



Journal of Nursing

Revista de Enfermagem

UFPE On Line

ISSN: 1981-8963

ORIGINAL ARTICLE

TRACER CONDITION FOR ANALYSIS OF ATTENTION IN HEALTH TO DIABETIC PATIENTS BY FAMILY HEALTH STRATEGY PROGRAM

CONDIÇÃO MARCADORA PARA ANÁLISE DA ATENÇÃO EM SAÚDE AOS DIABÉTICOS PELA ESTRATÉGIA DE SAÚDE DA FAMÍLIA

CONDICIÓN MARCADORA PARA ANÁLISIS DE LA ATENCIÓN EN SALUD A LOS DIABÉTICOS POR LA ESTRATEGIA DE SALUD DE LA FAMILIA

Maria de Fátima Meinberg Cheade¹, Tayane Vieira Ramos de Alencar², Andréia Insabralde de Queiroz Cardoso³, Diana Paula de Souza Rego Pinto Carvalho⁴, Giovanna Karinny Pereira Cruz⁵, Marcos Antonio Ferreira Júnior⁶

ABSTRACT

Objective: to evaluate the care provided by a team of the Family Health Unit (FHU) to patients with diabetes mellitus (DM). **Method:** descriptive study performed in the Family Health Strategy Nossa Senhora das Graças, Campo Grande/MS. The study population comprised members of the FHS with DM who were hospitalized. The research project was approved by the Research Ethics Committee, CAAE 01679512.9.0000.0021. Data were described and analyzed and the discussion was made in light of the literature. **Results:** we identified 118 diabetic patients registered and one hospitalized for complications due to diabetic foot, with an expected hospitalization rate for this population of 0.58/118. **Conclusions:** the evaluation process of health services should be permanent, with increase of time analyzed and data collected in order to maintain satisfactory assistance to the assisted population. **Descriptors:** Diabetes Mellitus; Evaluation; Family Health Strategy.

RESUMO

Objetivo: avaliar a assistência prestada por uma equipe da Unidade Básica de Saúde da Família (UBSF) aos pacientes com Diabetes Mellitus (DM). **Método:** estudo descritivo realizado na ESF Nossa Senhora das Graças, Campo Grande/MS. A população estudada foi composta por usuários da ESF portadores de DM que foram internados. O projeto de pesquisa foi aprovado pelo Comitê de Ética e Pesquisa, CAAE 01679512.9.0000.0021. Os dados foram descritos e analisados e a discussão foi feita à luz da literatura. **Resultados:** identificou-se 118 pacientes diabéticos cadastrados e um internado por complicações devido ao pé diabético, sendo a taxa de internação esperada para esta população de 0,58/118. **Conclusões:** o processo de avaliação dos serviços de saúde deve ser permanente, com o aumento do tempo analisado e dos dados coletados, a fim de manter a assistência satisfatória à população assistida. **Descritores:** Diabetes Mellitus; Avaliação; Estratégia de Saúde da Família.

RESUMEN

Objetivo: evaluar la asistencia prestada por un equipo de la Unidad Básica de Salud de la Familia (UBSF) a los pacientes con Diabetes Mellitus (DM). **Método:** estudio descriptivo realizado en la ESF Nossa Senhora das Graças, Campo Grande/MS. La población estudiada fue compuesta por usuarios de la ESF portadores de DM que fueron internados. El proyecto de investigación fue aprobado por el Comité de Ética e Investigación, CAAE 01679512.9.0000.0021. Los datos fueron descritos y analizados y la discusión fue hecha a la luz de la literatura. **Resultados:** Se identificaron 118 pacientes diabéticos registrados en un internado por complicaciones debido al pie diabético, siendo la tasa esperada para ésta población de 0,58/118. **Conclusiones:** el proceso de evaluación de los servicios de salud debe ser permanente, con el aumento del tiempo analizado y de los datos recogidos, a fin de mantener la asistencia satisfactoria a la población asistida. **Descriptores:** Diabetes Mellitus, Evaluación, Estrategia de Salud de la Familia.

