Ivana Dražić Lutilsky, PhD
Faculty of Economics and Business, University of Zagreb, Zagreb, Croatia
idrazic@efzg.hr

Tatjana Jovanović, PhD
Faculty of Administration, University of Ljubljana, Ljubljana, Slovenia
tatjana.jovanovic@fu.uni-lj.si

Letica Maja, PhD
Faculty f Economcis, University of Mostar, Mostar, Bosnia and Herzegovina
maja.letica@sve-mo.ba

THE ROLE OF INTERNAL REPORTING FOR MANAGEMENT DECISIONS OF PUBLIC HOSPITALS

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ABSTRACT

The purpose of this paper is to research the usage of internal cost accounting reporting system at public hospitals in Croatia, Slovenia and Federation of Bosnia and Herzegovina based on a case study of three public hospitals. It also highlights the importance of internal reports for public hospitals. The research based on the interviews was conducted in the 2018 in one Croatian, one Slovenian and in one public hospital in the Federation of Bosnia and Herzegovina. The interviews were done with accountants and financial officers in public hospitals in all three countries with main aim to examine does public hospitals use possibilities of internal cost accounting reporting system, for what purposes and do they reflect in decision process of management in public hospitals. Results of conducted empirical research has shown that internal cost accounting reporting systems are insufficiently developed due to the accounting framework and poor accounting information system and that are not used in for management decisions. Authors pointed out guidelines regarding future development and usage of internal cost accounting reporting systems in the context of management decisions at public hospitals.

Keywords: *public hospitals, internal reports, Croatia, Slovenia, Bosnia and Herzegovina, Federation of Bosnia and Herzegovina, accounting system*

JEL: M41, M48

1. INTRODUCTION

From the socio-economic aspect, the healthcare is the country's most complex institutional system interacting with people on a daily basis, while health is a precondition for economic prosperity. Namely, the health of individuals directly influences economic outcomes such as productivity, labour supply, and human capital (Daemmrich, 2013). In recent decades, healthcare has seen significant changes in the financing and development of technology. In 2016, health spending is estimated to have accounted for 9.0% of GDP on average across OECD countries and is, after a period of health spending growth in the last two decades, largely unchanged in recent years (OECD, 2017). This trend can be explained with economic recessions since 2007 forcing several EU countries (not all) to make large cuts to healthcare spending. The trend of aging population, patient-centered care and technology improvement encouraged many governments to improve the management efficiency in their systems of national health services (Reeves et al., 2014).

The improvement of the healthcare system started in 1980s with gradual introduction of funding based on the division of patients given by diagnosis (Diagnosis Related Groups model). Under this model, the payment of healthcare providers (hospitals and physicians) depends on the nature of the patient and not on the amount of funds used for treatment (Busse et al., 2011, Mathauer and Wittenbecher, 2013). The system of reimbursement DRGs is the most widely used patient classification system of financing public healthcare organizations in Europe. Despite many similarities, each country's system is unique, and thus defines patient groups or hospital products in a different ways.

But, is the specific DRG funding model enough to enable effective financial management decisions in public hospitals? Does it complement or supplement the cost accounting system capable of precise expenses monitoring for financial management decisions? Countries throughout Europe have realised that DRGs could not serve as payment rate-setting mechanisms without a functioning and effective cost-accounting system. DRG-based hospital payment systems to a large extent depend on high-quality and accurate cost-accounting systems within hospitals (Feyrer et al., 2005). While accounting is not a purpose to itself, but the entire accounting activity is directed in the creation of necessary information to users in the process of business decision-making, it is necessary to present the information in a form understandable to intended users. This indicates the need for drawing up external (basic) financial statements - primary financial statements that comply with common needs of most users and internal reports - specific financial (accounting) reports that provide additional information to meet the specific information needs of specific, primarily internal user (Vašiček et al., 2016). Internal users for public healthcare institutions could be divided on stakeholders

(like Ministry of Health and Health Insurance Funds) and on management of healthcare institution.

Internal accounting and internal reporting objectives are subordinated to the demands of internal users. Creating the internal financial reporting for the internal users is not standardized and is not prescribed. Such approach to creating content and structure of the internal financial reporting gives a lot of flexibility and options to meet individual and specific requirements of internal users. On the other hand the lack of standardization requires more effort, work and knowledge to create internal reports. However, the methodological basis is known, scientifically justified and practically tested. It is the instrumentation of management accounting and cost accounting (Vašiček, V., Dragija, M., ed. 2011). The methodological basis for preparation of internal calculation and selection of a suitable system and method of cost accounting must be consistent with the purpose, goals and tasks of the business and must ensure quality and comprehensive reporting results at all hierarchical levels of management (Vašiček, V., Dragija, M., ed., 2011). A primary focus of cost accounting is on developing information that managers can use for planning and control, which is the reason that cost accounting is often considered to be synonymous with management accounting (Drury, 2013).
The studies of cost accounting in hospitals so far revealed different results. In case of Egyptian hospitals the cost accounting and managerial accounting reform triggered public hospitals to change. The changes in cost accounting and reporting system showed that the hospital offers most of health services at high cost and that some clinics had little profit while others had big losses. Costing reports also gave some explanation in money regarding type of medical materials used, profitable services and duration of process (Hassan, 2005). According to Naranjo – Gil (2004) there is an indirect effect of sophisticated accounting information system on performance of public hospitals through a prospector strategy using data of 112 out of 218 public hospitals in Spain. In Greece, the study of cost and management accounting development stage has shown that the cost accounting is used to a limited extent and with limited information effect in case of public health (Stamatiadis, 2009). Undoubtedly, it is necessary to improve internal accounting and application of the cost methods in the public health systems significantly. According to Ellwood (2009) reporting for public interest and stakeholders seems to be particularly out of alignment with public service reforms in UK. In this paper Ellwood (2009) argued that financial reporting is wrongly focused and misleading. It is necessary to develop analysis reporting about cost structure in public healthcare institutions which is not possible without cost and managerial accounting. According to Azoulay et al. (2007) internal reports coming from cost accounting systems can not only be used by management for decision – making but also to stakeholders in formulating major policies and strategic plans for future activities and for conducting cost of illness studies and health service research.

