

# Protocol for audit of current Filipino practice in rehabilitation of stroke inpatients

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**Background:** Stroke is one of the leading medical conditions in the Philippines. Over 500,000 Filipinos suffer from stroke annually. Provision of evidence-based medical and rehabilitation management for stroke patients has been a challenge due to existing environmental, social, and local health system issues. Thus, existing western guidelines on stroke rehabilitation were contextualized to draft recommendations relevant to the local Philippine setting. Prior to fully implementing the guidelines, an audit of current practice needs to be undertaken, thus the purpose of this audit protocol.

**Methods:** A clinical audit of current practices in stroke rehabilitation in the Philippines will be undertaken. A consensus list of data items to be captured was identified by the audit team during a 2-day meeting in 2012. These items, including patient demographics, type of stroke, time to referral for rehabilitation management, length of hospital stay, and other relevant descriptors of stroke management were included as part of the audit. Hospitals in the Philippines will be recruited to take part in the audit activity. Recruitment will be via the registry of the Philippine Academy of Rehabilitation Medicine, where 90% of physiatrists (medical doctors specialized in rehabilitation medicine) are active members and are affiliated with various hospitals in the Philippines. Data collectors will be identified and trained in the audit process. A pilot audit will be conducted to test the feasibility of the audit protocol, and refinements to the protocol will be undertaken as necessary. The comprehensive audit process will take place for a period of 3 months. Data will be encoded using MS Excel<sup>®</sup>. Data will be reported as means and percentages as appropriate. Subgroup analysis will be undertaken to look into differences and variability of stroke patient descriptors and rehabilitation activities.

**Conclusion:** This audit study is an ambitious project, but given the “need” to conduct the audit to identify “gaps” in current practice, and the value it can bring to serve as a platform for implementation of evidence-based stroke management in the Philippines to achieve best patient and health outcomes, the audit team is more than ready to take up the challenge.

**Keywords:** audit, Filipino practice, stroke, rehabilitation, protocol

## Introduction

Stroke is one of the leading medical conditions in the Philippines. Over 500,000 Filipinos suffer from stroke annually. The reasons for this are thought to include genetics, diet, and/or lifestyle, coupled with lack of community awareness of and/or access to preventative health care (eg, blood pressure management).<sup>1</sup> Treating acute stroke (medical management and ongoing rehabilitation) incurs significant and ongoing costs to the health care system.<sup>2</sup> Moreover, suffering an acute stroke produces significant and often irreversible changes in the individual, in terms of resumption of usual function, self-esteem, and mental health, and full participation in family and community life.<sup>3,4</sup>

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Despite this, equitable access to and provision of evidence-based rehabilitation for stroke sufferers in the Philippines is a challenge, for a range of environmental, social, personal, organizational, educational, and systems reasons.<sup>5-7</sup> Not all Filipinos have access to specialist medical personnel for geographic and workforce availability reasons.<sup>8</sup> Thus, while decreasing stroke incidence should be a long-term aim, treating stroke consistently in the most evidence-based manner to produce the best health outcomes would have significant immediate advantages for the Philippines economy.<sup>5,8</sup>

We recently published the first stage of the Filipino stroke guideline project, which was the contextualization of Western clinical guidelines for stroke, and targeted to conditions in the Philippines.<sup>9</sup> Prior to this work, there was no nationally agreed guideline to guide Filipino best practice for stroke rehabilitation. However, before this guideline can be implemented, current practice needs to be established. There has never been a national survey of stroke rehabilitation practices in the Philippines, and therefore nothing concrete is known about current stroke rehabilitation practices, or the incidence of adverse events from stroke, such as swallowing difficulties or pressure ulcers. Without this information, any campaign to increase evidence-based practices may fail to target areas of most need.

The value of a comprehensive multicenter stroke audit to chart current practice has been reported by Luker et al.<sup>10,11</sup> Their work demonstrated that application of an audit tool that sought basic information on patient demographics, stroke descriptors, and rehabilitation care could identify gaps in recording of important information on current practice, as well as identify areas where records could be improved and used for future quality improvement activities. This audit protocol builds on the work of Luker et al.<sup>10,11</sup>

## Championing the project

Improving the quality of stroke rehabilitation in the Philippines and implementing evidence-based practice in the area has been championed by the Philippines Academy of Rehabilitation Medicine (PARM) for the last 2 years. Evidence-based practice is relatively new to the Philippines,<sup>6,9</sup> and thus developing and implementing clinical guidelines has been a vehicle for encouraging the body of Filipino psychiatrists to reflect on their practices, and improve them if indicated.