¹Nurse, PhD Professor, Department of Nursing, Federal University of Mato Grosso do Sul/UFMS. Campo Grande (MS), Brazil. E-mail: mdfcheade@uol.com.br; ²Nurse, Specialist in Health Services Management, School of Public Health of Mato Grosso do Sul/UFMS. Campo Grande (MS), Brazil. E-mail: tayenf@yahoo.com.br; ³Nurse, Master of Infectious and Parasitic Diseases, Facilitator of Teaching and Learning Process, Clinical Management Specialization Course for Unified Health Services Hospitals, Institute of Education and Research Sírio-Libanês Hospital in São Paulo. São Paulo (SP), Brazil. E-mail: andreiaqc@gmail.com; ⁴Nurse, Master, PhD Student, Graduate Nursing Program, Federal University of Rio Grande do Norte/UFRN/Natal/RN). Natal (RN), Brazil. E-mail: diana-rego@hotmail.com; ⁵Nurse, Master Student, Graduate Nursing Program, Federal University of Rio Grande do Norte/UFRN/Natal/RN). Natal (RN), Brazil. E-mail: giovannakarinnny@gmail.com; ⁶Nurse. PhD Professor, Graduate Nursing Program, Federal University of Rio Grande do Norte/UFRN. Natal(RN), Brazil. E-mail: marcosjunior@ufrnet.br

INTRODUCTION

Over the last thirty years, there has been a profound change in the morbidity and mortality profile of the Brazilian population. Currently, there is high prevalence of diseases and deaths due to chronic non-communicable diseases (NCDs), among them, diabetes mellitus (DM), which today constitutes a pandemic. Diabetes and Hypertension are in first place as responsible for deaths, hospitalizations and lower limb amputations. It is estimated there are in Brazil about 7.8 million adults diagnosed with diabetes.¹

Diabetes Mellitus (DM) is a metabolic disorder resulting from defects in insulin secretion and/or defects in insulin action. It is characterized by hyperglycemia manifested by symptoms such as polyuria, polydipsia, weight loss, blurred vision or acute complications that may be life-threatening.²

The prevalence of DM has increased due to aging population, greater urbanization, growth of obesity, sedentary lifestyle and increased survival of diabetic patients. For this reason, the adoption of preventive measures is a priority for global public health in order to significantly reduce morbidity and mortality by DM. It is estimated that in 1995 the DM reached 4% of the adult population worldwide and that by 2025 it will reach the amount of 5.4% of diabetic people.³

In 2011, the Municipal Health Network of Campo Grande totaled the record of 21,193 diabetic people in the health units of Primary Care.⁴ DM is considered a major public health problem in Brazil, and has assumed alarming proportions of prevalence, with about 7.6% for the population aged between 30 and 69 years old and 20% for the elderly population with 70 years old or more.⁵ It is responsible for complications that can lead to serious health problems, representing a socioeconomic burden to the annual health budget.⁶ Estimates of direct cost to Brazil are around 3.9 billion dollars, whereas for Argentina this represents 0.8 billion and 2 billion to Mexico.⁷

This situation justifies the growing concern for the control and prevention of this disease and its complications, which are expressed by the increasing morbidity and mortality rates and the consequences of disabilities that this disease causes to the affected patient.⁸ Most of these complications could be avoided with preventive measures, implemented through health programs for the control of DM or its acute and chronic complications.⁷

Adequate care to DM patients in primary care reduces adverse economic effects caused by hospitalizations, sequelae and

complications. Research on hospitalization for diabetes complications assists as an indicator of the effectiveness of health care and interventions implemented. Government spending exclusively on hospitalizations attributable to DM is significant, representing 2.2% of the budget implemented by the Ministry of Health.⁹

Various strategies and actions are being taken with the aim of reducing the occurrence of cardiovascular diseases in the population. The implementation of the Family Health Strategy (ESF) as a priority of Primary Care favors access to the multi-sectoral and integrated measures that the approach of chronic non-communicable diseases (NCDs) requires for its conformation and different work process.¹

The Family Health teams work with health promotion, prevention, recovery, rehabilitation of more frequent diseases and disorders, in addition to maintaining the health of the population under their responsibility. It is characterized, among others, for intervening on the risk factors to which the community is exposed and for providing comprehensive, permanent and quality care to the population.¹⁰