All of the above, has inspired authors of this paper to investigate the different approaches to the cost accounting system development stage and usage for internal reporting in major (university) public hospitals in Croatia, Slovenia and Federation of Bosnia and Herzegovina. Due to different financing models, different accounting regulatory frameworks and practices our previous research[1] has revealed several differences. In this paper our research focus is on the needs and capabilities of internal reporting systems of three major university hospitals in three observed countries. The main objective of the paper is to research and compare:

a) The comparison of financing and accounting models in three public hospitals, and
b) The internal reporting needs, capabilities and constrains for implementation of full costing method in those hospitals as representatives of health systems in three countries.

The paper is divided into five sections – Introduction, Methodology, Results, Discussion and Conclusion.

2. METHODOLOGY

Since the research was conducted in the form of table research and through interviews with accountants and accounting officers in three public hospitals in three different countries during the 2018, the authors believe that the answers represent their perception about the usage of cost accounting methodologies in internal reporting. Through case study approach this paper is going to highlight similarities and differences between one public hospital in Croatia, Slovenia and Federation of Bosnia and Herzegovina, regarding the full costing method and the usage of internal reports in their accounting systems.
It also offers the theoretical background on the usage of internal reports in the NHSs of different countries. In *Results* part of the paper, the authors comprehensively analyse the accounting system in public hospitals of all three countries, in order to highlight the flaws of the current accounting systems and the empirical research results are presented. At the end of the paper, the authors also formulate relevant recommendations for the introduction of the internal reporting system in public hospitals.

[1] This paper is a result of the Croatian Science Foundation's funding of the project 8509 "Accounting and financial reporting reform as a means for strengthening the development of efficient public sector financial management in Croatia".

3. RESULTS

3.1. The comparison of healthcare systems in Croatia, Slovenia and Federation of Bosnia and Herzegovina

CROATIA
Public healthcare system is financed through Croatian Health Insurance Fund (CHIF) who had the status of an extra-budgetary fund, which until 2002 was not integrated into the budget. One of the most significant financial reforms of the healthcare system dates back to mid-2001 and early 2002, when the process of decentralization it started and where healthcare institutions changed status, and CHIF through a way of paying contributions for health insurance to the state budget on single treasury account. Institutions in the health sector are financed through contributions, but as part of the central budget and the budgets of local and regional governments and becoming budget users through budget accounting. By early 2015, payment of contributions for health insurance is again aimed through CHIF as it exits the State Treasury account, but it does not change the status of healthcare institutions depending on who is the founder and continue to act as budget users.

It should be noted that since the beginning of 2015, the CHIF as the dominant "buyer" of public health services, after 13 years of functioning in the framework of the State Treasury, regained its financial independence. This fact, however, did not cause any change in the budget and the accounting status of public health institutions as was the case when the Health Fund was included in the State Treasury. For public health institutions which are fully owned by the central government, this change has resulted in additional reporting requirements.

SLOVENIA
The healthcare system in Slovenia is centralised with the Ministry of Health as the highest policy design authority on the national level. The Ministry of Health has the task of planning health care regarding state-owned providers and ensuring equal access and patient rights across the whole country. All administrative and regulatory functions of the system take place at the national level; the municipalities have predominantly executive duties. Compulsory health insurance is also centrally managed and administered, with a single public insurer (Health Insurance Institute of Slovenia – HIIS) providing universal compulsory health insurance. The HIIS as the main purchaser of services in the health system and as the key player in the formulation of health services prices, collects more than 70% of all revenues through compulsory health insurance contributions, while the minor share of financing takes part in state budget and voluntary health insurance premiums. Three private companies (Adriatic-Slovenica, Triglav and Vzajemna) provide voluntary health insurance, which is mainly used by patients to cover co-payments (Albreht et al., 2009, Albreht et al, 2016).

Health services in Slovenia are organized into three levels: primary, secondary and tertiary. The primary level covers basic health care and pharmaceutical services provided by community health centres, health stations, private health workers and other providers. The sale and distribution of pharmaceutical products is handled by public institutes founded for this purpose and by private businesses. In 2017, primary health services in Slovenia were provided by 57 community health centres founded by the municipalities (Farkaš, 2017). The secondary level of health services is provided by general and specialised hospitals, sanatoriums and private specialists in individual fields. The tertiary level of care is provided by clinics, clinical institutes and clinical departments. In 2017, services on the secondary and tertiary levels were provided by 26 hospitals founded by the Republic of Slovenia (Farkaš, 2017). Every Slovene citizen has the right to choose a personal physician, dentist and gynaecologist free of administrative or territorial restrictions (Albreht et al., 2009). Patients can contact other experts in the health care field, obtain a second opinion or replace their current physician (Setnikar-Cankar & Stanimirović, 2018).