Rehabilitation occurs after the initial medical management of acute stroke, which is undertaken by neurologists, internists, emergency room physicians, and family medicine physicians. Appropriate referral of medically stable patients to psychiatrists is an important element in ensuring equity of access to best practice rehabilitation care. Thus, other medical

personnel are stakeholders in quality improvement programs for stroke rehabilitation.

An audit to establish current rehabilitation practices for stroke patients in the Philippines would also have the potential to capture “gaps” in current practice patient records, as was found by Luker et al.<sup>11</sup> These gaps could be addressed as part of the education provided to Filipino health care practitioners as part of the guidelines implementation program. For instance, capture of information on stroke severity (National Institutes of Health Stroke Scale) is recommended as part of best practice stroke management.<sup>3,10,11</sup> However, its frequency of use in Filipino settings is unknown. As stroke severity is a strongly evidence-based indicator of stroke rehabilitation outcomes,<sup>12</sup> standard collection of this information should be encouraged, as part of describing a comprehensive Filipino stroke rehabilitation profile.

The objective of this study was to establish current practice in stroke rehabilitation in the Philippines. Once current practice is established, the clinical practice stroke guidelines that have been contextualized to Filipino conditions can be implemented.<sup>9,13</sup>

## Operational definition of terms

1. Clinical audit: a quality improvement process that seeks to improve patient care and outcomes through systematic review of care against explicit criteria and implementation of change.
2. Quality improvement: combined and unceasing efforts of health care professionals, patients and their families, researchers, payers, planners and educators, to make the changes that will lead to better patient outcomes (health), better system performance (care), and better professional development (learning).
3. Implementation: process of translating research findings into clinical practice.
4. Clinical practice guidelines: systematically developed statements designed to help practitioners and patients decide on appropriate health care for specific conditions and/or circumstances.
5. Behavior change interventions: coordinated sets of activities designed to change specified behavior patterns. In general, these behavior patterns are measured in terms of the prevalence or incidence of particular behaviors in specified populations. Interventions are used to promote uptake and optimal use of effective clinical services and to promote healthy lifestyles.
6. Practice protocol: suggested course of management for a specific diagnosis or a condition. Practice protocols are generally preagreed approaches and as such make

rigid statements allowing for little or no variation in the process of care.

## Materials and methods

### Ethics

Ethical approval was obtained from the ethics review board of the participating hospitals (University of Santo Tomas Hospital, Philippine Orthopedic Center, Our Lady of Lourdes Hospital, Amang Rodriguez Hospital, Veterans Memorial Medical Center). Ethical approval is currently being obtained from other hospitals in other areas of the Philippines. A standard ethics application was written by the authors of this paper and circulated to all hospitals that indicated interest in participating. It is proposed to use the protocol required at the University of Santo Tomas Hospital, Manila, Philippines, this being the institution of the principal author. No changes were made at any participating site with regard to the methodology outlined in the standard ethics protocol, although site-by-site clarifications may be required depending on local processes regarding accessing patient records. Permission will also be sought from the medical director of the participating hospital. If required by the hospital, a consent form will be signed by the attending physician so that charts can be reviewed (see Supplementary materials [Figure S1]).

### Type of study

This is to be a clinical audit study using medical records review. The study will be done in hospitals with a rehabilitation unit.

### Working group

The research proposal was formulated by a volunteer multidisciplinary working group formed from eleven PARM members and affiliate members, reflecting key health care personnel engaged in stroke rehabilitation in the Philippines (seven physiatrists [rehabilitation doctors], three physical therapists, and two occupational therapists). An external international facilitator (KG) participated, providing educational input and an independent evaluation and critique of the working group's activities.

### Data items

As part of the group's deliberations, a consensus list of data items believed to provide a comprehensive profile of stroke sufferers who are referred for rehabilitation was developed.<sup>13</sup> Items in this list could also be used for later reaudit purposes after the Filipino stroke guidelines are implemented. The list of data items relating to current practices is presented in our previously published paper<sup>13</sup> and in Table 1. The data information sheet is in Supplementary materials (Figure S2).