It has been growing in Brazil, in recent decades, initiatives to institutionalize health evaluation as a result of the intention to give rationality to sectoral interventions, by evaluating actions, services and facilities, and also programs, systems and health policies.¹¹

The evaluation of health services is a management and planning tool based on an explicit and dynamic judgment in order to trigger a movement of transformation in practices and services towards a previously desired quality.¹²

Assessors need to be proactive in this process, rescuing the ideals and principles of the SUS, in order to integrate the expanded concept of completeness as a social action resulting from democratic interaction between the actors in their everyday practice in health care provision in the different attention levels of the system.¹³

"Tracer Condition" is a technique used to evaluate the quality of health care through the evaluation of the care given to a set of conditions or diseases. It is included in the analysis the resolution, proper use of complementary tests, opportunity of actions, access to medicines and other health care levels.¹⁴

The Tracer Condition is a frequent health condition assisted routinely in health services. Its use, as valuation technique, allows us to

detect problems and bottlenecks in health care paid to a given population.¹⁵

Because of the relevance of DM and its complications, the differentiated work proposed to be performed by the Family Health Teams and the managerial role in the control and evaluation of health actions, this work aims to analyze the care provided to diabetic patients in the coverage area of the FHS through the Tracer Condition, whose variable to be investigated is the hospitalization for complications of diabetes and its causes.

METHOD

This was a descriptive study, performed in the city of Campo Grande, Mato Grosso do Sul, in the area covered by the Basic Family Health Unit (BFHU) Nossa Senhora das Graças, North Sanitary District.

We used data from the coverage area of one of the Family Health Strategy teams that remained complete in its professional staff during the study period.

The research participant population consisted of patients with DM, registered by the seven Community Health Agents (CHA) working in the one hundred twenty-nine area. The number of diabetic patients registered by CHAs in the staff area totaled 118 patients.¹⁶

Data collection took place in two stages, in the first: survey through the D Sheets, specific for diabetes information and the Monthly Reports of SIAB (*Sistema de Informação da Atenção Básica* - Primary Care Information System), the occurrence of hospitalization for complications of DM, during the year 2011, recorded in the specific field for this item by CHAs. In the second: home visits to patients identified in the first step for interviews using

a semi-structured form designed to identify the variables studied.

The study included the users over eighteen years of age with record of hospitalization from complications of DM, who agreed to participate and sign the Informed Consent Form (ICF).

We considered as exclusion criteria patients less than eighteen years of age, those who were not contacted and/or found during home visits for the interview and/or refused to participate.

In agreement with the Municipal Public Health Department of Campo Grande, this research was approved by the Research Ethics Committee of the Federal University of Mato Grosso do Sul (number CAAE 01679512.9.0000.0021).

Data were described and analyzed and the discussion was made in the light of the literature.

RESULTS AND DISCUSSION

It was identified, from the 118 diabetic patients registered, 1 user with DM hospitalized for complications resulting from diabetic foot in 2011, in the area covered by the BFHU studied.

According to Figure 1, the data about hospitalizations in 2011, in Campo Grande - MS, have not been finalized, showing hospitalizations for complications of DM recorded until the year 2010, with the respective hospitalization rates in the period for the population of 30-59 years old, this age group coinciding with the age group of users admitted in the study area of scope.

	2008	2009	2010	2011
Population between 30 and 59 years old in Campo Grande	287.194	293.615	293.615	293.615
Absolute number of inpatients	44	67	65	-
Hospitalization rate (10,000 inhabitants)	1,53	2,28	2,21	-

Figure 1. Population, number and rate of hospitalizations for diabetes complications in the age group between 30 and 59 years old. Campo Grande - MS, 2012.
Source: SIH, 2011.

Considering the last year of data release of SIH, the hospitalization rate is indicated as 2.21/10,000 inhabitants, aged between 30 and 59 years old. In the same period, the population of the study team, with the same age group, was 1,493 people, and after calculation the expected hospitalization rate was 0.33/10,000 inhabitants.