FEDERATION OF BOSNIA AND HERZEGOVINA

Public health is within the competences of the Entities in Bosnia and Herzegovina (BH further in text), i.e. within competences of the Brčko District of BH, Republic of Srpska and Federation of BH. While in the Republic of Srpska system is mostly centralized as well as in the Brčko District, in the Federation of Bosnia and Herzegovina (FBH further in text) competence is divided between 11 ministries of health (federal ministry and ten cantonal ministries). So, it is obvious that the system is decentralized. The FBH Ministry of Health finances the FBH Health Insurance Institute, FBH Public Health Institute and FBH Transfusion Institute, while cantonal ministries of health allocate resources to cantonal health offices and institutes and clinical centres that then allocate funds to hospitals, health cares and ambulances. Each canton within the Federation has its own Health Institutes whereby cantonal assemblies make financial plans. Then they make agreements with the Institutes on primary care and funds from the Institute go to other beneficiaries.

The FBH Parliaments adopted the Law on Health Insurance on 28 May 1997 where the Article 1 defines the health insurance as part of social insurance of citizens. Citizens, within the system, exercise the right to health care through compulsory allocation of funds on principles of reciprocity and solidarity. Funds for health insurance can be invested on a voluntary basis. Article 2 of the Law defines that citizens of the Federation have right to health insurance that include: compulsory health insurance, expanded health insurance and voluntary health insurance. According to Article 3 all persons employed and those performing certain activities or have certain features covered by the Law have right to the compulsory health insurance (use of health care, financial compensations and assistances under this

Law). Family members of insured persons also have right to compulsory health insurance when is determined by the Law.

Extended and compulsory health insurance, although predicted by the Law (and in this sense it is emphasized that they will be obligation of special funds and institutes when it comes to this) are not yet formed in the FBH.

Funds of the compulsory health insurance are provided in the cantonal health insurance institute in accordance with the purpose. The Board of Directors of cantonal health insurance institute, with the consent of cantonal minister, makes annual plan of revenues and expenses for financing needs from compulsory health insurance, starting from available funds and determined standard of health care and programme of measures for implementation of compulsory health insurance. Cantonal insurance institute is obliged to take necessary measures if available funds are not sufficient to cover expenses of compulsory health insurance in order to provide additional funds. In order to provide additional funds to cover expenses of compulsory health insurance, cantonal health insurance institutes may in coordination with the FBH Ministry of Health arrange part of funds with the FBiH Insurance Institute.

3.2. The comparison of financing and accounting systems in public health institutions in Croatia, Slovenia and Federation of Bosnia and Herzegovina

CROATIA

That status is relevant for the application of the mandatory accounting framework and financial reporting - budget accounting based on the provisions of the Budget Act. Budget accounting is an accounting system that relates to the accounting and monitoring, analysis and reporting of business events, of budgetary and extra-budgetary users. The rules of budget accounting and financial reporting are defined by the implementing regulations adopted on the basis of the Budget Act. Selection of the accounting basis (accounting concepts) determines the range of information provided by the accounting system. Basis of accounting presentation of business events defining moment of recognition of revenues, receipts, expenditures, expenses, assets and liabilities in the financial statements, determines the accounting period in which they will be presented. In budget accounting basis of accounting is a modified accrual basis.

The system of budget accounting and external financial reporting due to its characteristics of comprehensiveness, a large number of different users and tight deadlines reporting is not entirely appropriate for reporting on the specifics of healthcare institutions. Healthcare is not funded as a typical budget beneficiary and it is the only activity in the budget system, which is funded by contractual relationship on the implementation of specific programs and services provided by healthcare institutions. The specificity of the accounting and financial reporting of

healthcare institutions stems from the complexity of the scope of those economic and financial categories that are subject to accounting records.

As for the other entities in the budget system, the system of external financial reporting for public health institutions is regulated by the Regulation on Financial Reporting in Budget Accounting (Official Gazette 3/2015). It includes a general obligation composing basic financial statements like Balance Sheet, Reports on the operations (revenues and expenditures, receipts and expenses), Statement of changes in value of assets and liabilities and Notes to the financial statements. These financial statements give a synthesized data on the whole business expressed in monetary indicators on the basis of strictly regulated rules and meet the requirements of reporting to external users (mainly the Ministry of Finance). In addition to these basic financial statements that are prepared and submitted to the Financial Agency on the use of the Ministry of Finance, the Ministry of Health and the CHF, the local and regional (regional) governments (for institutions that are financed from the decentralized funds) and the State Auditing, health institutions are under the contract to periodically and continuously report on the elements of financial operations to the CHIF.
Additional reports healthcare institutions are obliged to deliver monthly, quarterly and annually. The reports cover all revenues and expenditures, receipts and expenses as well as in the financial statements, with the difference that the grouping of accounting data is not comparable with other comparative data (for example from the basic financial statements) for various methodological basis and approaches to selection of data. The reports also contain non-financial information that is relevant for monitoring the implementation of the contracted health institutions with CHIF. Reporting to CHIF contains the following records (reports) (CHIF, http://www.hzzo.hr/hzzo-za-partnere/prikupljanje-financijskih-izvjesca-ustanova-u-zdravstvu/):

- General information: name of the institution, the reporting period,
- Information on employees (change in the number of medical and non-medical staff, trainees, emergency services and standby staff), assets (cash, stocks) and especially expensive drugs,
- Information about revenues (receipts) and expenses (expenditure),
- Information about expenditures,
- Information about due liabilities (maturity),
- Information about due receivables (maturity),
- Information about staff and hospital care (number of employees, number of beds and patients),
- Information about the daily hospital and polyclinic-consultative healthcare (the number of beds, chairs, and service cases),
- Information about employee expenditure (Gross salaries, other staff costs),
- Information about revenues (realized and invoiced revenues by type of healthcare and payer),

- Information about the number of employees on an annual and quarterly basis (number of employees at the beginning and end of the period, the average number of employees.

