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Mariana de Sousa Dutra Borges^{1,2}
Laura Davison Mangilli¹
Michelli Cristina Ferreira²
Letícia Correa Celeste¹

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Correspondence address:

Letícia Correa Celeste
Centro Metropolitano,
conjunto A, lote 01, Brasília (DF),
Brazil, CEP: 72220-275.
E-mail: leticiaceleste@unb.br

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Presentation of a Clinical Practice Protocol for Patients with Swallowing Disorders

Apresentação de um Protocolo Assistencial para Pacientes com Distúrbios da Deglutição

ABSTRACT

Purpose: To describe the implementation process of a Clinical Practice Protocol for Patients with Swallowing Disorders (CPSD) in a public hospital of high technological density in the Federal District of Brazil. **Methods:** This is an Experience Report study which describes the implementation process of a Clinical Practice Protocol for Patients with Swallowing Disorders in a public hospital of high technological density in the Federal District. **Results:** The protocol was implemented in three stages: Stage 1 - literature search on the procedures that characterize the best propaedeutic and therapeutic practices; Stage 2 - discussion with a multidisciplinary team about the adjustments needed to implement the CPSD; and Stage 3 - Final proposal for the protocol implementation considering the particularities of the service. **Conclusion:** The final proposal of the Clinical Practice Protocol for Patients with Swallowing Disorders (CPSD) provides a predefined, systematic method to monitor patients with swallowing disorders in high technological density health facilities. In addition to being inexpensive, the CPSD fosters decision-making, favors early detection of disorders, and assists managers with evaluating the quality of the service offered.

RESUMO

Objetivo: Descrever o processo de implantação de Protocolo Assistencial para os Distúrbios da Deglutição em unidade hospitalar pública de alta densidade tecnológica no Distrito Federal. **Método:** Trata-se de um estudo descritivo do tipo Relato de Experiência com descrição do processo de implantação de Protocolo Assistencial para os Distúrbios da Deglutição em unidade hospitalar pública de alta densidade tecnológica no Distrito Federal. **Resultados:** A implantação do Protocolo consistiu três etapas de trabalho: Etapa 1 - busca na literatura sobre os procedimentos que caracterizariam as melhores práticas propedêuticas e terapêuticas; Etapa 2 - discussão com equipe multidisciplinar para ajustes necessários à execução da proposta de implantação de um Protocolo Assistencial para os Distúrbios da Deglutição; e Etapa 3 - proposta final do Protocolo Assistencial para os Distúrbios da Deglutição considerando as particularidades do serviço. **Conclusão:** A proposta final do Protocolo Assistencial para os Distúrbios da Deglutição (PADD) apresenta um método sistematizado pré-definido para acompanhar pacientes com alteração da deglutição de unidades de saúde de alta densidade tecnológica. O PADD propõe-se a favorecer a detecção precoce do distúrbio, a tomada de decisões terapêuticas uniformes, e a utilização de métodos propedêuticos e terapêuticos de baixo custo, assim como a auxiliar gestores no processo de avaliação da qualidade do serviço ofertado através da mensuração de indicadores.

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¹ Universidade de Brasília – UnB - Brasília (DF), Brazil.

² Hospital das Forças Armadas - Brasília (DF), Brazil.

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INTRODUCTION

Swallowing disorders (dysphagia) are a common symptom in hospitalized patients. This disorder is present in 63% of hospitalizations in Intensive Care Units, 53% of patients hospitalized because of stroke, 71% of victims of Cranioencephalic Trauma, and 75% of individuals with Dementia⁽¹⁻⁴⁾. In the United States alone, the annual estimate for dysphagia is of approximately one million new cases, generating increased hospitalization costs of up to US\$ 4,500 per patient⁽⁵⁾.

Hospitalization time is 40% longer in patients with dysphagia (4 days) compared with that of patients without dysphagia (2.4 days), and mortality rate in these patients is 13 fold that of regular patients⁽⁶⁾. Therapeutic advances have increased the life expectancy of patients with dysphagia, but there are few studies on the quality of the services offered, with most articles punctually addressing the results of groups of patients or diseases and the implantation of new propaedeutic protocols⁽⁷⁾.