High rates of hospitalization for conditions sensitive to primary care in a population or subgroup thereof may indicate problems of

access to health care or of its performance. Excess hospitalizations is a warning sign, which can activate analysis mechanisms and search for explanations for its occurrence.¹⁷

Hospitalizations in Brazil, attributed to the DM, were estimated at 836,300 annually, with 49.3/10,000 inhabitants.⁹ Based on this information, considering the 118 diabetic patients registered in the covered area and the occurrence of one hospitalization within one year, it is observed that the expected

hospitalization rate for this population was 0.58/118. So, it is necessary to monitor the hospitalization rate of this group in a longer period, at least, another year, to obtain systematic data and monitor of hospitalizations for further analysis of the obtained hospitalization rate, which would enable to analyze the correlation between assistance in primary care and hospital admissions by patient groups.

Regarding the identified hospitalization case, this is about a 35 years old-man, diagnosed with the disease for 23 years, who has been monitored in the Nossa Senhora das Graças BFHU and in the Reference Service to Diabetic People (SEREDI in Portuguese). He had been hospitalized for four days in December 2011, at the Regional Hospital, due to the occurrence of diabetic foot. He reports associating this hospitalization to DM and recognizes that it could have been avoided if he had put into practice the guidelines given to him by the multidisciplinary team of health institutions that monitor him.

Diabetic foot causes suffering, as a change in the style and quality of life, sometimes, preventing the patient from performing their normal activities. It is also associated with it the high economic and social costs, due to amputations, early retirements, loss of work

roles in the productive age group, work absenteeism and hospital medical costs.⁷

Most hospitalizations for DM occur in women, as well as most hospital deaths from this cause are women, however, there is a higher mortality in males. It is observed increase in hospitalizations with age (more pronounced for women). The study shows that men are hospitalized less often (48%) than women, but with greater total spending (53%). Hospitalization of patients from 45 to 64 years old represented the highest volume (45%).⁹

As an instrument for planning, control, regulation and evaluation of SUS (Unified Health System), it was necessary to establish care coverage parameters, which represent ideal technical recommendations, constituting a reference to guide the SUS managers of the three levels of government in planning, scheduling and prioritization of health actions to be developed, and may suffer regional and/or local adaptations in accordance with epidemiological and financial realities.¹⁸

Figures 2 and 3 show the medical appointments and nursing consultations scheduled and carried to users with DM in the city of Campo Grande-MS and Nossa Senhora das Graças BFHU in 2011. It evidences the scope of the agreed health indicators related to service to DM carriers.

Goal	Unit of measure	Quantitative scheduled	Accomplished	%
Outpatient (medical and nursing) consultation in diabetic patient in BHU/BFHU	Medical consultation in diabetic patient in BHU/BFHU	52,050	51,463	98.9%
	Nursing consultation in diabetic patient in BHU/FHU	34,700	33,692	97.1%
Assessment in risk feet in diabetic patients	Diabetic Foot Assessment (50% of diabetic patients registered)	8,760	10,141	115.8%

Figure 2. Medical and nursing consultations scheduled and performed to users with DM. Campo Grande - MS, 2011.
Source: Hygia, 2011.

Goal	Unit of measure	Quantitative scheduled	Accomplished	%
To perform outpatient (medical and nursing) consultations in diabetic patient in BHU/BFHU	Medical consultation in diabetic patient in BHU/BFHU	621	758	122%
	Nursing consultation in diabetic patient in BHU/FHU	414	287	70%
To perform assessment of risk feet in diabetic patients	Diabetic Foot Assessment (50% of diabetic patients registered)	104	114	110%

Figure 3. Medical and nursing consultations scheduled and performed to users with DM in Nossa Senhora das Graças BFHU. Campo Grande MS, 2011.
Source: Hygia, 2011.

Overall, the indicators are synthesis measures that contain relevant information on certain attributes and dimensions of health status and the health system performance. They should reflect the health status of a

population and serve for the monitoring of health conditions.¹⁹ Since the parameter for the calculation of the medical consultations on the population is 2-3 visits/year/inhabitant.¹⁸

In Figure 4, we show the procedures performed to the patient identified in this study, which has undergone hospitalization due to complications from diabetes and diabetic foot, and the procedures were performed in Nossa Senhora das Graças BFHU and also in other health care units.