**Table 1** Current practice audit items

Demographic data
• Name
• Age
• Sex
• Marital status and family supports
• Address
• Occupation
• Handedness
• Religion
Medical history
• Type of stroke
• Deficits present
○ Level of consciousness
○ Best gaze
○ Visual field cut
○ Facial paralysis
○ Movement arm
○ Movement leg
○ Sensory
○ Aphasia
○ Dysarthria
○ Apraxia
○ Neglect
• National Institutes of Health Stroke Severity Scale
• Date of stroke
• Involved hemiplegic side
• Comorbidities (diabetes mellitus, hypertension, cholesterol levels)
• Presence of medical complications
○ Hypertensive crisis
○ Restroke
○ Myocardial infarction
○ Renal complications
○ Pneumonia (nosocomial)
• Presence of rehabilitation complications
○ Aspiration pneumonia
○ Deep vein thrombosis
○ Skin breakdown
○ Contracture formation
○ Constipation
Date of rehabilitation referral
Early mobility
Number of treatment sessions during inpatient rehabilitation
Applied plan of care (clinical indicators)
• ROM exercises
○ PROM
○ AAROM
○ AROM
• Progressive resistive exercises (bed mobility and positioning, transfer training, sitting balance and tolerance, sit to stand, standing balance and tolerance, ambulation inside/bars, ambulation outside/bars with or without assistive device)
Increase in exercise intensity whilst in rehabilitation
Evidence of assessing for factors which need to be reported for increasing exercise intensity
• Severity of stroke
• Medically stable (criteria to be determined)

(Continued)

**Table 1** (Continued)

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- Mental status (MMSE)
- Level of function (FIM)/Barthel Index

Comprehensive discharge summary outlining rehabilitation outcomes

- Measures of outcome
  - Modified Rankin Scale data, Barthel Index, functional activity training (bed mobility, sitting, transfers, standing, gait, feeding training, pre-speech training, cognitive training)
  - Frequency and duration of treatment
- Date of medical discharge
- Evidence of plans for ongoing outpatient rehabilitation

Functional status on discharge

- Sitting
- Transfers
- Standing
- Ambulating (parallel bars, outside parallel bars, with assist, without assist, with assistive device, without assistive device)
- Feeding by NGT

**Special assessments**

1. Pressure sore assessment

Present at time of referral to rehabilitation?

IF YES

- Location of pressure ulcer
- Size of pressure sore
- Grade of pressure sore based on NPUAP

IF NO

- Is the patient at high risk for developing pressure sores based on the Braden Risk Assessment Scale (high, moderate, low risk)

IF PATIENT IS AT HIGH RISK, are any of the following measures being implemented:

- Pressure-relieving mattress
- Proper bed positioning
- Bed turning every 2 hours
- Proper transfer techniques
- Protective dressing and padding

Pressure sore present on discharge from rehabilitation?

2. Dysphagia

Bedside swallow screening

- Date
- Who performed the test
- Presence of dentures
- Results of test and recommendations
- NGT insertion
- Gastrostomy insertion

Date of referral to rehab

- Date seen by speech pathologist/occupational therapist
- Recommended measures
  - Barthel Index
  - Canadian Occupational Performance Measure
- Recommendations made

Instrumentation used and results

- Modified barium swallow studies
  - Dates of assessment
  - Results of each assessment

Discharge status

- With NGT
- With gastrostomy
- Died

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(Continued)

**Table 1** (Continued)

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Diet

- Diet during hospital stay
  - NPO
- Per oreum
  - Details
- Diet on discharge
  - Discharge instructions

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**Abbreviations:** ROM, range of movement; AAROM, active-assistive range of motion; AROM, active range of movement; PROM, passive range of movement; MMSE, Mini-Mental State Examination; FIM, Functional Independence Measure; NPUAP, National Pressure Ulcer Advisory Panel; NGT, nasogastric tube; NPO, nil per os (nil by mouth).

## Sample size

It was estimated using GPower that if each invited hospital participated, and 10% of each invited hospital's annual stroke admissions was audited, this would provide a sample of at least 40,000 patients, which would have (estimated) 90% power to describe typical Filipino stroke presentations, per hospital and nationally, as well as providing a robust description of the variability in rehabilitation practices and adverse events.

## Process of registering for the audit

The contact PARM members from interested hospitals that have provided ethics approval should contact the PARM office, and provide the following information:

- Name of institution
- Location (metropolitan, regional, remote)
- Number of beds
- Number of stroke patients presenting in the last 12 months
- Number of physiatrists, physical therapists, and occupational therapists working in the institution.