The health sector must provide quality care, which should be measured by indicators of structure, process, and outcome⁽⁸⁾.

Structure indicators comprise inputs such as premises, material resources (equipment, tools, financial, instrumental, etc.), human resources, and management tools, including the organizational structure and the theoretical models applied in the administration of the institution. The exact contribution of these indicators to the quality of the care provided is difficult to quantify, but it can be analyzed in terms of trends. A more adequate structure increases the probability of providing better quality assistance.

Process indicators depict the care activities conducted with the patients; they are operational techniques.

Outcome indicators are demonstrations of the effects of the combination of environmental, structure and process factors occurred with patients after something is done (or not) for them, or the effects of technical and administrative operations between the areas and subareas of an institution⁽⁸⁾.

Indicators should be selected in order to reflect the clinical practice considering the work environment and the stipulated guidelines. They should also be able to characterize the effects of interventions when measured before and after treatment. Thus they respond to the increasing interest of evidence-based practice, and allow management and systematization of patient care⁽⁹⁾.

In this context, and aiming to improve the quality of the care provided to these patients, the objective of the present study was to describe the process of implantation of a Clinical Practice Protocol for Patients with Swallowing Disorders in a public hospital of high technological density in the Federal District of Brazil. The description aims to assist speech-language pathologists with identifying and managing the treatment of changes in swallowing dynamics and measuring the quality of the service offered.

EXPERIENCE REPORT

This study reports the work begun in August 2008, when the Clinical Practice Protocol for Patients with Swallowing Disorders (CPSD) was implemented in a public hospital with

high technological density in the Federal District of Brazil, and includes the tasks developed until December 2015. Implementation of the CPSD was conducted in three different points of health care: emergency room, intensive care unit, and ward. The service was created and operationalized in three stages:

Stage 1: Literature search on the procedures that characterize the best propaedeutic and therapeutic practices.

Stage 2: Discussion with the multidisciplinary team regarding the adjustments needed to implement the protocol proposal.

Stage 3: Within the service adjustments, final proposal of the CPSD and presentation of a descriptive flowchart and indicators to measure the quality of the service.

The study was approved by the Human Research Ethics Committee of the Hospital das Forças Armadas.

First stage

The first stage consisted of selection of relevant scientific articles on the procedures that would characterize the best propaedeutic and therapeutic practices for the implantation of the CPSD regardless of base pathology and age.

Two protocols/scales were selected for the propaedeutic practice: Dysphagia Risk Evaluation Protocol (DREP) and National Outcomes Measurement System (ASHA NOMS)^(10,11).

The DREP is a national bedside evaluation protocol validated in its construct to present classification of dysphagia and propaedeutics. It is measured as “pass or fail” for each of the observed items. The assessment procedures are composed of 11 items for the water swallow test and 12 items for the pureed food test. Patients were evaluated during the swallowing of 5 mL and 10 mL of water and pureed food offered in a spoon (the tests were conducted in triplicate for confirmation of results). Definition of the classification of dysphagia and therapeutic management by the protocol facilitates the training of the professionals involved in the execution of the work process, exerting control over the dimensions of the offered care.

The ASHA NOMS⁽¹¹⁾ scale was chosen because it has international validation and mainly because it includes solid consistency, which is not a part of the DREP⁽¹⁰⁾. It is worth mentioning, however, that the ASHA NOMS is a scale and not an assessment protocol. It is a multidimensional tool organized to determine the type of diet that a patient can ingest and the need for supervision that should be used in each case⁽¹¹⁾.

Both DREP⁽¹⁰⁾ and ASHA NOMS⁽¹¹⁾ refer to bedside swallowing evaluations, and are subjective. Complementary objective evaluations such as videofluoroscopy of swallowing (VFS) and videoendoscopic swallowing (VES) test were not discarded⁽¹²⁾. These are important tools in the diagnosis of swallowing disorders advocated especially in developed countries, but considering the context of the care unit in question and cost of these exams, and in order to define the best strategy to be used in the structuring of the service, complementary tests were chosen only in specific cases where subjective clinical evaluation was inconclusive. Thus, objective evaluation is not a routine procedure in addressing the swallowing disorders of patients hospitalized in the described institution, but an exception.