Procedures	N. Sr. ^a das Graças BFHU	Other Health Units	Total
Dressing	03	25	28
Consultation	10	10	20
Pre-consultation	07	05	12
Material delivery for home dressing	10	0	10
Educational session	07	02	09
Capillary glycemia	06	0	06
Dental appointment	06	0	06
BP Measurement	04	0	04
Examinations Collection	0	02	02
Shoe and sock request	0	02	02
Diabetic Foot assesment	0	02	02
Debridement	0	01	01
Minor surgery	0	01	01
After consultation	0	01	01
Risk classification in UPA	0	01	01
Medication	01	0	01

Figure 4. Procedures in patient identified in this study due to hospitalization during the period. Campo Grande - MS, 2011. Source: Hygia, 2011.

It was noted the completion of 28 dressings, 3 in BFHU and 25 in other health units, most of them in SEREDI. It amounted to 20 medical and nursing consultations in the period, exceeding the calculated parameters. There is also the record of the patient's participation in 9 educational sessions, and 06 dental visits. More complex procedures, assigned to the Secondary and Tertiary Care, were also observed, as follows: two shoes and sock requests to the House of Health, two diabetic foot assessments performed by a specialist, one wound debridement procedure and one minor surgery. There is also the medical consultation record in BFHU on December 22, 2011, in which a change in the patient's foot was perceived and local dressing and intramuscular administration of medication were performed.

Four days after this assessment, the patient had a medical consultation with an orthopedist, who observed necrotic area in the patient's toe, referred him for assessment with vascular physician at Santa Casa de Campo Grande, from where he was referred to the Regional Hospital and remained hospitalized for four days.

It is observed that the care provided to the hospitalized patient in study was performed in all care units of the Municipal Health Network of Campo Grande, in his health needs in relation to his disease, which started on primary care through the FHS, which is in accordance with the regulations of Decree 7508/11, which recommends that comprehensive care is started and completed in the Health Care Network through a set of articulated actions and health services in

increasing levels of complexity, in order to ensure the comprehensiveness of health care.²⁰

Health Care Network is understood as an articulated and continuous set of actions and preventive and curative services, individual and collective, required for each case, in all levels of complexity of the system.²¹

The concept of comprehensiveness refers, mandatorily, to the integration of services through care networks, recognizing the interdependence of actors and organizations, due to the fact that none of them have all of the resources and skills required for the solution of health problems of a population in their various life cycles. It is essential to develop cooperation and coordination mechanisms that compose an efficient and responsible management of collective resources, which respond to the unique health needs at the local and regional levels.¹³

The medical care presented in health care to the user before his hospitalization consisted of quantitative data rather than qualitative, and is one of the limitations of this study to the monitoring and evaluation of care.

According to the study, in regard to the assessment of the feet of the aforementioned patient, it appears that the frequency of the medical records is low. This data shows that the foot assessment and clinical and educational behaviors associated with this procedure do not constitute as information available for the planning, implementation and evaluation of actions for self-care with their feet. This context may represent risk to the user, since there were observed gaps in

the records regarding the identification of risk factors for ulcers and amputations, as well as regarding the registration of preventive, curative and educational measures for foot care.²²

Health evaluation is, at the same time, complex and required. In the current process of expansion and consolidation, in which the FHS is, evaluation is a commitment by health managers at all levels. There is a need to harmonize instruments and agreeing the object and the evaluation objectives.¹²

It is noted the need to recognize evaluation as an ongoing process for achieving quality care to DM patients. There is also a need to design a common care plan, to know the characteristics of users who attend health services, in order to identify, develop health diagnoses, implement and evaluate interventions for them, based on a management process, in which the descriptive protocols can be transformed into concrete interventions, in the context of health care, whose aspects has been cited as the first steps to improve care and reduce morbidity and mortality.²²⁻³

CONCLUSION

It was observed that for correct evaluation of hospital admission rates in the diabetic population assisted by BFHU, it is necessary to obtain information for a longer period of time, since only one year of data is a very short period, making it unsatisfactory for such evaluation; it was also observed, in relation to the case of hospitalization occurred, that comprehensive care was provided by the Health Care Network, through the provision of care and procedures, attention levels involved and systematic monitoring by professionals, including the FHS.