The position of healthcare institutions external reporting is divided in accordance with the external reporting rules of budget accounting and reporting according to CHIF.

From all of the above it can be concluded that the current accounting model and system of financial reporting of public health institutions in the Republic of Croatia is not able to provide fully relevant and reliable information basis needed for making economic decisions at the micro level, and economic, social and political decisions at the macro level. It is also not able to provide complete information which will enable effective control over healthcare institutions because of the modified accrual basis.

SLOVENIA

The accounting system in Slovenian public hospitals in based on accrual accounting platform, bookkeeping additionally on cash flow basis regarding the Public Finance Act (Article 99) and the Accounting Act (Article 51).

The usage of accrual accounting provides hospitals the complete insight into details of cost accounting but also possibility for internal and external reporting. The external reporting is determined by the Regulations on the preparation of annual reports for the budget, the budget and other public entities, which regulates the obligation of an annual report preparation. The annual report consists of financial statements and business reports. The financial report comprises the balance sheet, statement of income and expenses and notes to the financial statements. It should be noted that these reports are forwarded to AJPES, Agency for Public Legal Records and Related Services (they collect statements and disclose them), the relevant ministry and the mayor (depending on who is the founder of public health institutions). The required contributions to the balance sheet are: state and movement of intangible assets and tangible fixed assets and review of the status and trends of long-term investments and loans. Financial data must be disclosed in the notes to the financial statements. They are publishing the criteria that were used for the demarcation of income and expense in a public service activity and the activity of selling goods and services on the market. In addition to the basic financial reporting healthcare institutions are required to submit certain forms such as, for hospitals (Jovanović, 2014):

- The form of realization of the program of work,
- The form of income and expenditure,
- The form of monitoring staff,
- The form of investment,
- The form of maintenance,

- The form of the tertiary sector and
- The form of performance indicators.

Slovenian public hospitals have a predisposition to provide fully relevant and reliable information basis needed for making economic decisions at the micro level, as well as economic, social and political decisions at the macro level. They can also provide comprehensive information that will enable effective control of disposal of public goods and help the development of financial management by introducing standards of accountability.

FEDERATION OF BOSNIA AND HERZEGOVINA

The budget and budget beneficiaries accounting that is in use in the FBH, is based on the Law on Budgets and other regulations within the budget regulations, and it is determined in cooperation with the US Treasury Department – Technical Assistance Office back in 1998. Since then regulations went through certain changes but the sense is the same.

Taxation of value added or VAT is within the competences of Bosnia and Herzegovina and not within the Entities as it is case with other taxes. In the Law on Value Added Tax (Official Gazette of BH, 9/05, 35/05, 100/08, n.d.), Article 24 prescribes, inter alia, that medical services and health insurance services are exempt from value added tax (hereinafter: VAT) provided that are done in accordance with regulations concerning the area. However, health institutions can be registered as VAT taxpayers if partially they do deliveries of goods and services that are exempt from tax payments and partially deliveries that are taxable or taxable at zero rates. In this case, as prescribed by Article 63 of the Rulebook on application of the Law on Value Added Tax (Official Gazette of BH, 93/05, 21/06…, 6/10 n.d.) they have right to deduct input tax in the part related to taxable deliveries. At this case it is necessary to provide data on input tax related to taxable and non-taxable deliveries of goods and services. If delivery to a recipient of goods and services in insignificant part is used in taxable purposes (up to 5%) it is considered that delivery is entirely done in non-taxable purposes, and vice versa. If delivered goods or services entirely refer to taxable purposes (over 95%) it is considered that delivery is entirely done in taxable purposes. Unlike VAT, the income tax for legal entities is within the competences of the Entities. In the FBH bodies of federal, cantonal and local self-government, federal, cantonal and local self-government institutions and institutes are not taxpayers of income tax according to provisions of the Law on Income Tax (Official Gazette of FBiH; 97/07, Article 3). The mentioned is in use for situation when their revenue is collected from budget or public funds, sponsorships or grants in cash or nature, interests, dividends, membership fees, revenues from sale or transfer of goods other than goods that were used or are used for performing activities. In the case when they perform activity for which they are not registered, they are subject to

calculation and payment of income tax for the part earned by performing activity. Primarily, public health institutions are established as non-profit organisations, and when they earn profit it is usually invested in equipment and improvement of their activity. Income tax in the FBH is 10% of determined tax base.
When it comes to external financial reports of health institutions, deadlines for submission depend on the nature of institution – public institutions are obliged to submit quarterly reports and annual report, while private has obligation to submit most often only annual report, and rarely (depending on size and other criteria according to the Law on Accounting and Audit) and semi-annual reports. It is necessary to emphasize that private health institutions submit financial reports as companies: balance sheet i.e. report on financial position at the end of period, income statement i.e. report on total result or comprehensive income, changes on capital report, cash flow report and Notes.