The literature describes an array of therapeutic practices, from low-cost indirect stimulation to high-cost, complex transcranial magnetic stimulation^(13,14). At the beginning of selection, it was necessary to consider the situational context of the care unit and direct the protocol to feasible choices.

Therefore, the therapeutic process should consider postural change, change in diet texture and/or consistency, and sensorimotor stimulation maneuvers and techniques.

Second stage

The second stage was characterized by interventions and actions with a multidisciplinary team (speech-language pathology, nutrition, nursing, psychology, physiotherapy, and medicine) to build the assistance structure provided to patients with dysphagia⁽¹³⁾.

The protocol recommends that the team of speech-language therapists is responsible for guiding the multidisciplinary team to select patients with risk factors and clinical signs of swallowing disorders, defining patient referral and the maximum time until speech-language assessment after requesting an opinion, and mainly for the diagnosis and rehabilitation of the dysphagic patient.

With regard to cooperation with the multidisciplinary team, the interventions and actions were accomplished through meetings, held in the prescription rooms of the hospital, in which the health care issues involved in the work process and the aspects directed to the proposed protocol were discussed. In these meetings, the risk factors and clinical signs characteristic of swallowing disorders were discussed with the

aim of preparing the team to identify patients eligible for the protocol and of gathering suggestions for improvements to the process. These actions allowed the implementation of praxis in the workplace, exchange of knowledge between the various professions involved in the field, and creation of strategies for solving problems arising from clinical practice.

Third stage

In this stage, the results of the literature search were presented and the interventions with the multidisciplinary team were accomplished. At that time, the CPSD (Figures 1 and 2) and a group of indicators to measure the quality of the service offered (Chart 1) were presented.

The protocol begins with the potential identification of the swallowing disorder, which is performed by the multiprofessional team (speech-language pathology, nursing, physiotherapy, nutrition, psychology, and medicine). This team is competent to suggest an evaluation of swallowing based on the patients' complaints or on subjective perception. These professionals were informed about the risk factors, signs, and consequences of oropharyngeal dysphagia. This allows quicker identification of patients at risk of aspiration, which is of paramount importance for the treatment of swallowing disorders. Some studies confirm the ability of the nursing staff to quickly identify individuals at risk of dysphagia, in addition to promptly refer them to speech-language therapy, at the time of admission, for prior evaluation before starting oral feeding⁽⁷⁾. Sensitivity of a swallowing assessment protocol administered by a nursing team can reach 74%. However, the literature also shows that this evaluation