We concluded, however, that the evaluation process should be permanent in order to minimize risks and harm to users and serve as a tool for the management to implement the work process, making the service satisfactory.

REFERENCES

1. Ministério Da Saúde. Departamento de Atenção Básica - Portal da Saúde. hiperdia.datasus.gov.br. Acessado em 05/03/2012.
2. Gross, JL; Silveiro, SP; Camargo, JL; Reichelt, AJ; Azevedo, MJ. Diabetes Melito: Diagnóstico, Classificação e Avaliação do Controle Glicêmico. Arq bras endocrinol metab. São Paulo on-line [Internet] 2002 Feb [cited 2013 Jan 13];46(1) :[about 5 p.]. Available from: <http://www.scielo.br/pdf/abem/v46n1/a04v46n1.pdf>
3. Ferreira, CLRA; Ferreira, MG. Características epidemiológicas de pacientes diabéticos da rede pública de saúde - análise a partir do sistema Hiperdia. Arq bras endocrinol metab. São Paulo on-line [Internet] 2009 Feb [cited 2013 Jan 13];53(1):[about 5 p.]. Available from: <http://www.scielo.br/pdf/abem/v53n1/v53n1a12.pdf>
4. Coordenação da Atenção Básica. CAB - Remus, Campo Grande - MS. 2011.
5. Lazzari, CC; Volquind, GG; Souza, LNS. Tratamento de idosos com diabetes em uma Unidade Básica de Saúde. Mom perspec saúde. Porto Alegre on-line [Internet]. 2005 Jul./Dez [cited 2013 Jan 13];18(2):[about 5 p.]. Available from: <http://www2.ghc.com.br/GepNet/docsrevista/revista2005n2.pdf#page=23>
6. Salomé, GM. O enfermeiro frente ao paciente com lesão Neuropática: relato de experiência. Rev nursing. São Paulo; 2007 Abr. 9 (107):171-75
7. Salomé, GM; Blanes, L; Ferreira, LM. Capacidade funcional dos pacientes com diabetes mellitus e pé ulcerado. Acta paul enferm. São Paulo on-line [Internet]. 2009 [cited 2013 Jan 13]; 22(4):412-416. Available from: <http://www.scielo.br/pdf/ape/v22n4/a10v22n4.pdf>
8. Bortoletto, MSS; Viude, DF; Haddad, MCL; Karino, ME. Caracterização dos portadores de diabetes submetidos à amputação de membros inferiores em Londrina, Estado do Paraná. Acta scientiarum. Maringá on-line [Internet]. 2010 [cited 2013 Jan 13];32(2):205-13. Available from: <http://eduem.uem.br/ojs/index.php/ActaSciHealthSci/article/view/7754>
9. Rosa, RS; Schmidt, MI; Duncan, BB; Souza, MFM; LIMA, AK; Moura, L. Internações por Diabetes Mellitus como diagnóstico principal na Rede Pública do Brasil, 1999-2001. Rev bras epidemiol. São Paulo on-line [Internet]. 2007 Dez [cited 2013 Jan 13];10(4):465-78. Available from: http://www.scielo.br/scielo.php?pid=S1415-790X2007000400004&script=sci_arttext
10. Brasil. Ministério da Saúde. Departamento de Atenção Básica. Atenção Básica e a Saúde da Família. Available from: <http://dab.saude.gov.br/atencaobasica.php>
11. Aquino, EML. Avaliação em saúde: dos modelos teóricos à prática na avaliação de programas e sistemas de saúde. Cad saúde

pública. Rio de Janeiro on-line [Internet] 2006 Jan [cited 2013 Jan 13]; 22(1):229-31 Available from:

http://www.scielo.org/scielo.php?pid=S0102311X2006000100027&script=sci_arttext

12. Silva, JM; Caldeira, AP. Avaliação para melhoria da qualidade da estratégia saúde da família e a qualificação profissional. Trab. educ. saúde, Rio de Janeiro. 2011 Jan/Mar; 9 (1).