Public health institutions in the FBH are subject to the FBH Law on Budget and FBH Decree on budget accounting that implies book-keeping at budget chart of accounts and financial reports whose form and content as well as deadline are defined by the FBH Rulebook on financial reporting and annual calculation of the budget.
In accordance to aforementioned regulations, basic financial reports of budget beneficiaries in the FBH for budget year are:

a) PR – Income Statement,
b) BS – Balance Sheet,
c) NT – Cash Flow Report,
d) KIF – Capital expenses and financing report.

With the mentioned reports, the following are also submitted annually:

e) The Form – Special data on salaries and number of employees,
f) Annual Budget Execution Report,
g) Annual Investment Report,
h) Report on calculated and paid fee for protection from natural and other disasters.

Cash Flow Report is compiled by the Treasury of Ministry of Finance, departments for finances and budget beneficiaries with their own transaction accounts – this category include public health institutes as extra-budgetary funds, or budget beneficiaries with own transaction accounts and possibility of free disposal of own funds. Their business is outside the Treasury Main Book (as opposed to competent ministries of health, the federal and ten cantonal that are in the treasury system).

Table 1: The accounting systems

	FBH	Croatia	Slovenia
Legislation	Law on budgets of FBiH Directive on accouting of the budget of FBiH Rulebook on financial reporting and annual FBiH budget calculation Rulebook on accounting of FBiH budget Law on treasury	Budget Act Regulation on financial reporting in budgetary accounting (Official Gazette, 2011; Official Gazette 2015)	Public Finance Act Accounting Act Regulation on the compilation of annual reports for the budget, budget and other entities governed by public law (Official Gazette RS 115/02-124/08)
Budgetary accounting	Modified accrual basis	Cash-flow basis	Cash-flow basis
	A consolidated annual calculation of budget	Semi-annual and Annual Budget Execution Reports	Semi-annual and Annual Budget Execution Reports
Financial accounting	Modified accrual basis	Modified accrual basis	Accrual basis
	Income statement, Balance sheet, Report on cash flow, Report on capital expenditures and financing.	Balance Sheet Report on revenues, expenses, receipts and expenditures Report on expenditure according to functional classification Report of changes in the value and volume of assets and liabilities Report on liabilities	Balance sheet Statement on revenue and expenses Notes to financial statements

Source: by authors

From the legislation framework of Croatia, Slovenia and Federation of BH it can be concluded that public hospitals in Slovenia have better preconditions for usage of internal reports since they are recording business events on accrual accounting basis.

3.3. The internal reporting needs and capabilities and the constrains for implementation of full costing method in public hospitals in Croatia, Slovenia and Federation of Bosnia and Herzegovina

In order to investigate to what extent internal reports are used in all three public hospitals and whether accounting officers are ready for the implementation of the full cost approach for calculation of costs in order to track costs per patient or healthcare service and to use internal reports for decision making process, the authors examined and tried to answer the following research questions:

RQ1: To what extent do public hospitals in Croatia, Slovenia and Federation of BH use cost accounting methodology?
RQ2: Are the accountants and accounting officers in public hospitals ready for the implementation of the full cost approach for calculation of costs in order to track costs per patient or healthcare service?
RQ3: Is there a usage of internal reports for decision making process?

The principal area of research is to present the current opinion of accountants and accounting officers in three public hospitals of Croatia, Slovenia and Federation of BH about the research questions. In order to gather the necessary information and answer the questions above, an empirical research was done using interviews in Clinical Hospital Centre Zagreb in Croatia (CHC Zagreb), in the Hospital for Gynaecology and Obstetrics Postojna in Slovenia (HGO Postojna) and in University Clinical Hospital Mostar in Bosnia and Herzegovina (UCH Mostar), in the first six months of 2018. The survey was conducted as a part of the project 8509 "Accounting and financial reporting reform as a means for strengthening the development of efficient public sector financial management in Croatia", financed by the Croatian Science Foundation.

CHC Zagreb, Croatia is the largest hospital in Croatia with employed 4.024 medical stuff and 1.079 non-medical stuff. It has 1.795 number of contracted beds with National Health Insurance Fund (NHIF) and used capacity is over 80%. It is publicly funded through NHIF around 85%.
Hospital for Gynaecology and Obstetrics Postojna is a public health institution that plans, organizes and performs medical, teaching, scientific and research work. After 1993 when the hospitals was organized, more the 70.000 children has been born in this institution. The Hospital counts more than 100 medical and non-medical staff and 54 beds. There are also 4 birth-giving beds, 4 beds in the room for intensive care, 28 beds for babies, 4 incubators and 4 heated beds for premature babies. The financing model of Postojna's hospital is based on public financing according to DGR from HIIS, which provides abound 93% of all revenues, while the rest of revenues are collected on the market basis. According to accrual-based accounting, the business result is positive (revenues exceed expenses).

University Clinical Hospital Mostar is a public health institution that plans, organizes and performs medical, teaching, scientific and research work. The Hospital includes 14 clinics, 2 departments, 5 institutes and 5 centres. The Hospital counts more than 200 medical staff in the current year. Number of non-medical staff is also more than 200. The Hospital has 748 beds and their occupancy ranges between 70% to 95%. Number of processed cases during the year is about 26.400 for hospital treatments and about 33.700 for daily treatment. The University Clinical Hospital Mostar is financed from the public financing from the Health Insurance Funds – 95% and public financing from budget – 5%.The modified accrual basis is accounting basis for recognizing revenues and expenses used in the University Clinical Hospital Mostar (revenues are recognized upon payment and expenses when occurred) and never and in any extent it did not differ from prescribed basics, nor the result at the end of reporting period was adjusted.