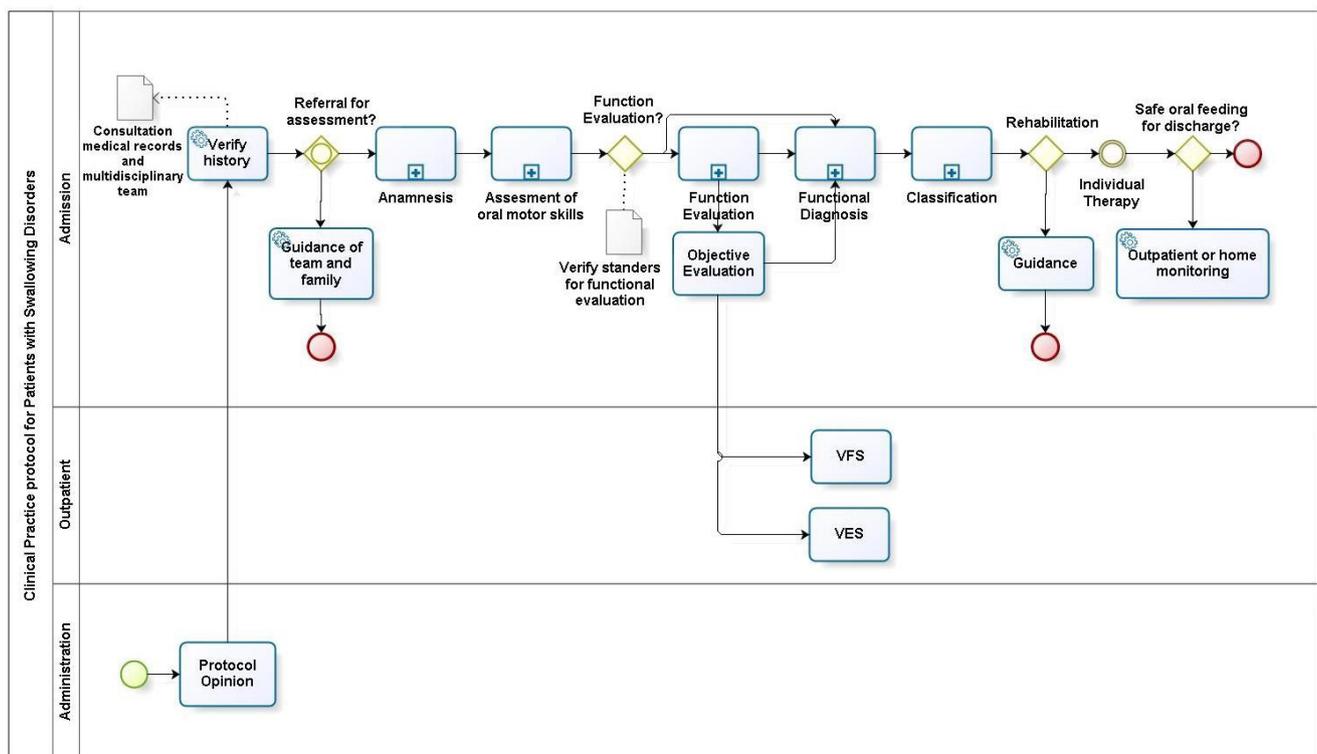


Figure 1. Diagram of the Clinical Practice Protocol for Patients with Swallowing Disorders - CPSD

