual professionals to identify clients with increased service needs and refer them to appropriate services.

Different types of identification settings should be taken into account in the prediction and identification models. The models should be able to identify individuals who are outside the service system, those whose clientship has just started, and those who already access services. This requires individual- and population-level data from information systems and indicators, but also methodical approaches such as outreach and interactive work with clients and patients. Identification should be an integral part of the work process and its individual stages.

Based on the study, some general conclusions can be drawn.

1. Examination of practices which are in place in other countries highlights the diversity and multidisciplinary nature of the methods. The client's inclusion should be emphasised in the Finnish context.

2. Population-level analysis based on information collated from databases provides useful information about estimated costs of service use, cost distribution, and the use of multi-sectoral services. Up-to-date monitoring requires that data are entered in standardised format, which should be developed by the health and social care system.

3. Experiences of models that are currently in use in Finland are mostly positive, but the models are not implemented systematically, and practices vary. The collation and utilisation of data in casework and the development of the service system are inadequate.

4. Identification of support needs relating to work and functional capacities is also localised and often left to chance. This can delay access to appropriate services and hinder preventive measures.

5. The delivery of health checks for unemployed people does not fully meet equality standards. Guidance and development are difficult at regional and national levels due to inadequate statistical reporting and monitoring.

The use of locally adapted models and tools is justified in the identification of individuals with increased or multi-sectoral service needs. However, nationally agreed and convergent approaches are required in some aspects in order that the models can provide joined-up and measurable data on specific demographics, issues and diseases. This would also support the development of an evidence base for monitoring, steering and peer-development purposes.

Further reading

Hietapakka L, Karjalainen P, Liukko E & Sinervo T (2019) Monialaista palvelujen yhteensovittamista tarvitsevien asiakkaiden sekä työ- ja toimintakyvyn tukitarpeiden tunnistaminen Suomessa. Tutkimuksesta tiiviisti [Data brief] 52, 2019. Finnish Institute for Health and Welfare (THL), Helsinki.

Kivipelto M, Suhonen M, Koivisto J, Tiirinki H & Miikki R. (2019) Monialaisia palveluja tarvitsevien tunnistamisen ja ennakoinnin mallit kansainvälisesti – kartoittava katsaus. Työpaperi [Working paper] 43/2019. Finnish Institute for Health and Welfare (THL), Helsinki.

Koivisto J & Tiirinki H (eds.) (2020) Monialaisten palvelutarpeiden tunnistamisen ja ennakoinnin toimintamallit ja työkalut – väliraportti. Työpaperi [Working paper] 4/2020. Finnish Institute for Health and Welfare (THL), Helsinki.

Koivisto J & Tiirinki H (eds.) (2020) Monialaisen palvelutarpeen tunnistaminen ja ennakointi sosiaali-, terveys- ja työvoimapalveluissa. Valtioneuvoston selvitys- ja tutkimustoiminnan julkaisusarja 38/2020, Helsinki. http://urn.fi/URN:ISBN:978-952-287-908-0

References

[1] Levett-Jones T, Hoffman K, Dempsey J, Jeong SY, Noble D, Norton CA, Roche J & Hickey N (2010) The 'five rights' of clinical reasoning: An educational model to enhance nursing students' ability to identify and manage clinically 'at risk' patients. Nurse Educ Today 30(6): 515–520.

[2] GeroS/Cezih; Monitoring and Evaluation of Healthcare Needs and Functional Ability of Gerontologic Insurees and Geriatric Patients. Available at: http://www.stampar.hr/sites/default/files/Gerontologija/geros_cezih_monitoring_and_evaluation_of_healthcare_needs_and_functional_ability_elderly_2018.docx

[3] Duarte ED, Tavares TS, Nishimoto CLJ, Azevedo VMGDO, e Silva BCN & da Silva JB (2018) Questionnaire for identifying children with chronic conditions (QuICCC-R): translation and adaptation. Acta Paulista de Enfermagem 31(2): 144–152.

[4] Donate-Martinez A, Rodenas F & Garces J (2016) Impact of a primary-based telemonitoring programme in HRQOL, satisfaction and usefulness in a sample of older adults with chronic diseases in Valencia (Spain). Arch Gerontol Geriatr 2016(62):169–175.

[5] Cronley C, Petrovic J, Spence-Almaguer E & Preble K (2013) Do official hospitalizations predict medical vulnerability among the homeless? A postdictive validity study of the vulnerability index. J Health Care Poor Underserved 24(2): 469–486.

[6] Gandjour AA (2016) Model to Predict the Cost-Effectiveness of Disease Management Programs. Health Econ 19(6): 697–715.

[7] The dataset included the residents at the end of 2017 of Helsinki, Oulu, Päijät-Häme Welfare Consortium (excluding Lahti and Heinola) and South Karelia Social and Health Care District, N = 1,048,180.

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