From main characteristics of public hospitals, we can conclude that Croatian hospital by the number of employees and by the number of contracted beds is larger than the Slovenian and the FBIHs. However, they are all University hospitals, which means that they are institutions that combine services of a hospital with the education of medical students and with medical research.

In this interview, accountants and accounting officers in those hospitals were asked about their internal system of calculating and reporting of costs defined by internal accounting policies, rules and procedures. The questions were focused on the assessment of the quality system of cost accounting and the assessment of provided information to the management regarding decision making and performance measurement.

Therefore, the first questions were about how they record, plan and settle costs in their hospitals. For the purposes of planning costs in both hospitals, costs are recognized by nature (according to the Chart of accounts) for the organizational units (clinics, departments…). Regarding the planning of costs by the funding source from NHIF, the Croatian hospital plans its costs at the organizational units level, but also by the type of DRG services. In the Slovenian hospital, instead, the planning of costs by the funding source from NHIF is done for the total hospital. When planning costs, the University Clinical Hospital Mostar reports its costs by nature at the institutional level as a whole and by places of costs or organisational units (departments, services…), whereas by types that are contractually defined by the financing sources costs are reported by places or organisational units.
The next question required the accounting officers to rank on a five-point Likert scale, ranging from 1 (that corresponds to the lowest degree) to 5 (the highest), how they settle costs and track performance in their hospitals. Grades about cost settlement and performance tracking are reported in Table 2.

Table 2. Grades about cost settlement

Cost objects	CHC Zagreb	HGO Postojna	UCH Mostar
1. by nature in whole hospital	5	5	5
2. by the organizational units (departments, services, ...)	5	1	5
3. the types of services and delivery of the DRG	5	1	2
4. the type of service delivery and the internal calculation	1	1	2
5. per patient	1	1	2

Source: empirical research

Although it is difficult to draw broad generalizations from the scale reported in Table 1, given the inevitable subjectivity of the answers provided by the interviewees, we can still highlight some interesting points. For example, from the answers it can be concluded that neither hospital is settling costs by the delivered health care service or per patient as a final cost object. The Croatian hospital is settling costs also by the DRG because they are in a financial loss and because of that they are trying to calculate which DRG services are profitable to them and which are not. The next question was about coverage of occurred costs of salaries, drugs and overheads with revenues achieved through DRG price. All three hospitals answered that their costs are covered only partially with the DRG revenues from the NHIF. In table 2 we show the cost structure for hospitals.

Table 3. In the structure of total expenses in percentage:

Elements	CHC Zagreb	HGO Postojna	UCH Mostar
Expenses for salaries:	56.93%	50 %	79.03%
Expenses for drugs, blood products, medical supplies:	25.17%	19 %	7.96%
Expenses for overheads (utilities):	9.83%	26%	3.68%
Administration costs:	8.07%	5%	9.33%
Total:	100%	100%	100%

Source: empirical research

The structure of expenses is slightly different. In HGO Postojna expenses for overheads are the highest when comparing with CHC Zagreb and UCH Mostar, because they express depreciation costs, while administration costs are the lowest. Expenses for salaries are the highest in UCH Mostar expenses for drugs, blood products and medical supplies are the lowest.

In order to answer on first research questions to what extent do public hospitals use cost accounting methodology, it can be concluded that the usage is poor in all

hospitals. In the Croatian hospital, salary costs and materials are allocated by the whole hospital and by organizational units. In Federation of BH, material and direct costs, as well as expenses for salaries are allocated at the institutional level, by place of cost i.e. organizational units and per patient, while indirect costs are allocated on organizational units directly through different types of keys in relation to natural type of cost. Business results are measured in the UCH Mostar by organizational parts of the Institution, but they not go further in analysis neither by certain services nor financing sources.

When asked about how they allocate direct and indirect costs of the hospital or of the organizational units to the health care services rendered, the accounting officer in CHC Zagreb answered that they do allocate and that they use allocation bases such as cost of salaries and cost of material for allocating the indirect costs. This means that they use a traditional allocation method even though they do not recognize all indirect costs while recording their costs, given the modified accrual accounting they adopt. In Croatian hospital, they are allocating indirect costs to organizational units but they are not including depreciation in those allocation. In Slovenian hospital they do not allocate costs, neither direct or indirect costs even though they are using accrual accounting basis in accounting information system.

Authors were also interested in knowing how they define market prices for equivalent health care
services that are directly offered on the market. In the Croatian hospital, they use the same prices that are established by contract with the NHIF as a starting point, and they use cost allocation to cover all the expenses including depreciation, even though they do not record such expense in their accounting system. In UCH Mostar costs of provided services by elements of costs (medicines, medical material, medical supplies) are covered by funds from the Institute, but costs exceeds the funds for more than 9%. For determination of service price, that is partially of entirely paid from users, calculation method and allocation of costs per services is in use, in such a way that cover of costs and certain percentage of margin are included. In Slovenian hospital, they use the same prices that are established by NHIF.