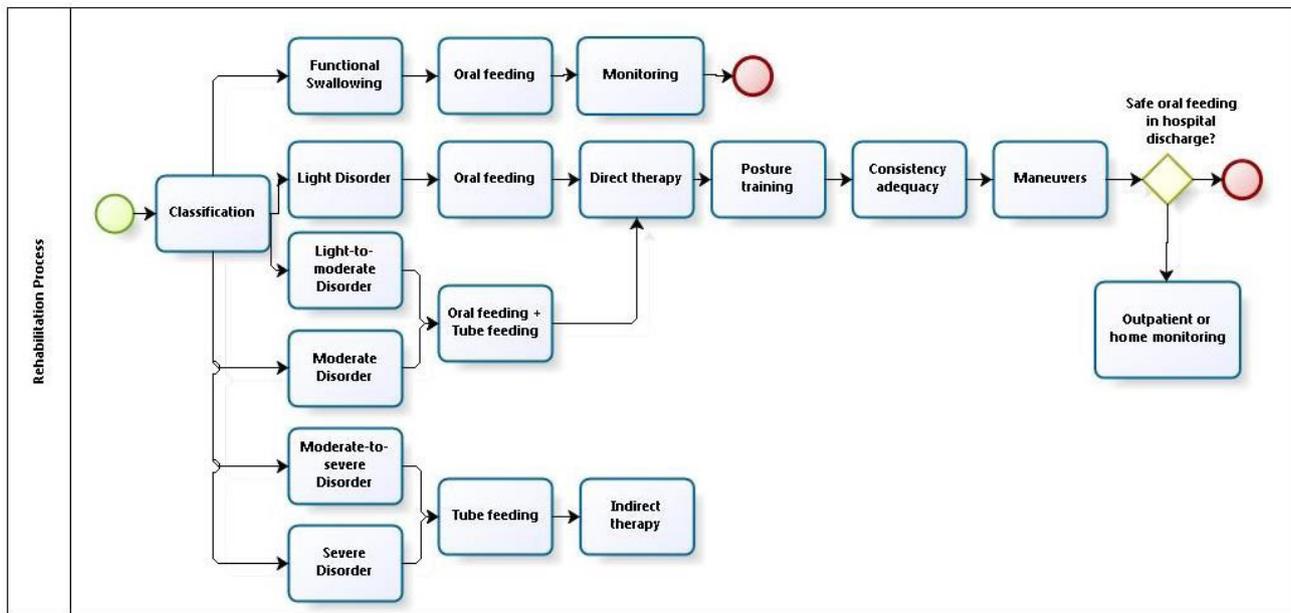


Figure 2. Diagram of the Process of Classification and Rehabilitation of Deglutition Disorders

Chart 1. Quality indicators

Structure	Professional qualification;
	Number of speech-language pathologists in the team;
	Number of hours per week for assessment and/or rehabilitation of swallowing;
Process	Quality of equipment.
	Swallowing evaluation index;
	Patient assistance index;
	Index of assisted patients;
	Severity rate;
	Swallowing rehabilitation demand index;
	Time until first swallowing assessment.
Results	Time until removal of feeding tube;
	Time until reintroduction of oral feeding;
	Time until decannulation.

alone would not be efficient to diagnose a swallowing disorder, therefore speech-language pathology assessment is extremely important before beginning oral feeding⁽¹⁵⁾.

Admission is rigidly bureaucratic. An opinion must be forwarded and filed at the Speech-Language Pathology Service with a priority classification. The classification is categorized into two items: priority number one - when speech-language assessment should be performed in 24 hours at the latest and referral will occur for patients with pathologies associated with acute onset of dysphagia (stroke, head injury, spinal cord injury, and surgical procedures associated with head and neck cancer) who present higher initial functional impairment severity level; and priority number two - when there is no need for such celerity and patients can be evaluated within 48 hours. The literature describes the importance of assessing the swallowing of patients within the first 48 hours after hospitalization^(16,17). All health

care points (emergency room, intensive care unit, and ward) are equally assisted.

Perhaps this formality of the opinion is a barrier to patient accessibility, but because resources are reduced, the speech-language pathologists are concentrated and advised to proceed formally. This is conceived by the competence of other professionals to understand the needs and demands of patients without generating questionable demands as to the legitimacy of their need.

In addition to the data contained in the opinion, the speech-language therapist should consult the staff involved in patient care to investigate clinical stability for the intervention and discuss possible pharmacological agents, neurological impairments, and future interventions that might impede successful rehabilitation.

The Bedside Swallowing Assessment (BSSA) was based on the Dysphagia Risk Evaluation Protocol (DREP)⁽¹¹⁾ and National Outcomes Measurement System (ASHA NOMS)⁽¹²⁾. The BSSA comprises the swallowing test with coconut water, swallowing test with pasty food (thickened coconut water), and swallowing test with solid food (biscuit), which aim to establish a classification of the degree of dysphagia and conducts from the protocol items. The DREP⁽¹¹⁾ suggests the use of pure water, but coconut water was chosen because of the pleasure it provides. For the evaluation of swallowing, patient should be seated or with the headboard lifted according to tolerability.

After evaluation, patients should be classified according to the DREP criteria⁽¹¹⁾ as follows:

- A= Normal or functional swallowing
- B= Mild oropharyngeal dysphagia
- C= Mild-to-moderate oropharyngeal dysphagia
- D= Moderate oropharyngeal dysphagia
- E= Moderate-to-severe oropharyngeal dysphagia
- F= Severe oropharyngeal dysphagia

Classification of the degree of dysphagia directs the conduct. Patients classified as A and B will receive oral feeding (OF), assisted by a caregiver, according to the selection of consistencies defined by the speech-language pathologist and will be monitored during hospitalization. Patients classified as C, D, and E will receive tube feeding (TF), oral feeding with restriction of consistency and volume, and speech-language therapy. Patients classified as E and F will receive exclusive TF and will undergo speech-language therapy.