This information would be kept in a confidential file, which would only be accessed by the independent PARM research administrator whilst the data were being collected and analyzed. This information would be destroyed once the project was completed. Each participating hospital would be given a unique code regarding its identity. This code would link to a master file that recorded its location, total number of beds, number of stroke patients presenting in the last 12 months, and number of rehabilitation staff. The PARM office would give the hospital the sample size for its audit.

## Data collection processes

### Validity of the data collection tool

The data collection form was presented in a forum to rehabilitation doctors, physical therapists, and occupational therapists for

**Table 2** Auditing guideline: definitions of process indicators and auditing requirements

1. Swallow assessment (screen) within 24 hours of admission	
Definitions	Swallowed screening involves: <ul style="list-style-type: none"> <li>• A screening of swallowing undertaken by a trained health professional</li> <li>• “Within 24 hours” is the time from admission to hospital to documented time of screening</li> <li>• Swallowing is screened using a validated screening instrument</li> <li>• Documentation of outcome of screening, ie, a description of whether or not the patient failed the screening</li> <li>• Documentation of the action required following outcome of screening, ie, if failed screen, then referral to rehabilitation medicine and speech pathologist for formal assessment and remain “nil per orem”</li> </ul>
Data elements	Compliance requires documented evidence of a response to each of the elements: <ul style="list-style-type: none"> <li>• Validated instrument used</li> <li>• Outcome of screening recorded</li> <li>• Action required following outcome of screening recorded</li> <li>• Time of screening</li> </ul> <p>Patients with an impaired level of consciousness or designated as requiring palliative care are considered to have impaired swallowing and compliance with this indicator is deemed to have occurred if there is “documentation of the action required following the outcome of the assessment”</p>
Numerator	Number of stroke patients with documented evidence of swallow screen conducted within 24 hours of admission, during audit period
Denominator	All stroke patients admitted to hospital during the audit period
Exceptions	Not applicable for patients who had died in the ED or had been designated as “palliation only” while in ED
2. Referral to rehabilitation medicine when patient is medically stable	
Definitions	Documented referral to rehabilitation medicine when patient is medically stable Such assessment usually involves use of validated and reliable assessment tools
Data elements	Compliance requires documented evidence of: <ul style="list-style-type: none"> <li>• Assessment by attending physician</li> <li>• Documentation of outcome of assessment by attending physician</li> <li>• Date and time of referral</li> </ul>
Numerator	Number of stroke patients with referral to rehabilitation medicine
Denominator	Total number of stroke patients admitted to hospital during audit period
Exception	Not applicable for patients who had died or had been designated as “palliation only”, or were in ICU within the first 48 hours of admission
3. Increasing intensity of exercise according to tolerance of patient	
Definitions	Documented mobilization starting with supportive care with low intensity exercise such as range of motion exercise progressing to stroke mobilization rehabilitation, which is the period of rehabilitation when patients are given functional exercise related to walking and starts with the patient learning to sit up on the bed. This is done by a physical therapist
Data elements	Compliance requires documented evidence of: <ul style="list-style-type: none"> <li>• Patient’s assisted or unassisted mobilization</li> <li>• Time of first mobilization</li> <li>• Use of a validated and reliable assessment tool (Functional Independent Measure)</li> </ul>
Numerator	Number of stroke patients with documented progression of mobilization
Denominator	Total number of stroke patients admitted to hospital during audit period
Exceptions	Not applicable to patients who had a delayed admission (longer than 24 hours between stroke onset and hospital admission), those who had died or had been designated as “palliation only” in the first 24 hours, or were ordered to rest in bed by medical staff
4. Pressure care risk assessment followed by regular evaluation on prevention of pressure sores	
Definitions	Documented pressure care risk assessment using validated and reliable tool in evaluation of stroke patients Regular evaluation will be performed every 5 days
Data elements	Compliance requires documented evidence of a response to each of the elements: <ul style="list-style-type: none"> <li>• Validated instrument used (Braden Assessment tool)</li> <li>• Outcome of assessment recorded</li> <li>• Action required following outcome of assessment recorded</li> </ul>
Numerator	Number of patients with documented pressure care risk assessment done on a regular basis (once every 5 days)
Denominator	Total number of applicable stroke patients admitted to hospital during audit period
Exception	Not applicable for patients who had died or had been designated as “palliation only”
5. Providing appropriate pressure-relieving aids and strategies to prevent pressure sores	
Definitions	Documented provision of strategies to prevent pressure sores such as: pressure-relieving mattress, use of proper positioning, turning, and transferring techniques and judicious use of barrier sprays, lubricants, and protective dressings, and padding to avoid skin injury due to maceration, friction, or excessive pressure
Data elements	Compliance requires documented evidence of a response to each of the elements: <ul style="list-style-type: none"> <li>• Documented evidence of providing pressure relieving aids and strategies</li> </ul>