The second research question asked whether accounting officers in public hospitals are ready for the implementation of the full cost approach for calculation of costs in order to track costs per patient or healthcare service. All interviewed officers in hospitals believe that for their hospital it would be acceptable to determine the prices of their health care services using the full costing method (ABC method), that would ensure precise monitoring of all the direct and indirect costs for individual health care services or health care programs. For Croatian hospital, it would mean that they have to adopt accrual accounting basis in their accounting information system regarding recording of costs. The same should do the hospital in Federation od BH. That would allow them to develop appropriate cost

accounting methodology for allocation of costs to cost object rather than to develop separate cost accounting information system used for internal purposes and still use modified accrual basis for external financial purposes. Slovenian hospital is in a better position since they have all the preconditions satisfied. They have to develop cost accounting information system as an integral part of their accounting information system.

Since hospitals do not track and allocate costs per patient or per provided health care service, it is difficult for them to measure performances for the health care services provided. It is likely, therefore, that this evaluation may be based, more on intuition and on acquired knowledge and experience. In all three hospitals the interviewed officers said also that they use data from the internal accounting system for performance evaluations, but since they record and allocate costs only at the organizational unit level, it can be concluded that those measurement are also limited at that level.

The full costing approach is a precondition for the development of internal reports that should be produced not only for the benefit of the higher levels of the management, but also for the managers of the various organizational units. In both hospitals, the officers interviewed confirmed that they prepare internal reports to satisfy a requirement expressed directly by the management. Table 4 shows the answers related to the purposes of internal reports and their significance, on a scale from 1 to 5.

Table 4. Significance of internal reports

Usage of internal reports	CHC Zagreb	HGO, Postojna	UCH, Mostar
As an important source of information for decision making and governance	5	5	5
For compliance with a legal reporting obligations	4	1	5
To monitor the execution of the financial plan	5	5	5
For a comparison with other similar institutions and organizations	3	5	3
In order to inform the general public and promoting	3	1	4
For the purposes of internal and external audit and control	5	3	5

Source: empirical research

The data reported in Table 3 shows how, in all three hospital, internal reports are mostly used for decision making, but also for the purpose of internal and external

audit and control. Regarding the objectivity and the accuracy of provided internal reports in CHC Zagreb and UCH Mostar can be discussed regarding the usage of modified accrual basis. In the Slovenian hospital, the most widespread uses of internal reports is a comparison with other similar institutions and organizations.
In order to get a further insight on the relevance of the internal reports, we asked the interviewees to assign a grade to their importance for taking the decisions listed in Table 5 (1 = not at all use, 2 = largely unused, 3 = neither use nor use, 4 = usually used, 5 = fully use).

Table 5. Usage of internal reports for different decisions

Different decisions	CHC Zagreb	HGO Postojna	UCH Mostar
For the award and allocation of budget funds	5	3	5
For the approval of the implementation of individual programs	5	3	5
To determine the price of public health services	3	3	5
For the purchase of asset	5	5	5
For planning and cost control	5	5	4
For employment decisions	4	3	5
To measure the effectiveness of the services provided	4	5	3
To monitor the effectiveness of the services provided and fiscal responsibility	5	5	3

Source: empirical research

In the Croatian hospital, the decisions made based on internal reports include the awarding and allocation of budget funds, the approval of individual programs, asset acquisition and planning and cost control. In addition, internal reports are also used to monitor the effectiveness of the services provided and for fiscal responsibility. The usage of internal reports is very similar in UCH Mostar. In the Slovenian hospital, the internal reports are used for purchasing asset, planning and cost control but also to monitor the effectiveness of the services provided and for fiscal responsibility. Internal reports are also used, to a lower degree, for determining the prices of healthcare services. Management is using occasionally internal reports and the internal reports are mainly result of the current administration, and not because of the quality and developed instruments of cost accounting and management accounting. Research conducted to evaluate the quality of accounting information for management purposes in public hospitals suggest that the current accounting system is not appropriate for the needs of objective monitoring of operations and disclosure of the results of health institutions. It is necessary to develop and implement full costing method to ensure monitoring of all direct and indirect costs by certain services/programmes. The result of development and implementation of the method is use of information on costs that will be useful to

determine price of provided service, planning and costs control, performance measurement as well as decision-making. Therefore, it can be concluded that answer on the third research whether there is usage of internal reports for decision-making purposes is that there is in all three pubic hospitals but the basis and the actual usage of those internal reports is questionable.

4. DISCUSSION

The development of internal reporting enables the provision of additional information, often more analytical character, partially non-financial nature, which are due to the computerization of the health sector, providing a standardized form of internal reports specifically for National Health Fund. The underlying internal report contains information from the accounting information system, as well as information from other system through which non-financial information are provided such as data on the structure of employees, the number of beds, information on overtimes and preparations, patient data, and similar. Internal reporting can provide information on: cost per patient, the cost of the service provided, the cost of individual programs, the allocation and use of resources according to sources if the healthcare institution has accounting information system with all three essential parts: financial accounting, cost accounting and managerial accounting (Vašiček et all, 2016).

Internal financial reports, with the prescribed external financial statements, become indispensable part of periodic and annual reports on the operations of healthcare institutions and so they are a good foundation for more effective planning, decision-making and governance of the healthcare institution. All of that is connected with the term New Public Management and it includes different techniques like cost – improvement programmes, performance indicators, financial management information systems, financial targets, delegated budgets, resource allocation rules, different methods of per – case payment and the general tendency is to replace governmental funding through fixed grants by different reforms implying such accounting information system (Pettersen, 1999).

The public hospitals are under constant pressure of conducting their activities under "market" principles due to limited public (budget) resources not knowing that well developed cost (management) accounting is precondition for economical and efficient use of resources. For greater efficiency and cost controls the healthcare administrations are moving more towards a management – driven regime that might result in a shift from ‘professional dominance to managed care (Dent et al., 2004).