Once a swallowing disorder has been confirmed, the speech-language pathologist will be primarily responsible for rehabilitation, which will be based on the data found during assessment. The cause and severity of the deficit will determine the type of therapy to be conducted for each individual. Rehabilitating dysphagia means working to achieve swallowing without risk of complications, regardless of the permanence of the disorder.

Patients classified as A and B will be monitored. This consists of a second speech-language visit after three days to confirm the clinical condition and clarify possible doubts. In addition, weekly consultations will be conducted during the entire hospitalization period to monitor the clinical condition, which may change requiring reevaluation of swallowing.

For patients classified between C and F, rehabilitation should initially consider postural change, which can influence the way food flows from the mouth to the stomach. Subsequently, texture and/or consistency of the diet are changed. Next, maneuvers are conducted⁽¹³⁾.

If patients do not benefit from the readiness of the techniques presented, direct or indirect therapy is performed.

Indirect treatment is provided for patients with contraindication of oral feeding due to their state of health, cognitive deficit, or for patients who are unable to maintain respiratory function or protection of the airways. This treatment ensures that the oropharynx maintains adequate sensory stimuli for OF in the future, avoiding the effects of disuse. The speech-language therapist uses sensory and motor stimulation techniques to stimulate tongue, lips, palate, and cheeks, including tactile-kinesthetic approaches, thermal application, pressure application, and a variety of oral muscle exercises to strengthen and increase range of motion.

Once patients are ready for OF, they will initiate direct therapy. This approach uses real foods with modifications in the texture, viscosity, and size of the bolus offered.

The objective of rehabilitation in the CPSD is hospital discharge with a safe feeding route, and not the pre-disease feeding status.

QUALITY INDICATORS

The work processes must be analyzed to verify the quality of the service offered: screening, assessment, and rehabilitation. This should be done through the analysis of indicators of structure, process, and outcome^(8,9).

The literature presents only one study that addressed, theoretically, the use of indicators for the function of swallowing⁽⁹⁾. It proposed a panel of indicators of processes and results of swallowing rehabilitation in hospital admission units. However, the literature does not present structure indicators, which induced

the construction of these indicators based on the concept by Donabadian⁽⁸⁾. Chart 1 shows the suggested indicators.

In a previous study, the researchers used quality indicators with a specific group and observed that the functional level of swallowing at hospital admission is an indicator of significant prognosis for good rehabilitation outcome. They also found that the level of swallowing impairment, the time until oral feeding, and the number of individual visits can be used as clinical indicators to predict rehabilitation outcomes⁽¹⁸⁾.

In addition to defining the flow of assistance described and the use of indicators to measure the quality of the service offered, specific measures were used to reduce the time of diagnosis and the consequences of dysphagia: training of the reception staff of the Speech-Language Pathology Service to communicate the team more quickly, autonomy of the multidisciplinary team to modify the diet offered and suggest tube feeding, and periodic meetings of the teams involved to discuss any failures and improvement strategies for all cases included in the protocol.

FINAL CONSIDERATIONS

The Clinical Practice Protocol for Patients with Swallowing Disorders (CPSD) is based on the scientific literature and corresponds to the context of a public hospital of high technological density in the Federal District of Brazil. The CPSD proposition is based on the following premises: 1) inexpensive application costs, 2) fostering of decision-making by the speech-language therapists directly involved in the care of dysphagic patients, 3) assisting managers with evaluating the quality of the service offered. The present study contributes in a structured and practical way for the care of patients with dysphagia while guiding speech-language pathology assistance, seeking acceptable levels of homogeneity and reproducibility of quantitative evaluation based on the empirical measurement of this clinical practice, consolidating its evidence-based performance. The measurement of a set of assessment parameters allows estimation of the needs of a given population in a given period, and analysis of the productivity parameters used to estimate the production capacity resources, equipment and services of health care, whether human, material, or physical.

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Author contributions

All the authors significantly contributed to the study and make public their responsibility for its content as follows: MSDB was the main researcher of the study; LDM was responsible for data analysis and discussion of the results; MCF was in charge of collection and classification of the data; LCC was the study adviser.