*(Continued)*

**Table 2** (Continued)

	<ul style="list-style-type: none"> <li>• Use of validated tool to assess presence of pressure sore (Bates Jensen Wound Assessment)</li> <li>• Grading of pressure sore if present based on the National Pressure Ulcer Advisory Panel</li> <li>• Outcome of assessment recorded</li> <li>• Action required following outcome of assessment recorded</li> </ul>
Numerator	Number of applicable stroke patients with documented provision of pressure relieving aids
Denominator	Total number of applicable stroke patients admitted to hospital during audit period with evidence of impaired function
Exception	Not applicable for patients who had died or had been designated as "palliation only"
6. Patient/carers provided with a discharge plan	
Definitions	Documented evidence that patient received a plan outlining care in the community after discharge. The specific care plan should address one or more of the following: <ul style="list-style-type: none"> <li>• Monitoring and managing symptoms and signs of illness including risk management if symptoms develop or become worse</li> <li>• Managing the impacts of illness on their lifestyle, emotions, and interpersonal relationships</li> <li>• Adherence to treatment regimes</li> <li>• Contact details for services to which the patient has been referred or follow-up appointments and community support contacts</li> </ul>
Data elements	Compliance with this indicator requires <ul style="list-style-type: none"> <li>• Documented evidence of a care plan having been provided to any patient who is going home</li> </ul>
Numerator	Number of applicable stroke patients with care plan provided to patient/family prior to hospital discharge during audit period
Denominator	Total number of applicable stroke patients discharged directly to home from the acute hospital during audit period
Exception	Not applicable for patients who had died or had been designated as "palliation only"

**Notes:** Copyright © 2014. Adapted from National Stroke Foundation. *Acute Stroke services Framework, 2008: a Framework to Enable the Delivery and Monitoring of Optimal Acute Stroke Care Across Australia*. Melbourne: National Stroke Foundation; 2008. Available from: <http://strokefoundation.com.au>. Accessed November 26, 2011.<sup>17</sup> These definitions will be used to determine whether or not process indicators have been met.

**Abbreviations:** ED, emergency department; ICU, intensive care unit.

face and content validation. This was undertaken to ensure that the data audit items to be retrieved from the medical records will answer the clinical audit objectives. Revisions were undertaken based on the validation procedure and sent back to the group for approval. Thus the data collection form/audit form to be used in the proposed audit has already been validated for its purpose.

### Data collectors

Two to three data collectors identified from each participating hospital will be required to retrieve the audit items from the medical records. They should have experience in data recording or management to ensure their capacity to reliably extract the information needed. An orientation to the clinical audit project and training for data collection will be conducted among the data collectors. A reliability procedure will also be undertaken by asking the data collectors to complete data extraction of five sample cases independently. The interrater reliability for percentage of agreement recommended by Dixon and Pearce<sup>14</sup> will be used to compute the reliability of the data collectors. This is done by dividing the number of bits of data for which there was complete agreement among the data collectors and the total number of bits of data (for example, 25 bits of data per case × five cases). Further training will be provided as needed based on the results of the reliability testing procedure.

### Data handling and management

A purpose-built MS Excel<sup>®</sup> file will be constructed, which restricts the type of data that can be entered into each column.