By comparing the healthcare management’s needs in those three environments, we can gain some valuable insights on the benefits, in terms of quality and usefulness

of information generated by the managerial accounting systems in public hospitals, of switching from cash-based public sector accounting to accrual accounting. In fact, healthcare institutions in Slovenia are using accrual accounting for their financial reporting for more than two decades, while in Croatia and in Federation of Bosnia and Herzegovina a modified accrual accounting model prevails. Despite the fact that public hospitals in Slovenia may appear to be in a better position for reaping the benefit of accrual accounting, in terms of relevance and usefulness of the information provided by their managerial accounting system, it seems that there is still room for improvement in the cost accounting systems.

5. CONCLUSION

The purpose of this paper was to highlight similarities and differences between one Croatian one Slovenian and one public hospital from Federation of BH regarding the usage of internal reports in their accounting systems. The authors identified three research questions. In order to answer the first research question, regarding the extent of the usage of cost accounting methodologies in public hospitals, it can be concluded that the usage is poor in all three hospitals. In the Croatian hospital, indirect costs are allocated to organizational units, but depreciation is not included. The accounting officer in the Slovenian hospital expressed that they do not allocate direct and indirect costs of the hospital or organizational units to the health care service rendered, even though those costs are certainly recorded by their accounting system under the accrual basis. In Federation of BH, material and direct costs, as well as expenses for salaries are allocated at the institutional level, by place of cost i.e. organizational units and per patient, while indirect costs are allocated on organizational units directly through different types of keys in relation to natural type of cost.

The second research question asks whether accounting officers in public hospitals are ready for the implementation of the full cost approach for calculation of costs, in order to track costs per patient or healthcare service. All interviewed officers in hospitals believe that for their hospital it would be acceptable to determine the prices of their health care services using the full costing method (ABC method), that would ensure precise monitoring of all the direct and indirect costs for individual health care services or health care programs and allow them deployment of internal reports. For the CHC Zagreb and UHC Mostar hospital, it would mean adopting an accrual accounting basis in their accounting information system regarding recording of costs, which would involve the political will to change the current Law. That would allow the hospital to develop an appropriate cost accounting methodology for the allocation of costs to cost object, rather than to develop separate cost accounting information systems used for internal purposes, and still use modified accrual basis for external financial purposes. The Slovenian hospital is in a better position, since all the preconditions are already satisfied.

However, the cost accounting information system should be developed as an integral part of their accounting information system.

The full costing approach is a precondition for the development of internal reports about costs that should be produced not only for the top management, but also for the managers of organizational units. From the research results, it can be concluded that the accounting officers in all three public hospitals examined are ready for a change in the accounting system and that they believe it can be achieved with the implementation of the accrual accounting basis and cost accounting methodology. Regarding the third research question, on whether there is usage of internal reports for decision-making purposes is that there is in all three pubic hospitals but the basis and the actual usage of those internal reports is questionable.

The limitation of this paper is that it only investigates the accounting system and does not take into consideration the social, political and other economic influences on the financial sustainability of the NHS.

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prof. dr. sc. Ivana Dražić Lutilsky
Ekonomski fakultet, Sveučilište u Zagrebu, Zagreb, Republika Hrvatska
idrazic@efzg.hr

doc. dr. sc. Tatjana Jovanović
Faakultet za upravu, Univerzitet u Ljubljani, Ljubljana, Slovenija
tatjana.jovanovic@fu.uni-lj.si

doc. dr. sc. Letica Maja
Ekonomski fakultet, Sveučilište u Mostaru, Mostar, Bosna i Hercegovina
maja.letica@sve-mo.ba

ULOGA UNUTARNJEG IZVJEŠTAVANJA U DONOŠENJU MENADŽERSKIH ODLUKA U JAVNIM BOLNICAMA

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Sažetak

Svrha ovog rada je istražiti uporabu internog sustava izvještavanja o računovodstvu troškova u javnim bolnicama u Hrvatskoj, Sloveniji i Federaciji Bosne i Hercegovine temeljem ispitivanja slučaja triju javnih bolnica. Također, rad naglašava važnost internih izvještaja za javne bolnice. Istraživanje na temelju intervjua provedeno je 2018. godine u jednoj hrvatskoj, jednoj slovenačkoj i jednoj javnoj bolnici Federacije Bosne i Hercegovine. Intervjui su obavljeni s računovođama i financijskim službenicima u javnim bolnicama u sve tri države s ciljem da se ispita da li javne bolnice koriste mogućnosti sustava izvještavanja o internom računovodstvu troškova, u koje svrhe i odražavaju li se u procesu odlučivanja o upravljanju javnim bolnicama. Rezultati provedenih empirijskih istraživanja pokazali su kako su interni sustavi računovodstvenog izvještavanja o troškovima nedovoljno razvijeni zbog računovodstvenog okvira i lošeg računovodstvenog informacijskog sustava te se ne koriste u odlukama menadžmenta. Autori su istakli smjernice za budući razvoj i uporabu internih sustava izvještavanja o računovodstvu troškova u kontekstu odluka upravljanja u javnim bolnicama.

Ključne riječi: *javne bolnice, interna izvješća, Hrvatska, Slovenija, Bosna i Hercegovina, Federacija Bosne i Hercegovine, računovodstveni sustav*

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