13. Hartz, ZMA; Contandriopoulos, AP. Comprehensive health care and integrated health services: challenges for evaluating the implementation of a "system without walls". Cad saúde pública, Rio de Janeiro. on-line [Internet]. 2004 [cited 2013 Jan 13]; 2(Sup. 20): 331-36. Available from: <http://www.scielo.br/pdf/csp/v20s2/26.pdf>

14. Bottari, CMS; Vasconcellos, MM; Mendonça, MHM. Cervical cancer as a tracer condition: a proposal for evaluation of primary health care. Cad saúde pública [Internet]. 2008 [cited 2013 Jan 13]; 1(Sup. 24):111-22. Available from: <http://www.scielo.br/pdf/csp/v24s1/16.pdf>

15. Penna, MLF. Condição Marcadora e Evento Sentinela na Avaliação de Serviços de Saúde. Desenvolvimento gerencial de unidades básicas do Sistema Único de Saúde. Brasília: Organização Pan-Americana da Saúde/Organização Mundial da Saúde; 1997.

16. Brasil. Ministério da Saúde. Secretaria de Atenção à Saúde. Departamento de Regulação, Avaliação e Controle. Coordenação-Geral de Sistemas de Informação Sistema de Informação Hospitalar do SUS. SIH. Município de Campo Grande, Mato Grosso do Sul; 2011.

17. Alfradique, ME; Bonolo, PF; Dourado, I; Lima-costa, MF; Macinko, J; Mendonça, CS; Oliveira, VB; Sampaio, RLF; Simoni, CD; Turci, MA. Ambulatory care sensitive hospitalizations: elaboration of Brazilian list as a tool for measuring health system performance (Project ICSAP - Brazil). Cad saúde pública, Rio de Janeiro. on-line [Internet]. 2009 Jun 25[cited 2013 Jan 13];(6):1337-349. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0102-311X2009000600016

18. Brasil. Ministério da Saúde. Portaria do Gabinete Ministerial nº 1101. Brasília, DF: 2002. Available from: <http://portal.saude.gov.br/portal/arquivos/pdf/portaria%20GM%201101%2002.pdf>

19. Rede Interagencial de Informação para a Saúde. Indicadores básicos para a saúde no Brasil: conceitos e aplicações. / Rede Interagencial de Informação para a Saúde -

Ripsa. - 2nd ed. Brasília: Organização Pan-Americana da Saúde, 2008. ISBN 978-85-87943-65-1. Available from:

http://portal.saude.gov.br/portal/arquivos/pdf/ind_basicos_2_edicao.pdf

20. Brasil. Ministério da Saúde. Decreto 7508/11. Brasília, DF: 2011. Available from: <http://presrepublica.jusbrasil.com.br/legislacao/1028206/decreto-7508-11>

21. Brasil. Ministério da Saúde. Portaria do Gabinete Ministerial nº 3925. Brasília, DF: 1998. Available from: <http://www.brasilsus.com.br/legislacoes/gm/15986-3925>

22. Silva ASB, Santos MA, Teixeira CRS, Damasceno MMC, Camilo J, Zanetti ML. Avaliação da atenção em diabetes mellitus em uma unidade básica distrital de saúde. Texto & contexto enferm [Internet]. 2011 July/Sept 20[cited 2013 Jan 13];(3)512-18. Available from:

http://www.scielo.br/scielo.php?pid=S0104-07072011000300012&script=sci_arttext

23. Costa IKF, Tibúrcio MP, Melo GSM et al. Characterization of diabetics and hypertensive people monitored by the computerized system of registration and monitoring of hypertensive and diabetics. J Nurs UFPE online [Internet]. 2012 Nov [cited 2013 Jan 13];6(11):2719-28. Available from: <https://www.google.com.br/#q=p%C3%A9+diab%C3%A9tico+reuol>

Submission: 2013/10/23

Accepted: 2014/12/28

Publishing: 2015/02/01

Corresponding Address

Marcos Antonio Ferreira Júnior
Universidade Federal do Rio Grande do Norte
Departamento de Enfermagem
Av. Senador Salgado Filho, s/n. – Campus
Lagoa Nova
CEP 59072-970 – Natal (RN), Brazil