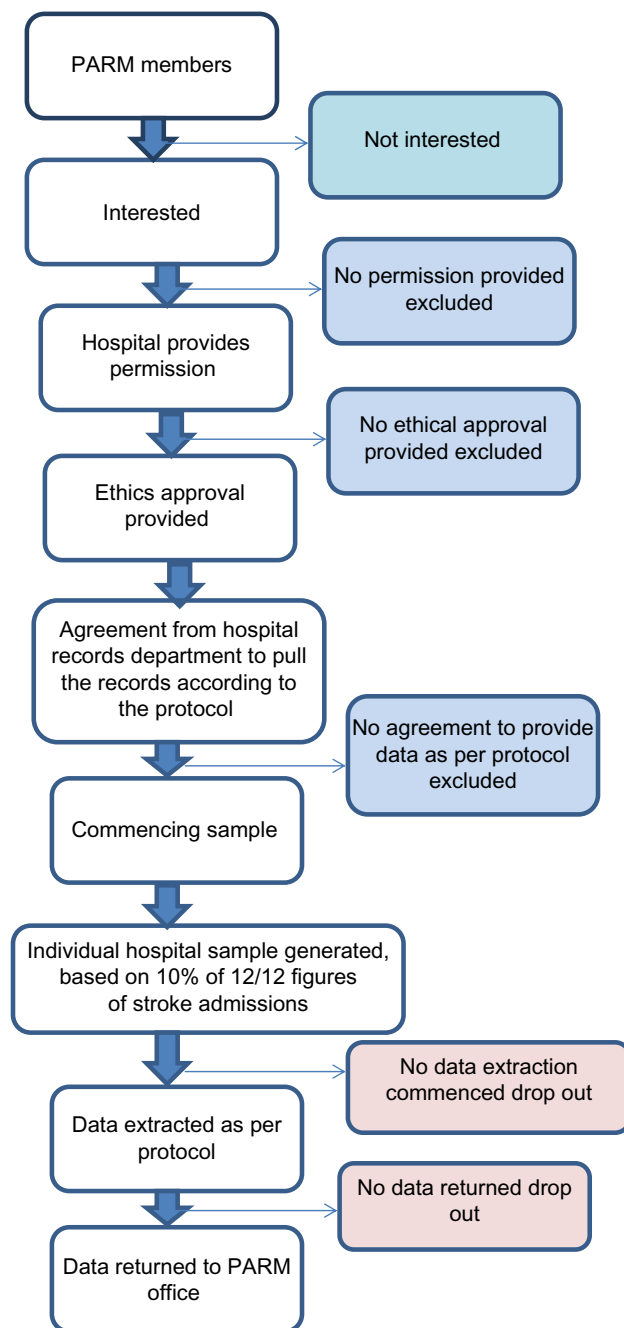
This will reduce data entry errors and ensure efficiency of data amalgamation per site. Completed data files will be sent to the PARM office, which will check the integrity of the file and ensure that only the unique coding of the hospital is provided, and that all patient data are deidentified.

### Data analysis

Analysis of the data will be undertaken by an independent analyst. The data will be reported per hospital and overall using means and percentages as appropriate, with relevant measures of variability. Subgroup analysis will be undertaken using the overall sample data to look at differences in stroke patient descriptors and rehabilitation activities, per general hospital location (eg, metropolitan, rural), and also to report on differences that relate to size (eg, number of beds, number of stroke admissions). The extent of missing data will also be reported for stroke and rehabilitation descriptors. This will inform future education programs that can target reasons for missing information and identify needs for further education (for instance on the use of the National Institutes of Health Stroke Scale). This approach is necessary to improve compliance prior to guideline implementation. Table 2 summarizes the operational definition of process indicators and auditing requirements that will be used to determine whether or not the process indicators have been met.

### Publication of audit data

The overall audit data will be reported in peer-reviewed journals. Individual sets of hospital data will be returned to the



**Figure 1** Flow chart of hospital recruitment process.  
**Abbreviation:** PARM, Philippine Academy of Rehabilitation Medicine.

hospital for use in quality improvement. Lessons learnt from the audit regarding stroke descriptors, rehabilitation practices, and common sources of missing data will be presented to PARM, the Philippines Hospital Association, and Phil Health. This is important because this information will provide the first known robust data collection on characteristics of Filipino stroke patients, rehabilitation practices, and the need for further education. Subsequent guideline roll out should be underpinned by appropriate training in recording accurate patient data.

## Discussion

This protocol outlines the way that the first comprehensive profile of Filipino stroke rehabilitation practices will be collated. This information is essential not only to describe the previously unknown variability of Filipino stroke patient descriptors, but also to highlight areas of practice that could be improved by the implementation of evidence into clinical decision-making and practices.<sup>13</sup>

It is an ambitious project because it will be largely undertaken using goodwill, from the champions of change and PARM members. However, the PARM group has recognized the need to improve stroke rehabilitation practices nationwide, to reduce unnecessary costs, decrease variability in treatment decisions, and improve health outcomes. This audit is therefore an essential next step for PARM in implementing evidence-based practice in the Philippines regarding stroke rehabilitation.

Audits in the Western world have identified opportunities for improved care by acting on “current practice” information.<sup>15,16</sup> Quality improvement activities have gained in popularity in conjunction with evidence-based practice initiatives, as audits of current practice provide a wealth of information on what could be improved.<sup>15,16</sup> Luker et al highlighted a range of derived information on quality of stroke care that could be obtained from a simple audit of quality care indicators from 300 consecutive patients in three Australian hospitals.<sup>10,11</sup>

The proposed audit could be of value on many levels. On a basic level, it will provide PARM with a comprehensive association initiative to collect data on what its members do and what the health and process outcomes are. It will also identify data items that are variably collected, eg, information on stroke severity, and will provide opportunities to consider how rehabilitation practices fit within the overall continuum of stroke care provided in institutions around the Philippines (eg, the number of stroke patients who are referred for rehabilitation). On a more advanced level, it will provide information regarding the importance of data items to describe stroke care, and will provide a platform for comparison of care, once the Filipino-contextualized guidelines are implemented in 2014. This audit will also highlight the need for training regarding evidence-based practice, which is the core component of guideline recommendation and implementation.<sup>15,16</sup> Evidence-based practice is known to result in effective patient outcomes and an efficient health care system.<sup>15,16</sup> In a resource-limited country such as the Philippines, a greater need for treatment and management known to result in effective outcomes

(such as in the case of stroke rehabilitation) is emphasized to ensure that no money or resource is put to waste.

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## Disclosure

The authors report no conflicts of interest in this work.

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## Supplementary material

### PARTICIPANT INFORMATION SHEET

#### 1. Study information:

Protocol title: Audit of current Filipino practice in stroke in-patient rehabilitation

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#### 2. Purpose of the research study

You are invited to participate in this study. Please take time to read through the information provided in this sheet. The study will be thoroughly explained to you and you will be given the chance to ask any related questions. Once you have decided to participate in the study, please sign the provided informed consent form. You will be given a copy of this consent form to take home with you.

The Philippine Academy of Rehabilitation Medicine has recently published a contextualized stroke rehabilitation clinical practice guidelines with the objective of improving quality care for stroke patients. For the guidelines to be effectively implemented, strategies should be formulated based on multiple sources of data which include a description of current practice, against which changes could be compared.

This study aims to describe the current practice of in patient stroke rehabilitation in terms of the following: 1. Referral to rehabilitation unit; 2. Increasing the intensity of rehabilitation; 3. Utilization of swallow screen prior to removal of nasogastric tube; 4. Pressure care risk assessment; 5. Use of appropriate pressure relieving aids and strategies; and 6. Referral to an out patient stroke rehabilitation after discharge.

#### 3. What procedures will be followed in this study?

If you agree to take part in this study:

- a. The charts of stroke patients under your care for the past three months (January 2012–December 2012) will be reviewed.
- b. The following items will be retrieved from the chart:
  1. Hospital ID
  2. Gender
  3. Age
  4. Date of admission
  5. Kind of stroke
  6. Affected side of brain
  7. Acute stroke unit available
  8. Attending physician
  9. Presence of operative procedure. What kind of operative procedure?
  10. Date of discharge
  11. Previous admission for this stroke? Where?
  12. Presence of adverse events during hospital stay? What kind?
  13. Date when patient is medically stable
  14. Date of referral to rehabilitation
  15. Evidence of increasing intensity of rehabilitation
  16. Evidence of performing swallow screen preceded removal of NG tube
  17. Risk assessment done for pressure sore development
  18. Evidence for providing pressure aids
  19. Referral to outpatient department.

## 4. Possible risks and side effects

There are no known possible risks and side effects of the study.

## 5. Possible benefits from participating in the study

Your participation in this study will help understand the current stroke rehabilitation practices in the Philippines and will be able to guide the research team in formulating effective implementation strategies of the clinical practice guidelines to improve patient quality care.

If clinically important findings are noted, you will be informed so that further action may be taken if necessary.

## 6. Costs and payments if participating in the study

There will be no costs nor payment if you participate in the study.

## 7. Voluntary participation

Your participation in the study is voluntary. If you decide not to participate because it would incriminate your patients, you may stop participating any time.

## 8. Confidentiality of study and medical records

Information collected for this study will be kept confidential. Your records, to the extent of the applicable laws and regulations, will not be made publicly available.

However, the ethics review board will be granted direct access to your original medical records to check study procedures and data, without making any of your information public. By signing the informed consent form attached, you are authorizing such access to your study and medical records.

Data collected and entered are the property of the University of Santo Tomas Hospital. In the event of any publication regarding this study, your identity will remain confidential.

## 7. Whom to contact if you have questions

If you have questions about this research study, you may contact the investigators, Consuelo G. Suarez, PhD, MD, 09178052161 or Janine Margarita Dizon, PhD 0908-8687110

If you want an independent opinion of your rights as a research subject you may contact the institutional review board of the University of Santo Tomas Hospital.

Hospital  
CONSENT FORM

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Protocol title:

Audit of current Filipino practice in stroke in-patient rehabilitation

Principal investigators and contact details:

Consuelo G Suarez, MD, PhD      Contact No: 09178052161

Janine Margarita Dizon, PhD      Contact No: 0908-8687110

I voluntarily consent to take part in this study. This study has been explained to me in a language that I understand. The purpose and procedures of this study have been fully discussed and understood by me. I have been given enough time to ask any questions that I have about the study, and all my questions have been answered.

\_\_\_\_\_  
Name of participant/  
Legal representative

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

Witness statement

I, the undersigned, certify to the best of my knowledge that the participant signing this informed consent form had the study fully explained in a language understood by him/her and clearly understands the nature, risks and benefits of his/her participation in the study.

\_\_\_\_\_  
Name of witness

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

## Investigator statement

I, the undersigned, certify that I explained the study to the participant. To the best of my knowledge the participant signing this informed consent form clearly understands the nature, risks and benefits of his/her participation in the study.

\_\_\_\_\_  
Name of Investigator/

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

person administering consent

**Figure S1** Consent form for attending physician.

**Abbreviation:** NG, nasogastric.

Hospital \_\_\_\_\_

Hospital ID \_\_\_\_\_

Location: \_\_\_\_\_

PARM's Stroke Inpatient Rehabilitation Guideline

**Data information sheet**

Patient ID: \_\_\_\_\_ Gender: ( ) Male ( ) Female

Age: \_\_\_\_\_ Birth date \_\_\_\_\_

Date of admission \_\_\_\_\_ Date of discharge \_\_\_\_\_

**A. Stroke Profile:**

1. Kind of stroke ( ) infarct ( ) hemorrhagic ( ) AV malformation  
( ) subarachnoid bleed ( ) intracerebral aneurysm
2. Affected side of the brain ( ) Left ( ) Right ( ) Both
3. Acute stroke unit available ( ) Yes ( ) No
4. Attending physician ( ) Cardiologist ( ) Neurologist ( ) Surgeon  
( ) Internist ( ) Family Physician
5. Presence of operative procedure ( ) Yes ( ) No
  - a. What kind of operative procedure \_\_\_\_\_
6. Previous stroke ( ) Yes ( ) No
  - a. How many times ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5
  - b. Previous admission (hospital) \_\_\_\_\_
7. Presence of adverse events during hospital stay ( ) Yes ( ) No  
What kind? \_\_\_\_\_
8. Date when patient is medically stable ( ) indicated ( ) not indicated  
If indicated, what is the date \_\_\_\_\_

**B. Rehabilitation**

1. Referred to rehabilitation: ( ) Yes ( ) No
  - a. Date of referral \_\_\_\_\_
2. Did the patient have continuous rehabilitation sessions? ( ) Yes ( ) No
  - a. If no, give the reason \_\_\_\_\_
3. Evidence of increasing intensity of rehabilitation ( ) Yes ( ) No
  - a. Assessment of tolerance ( ) Yes ( ) No
  - b. Relevant outcome measures ( ) Yes ( ) No
    - i. Please indicate \_\_\_\_\_
4. Presence of NG tube ( ) Yes ( ) No
  - a. Swallow screen done before removal of NG tube ( ) Yes ( ) No

5. Risk assessment done for pressure sore development ( ) Yes ( ) No
  - a. Regular evaluation done ( ) Yes ( ) No
  - b. Outcome measures used: \_\_\_\_\_
6. Evidence for providing pressure aids ( ) Yes ( ) No
  - a. What pressure aid was given \_\_\_\_\_
7. Rankin scale used at the time of admission/referral ( ) Yes ( ) No  
Rankin scale used at the time of discharge ( ) Yes ( ) No
8. NIHSS grading used at the time of admission ( ) Yes ( ) No  
NIHSS grading used for daily monitoring ( ) Yes ( ) No  
NIHSS grading used at the time of discharge ( ) Yes ( ) No
9. Referral to out patient department ( ) Yes ( ) No
  - a. Where to \_\_\_\_\_

---

 Evaluator

---

 Signature

---

 Date

**Figure S2** Data information sheet.

**Abbreviations:** AV, arteriovenous; NG, nasogastric; NIHSS, National Institutes of Health Stroke Scale; PARM, Philippines Academy of Rehabilitation Medicine.

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