Development of Clinical Practice Guideline (CPG) for Physical Restraint

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Background and rationale

Clinical practice guideline (CPG) is a good systematical tool to assist practitioners to make decisions about the specific clinical circumstances.[1] In general, the aim of a CPG is to improve patients' outcomes. Straightforwardly, CPG is a tool aiding the art of decision-making.[2]

Normally, each evidence-based CPG took up to two to three years to develop. The document needs to be revised every two to three years, to develop the good guideline guaranteed best practice.[2] Furthermore, the developers should be aware of the type of their CPG between national CPG and local CPG, because there are some differences between nationally and locally developed guidelines. The local CPG is more specific to practice in a local setting while the national CPG is more suitable for the national healthcare service.[2] At this point; Siriraj CPG for physical restraint is a local guideline appropriate for the setting of Siriraj Hospital, developed by Siriraj's multidisciplinary team.

The need to develop the Siriraj physical restraint CPG is because there is significant number of usages of physical restraints in Siriraj Hospital. From a pilot survey, physical restraints were used in approximately 10% of all inpatient admissions at Siriraj Hospital. However, there were some reports of complications from physical restraints, e.g. wound; fall, fracture, psychological injury, and even death were reported to our risk management unit. Medical staffs usually use physical restraint to manage patients' destructive and violent behaviors that endanger the immediate physical safety of the patient, staff members, or others. Therefore, we hypothesize that our CPG for physical restraint could prevent or reduce complications from physical restraint.

Literature review

Restraint has not been well studied. There have also very limited studies in physical restraint in Thailand. Binder RL, et al studied by survey twenty psychiatric medical directors, conducted by the Association for Emergency Psychiatry, and found that fourteen out of twenty answers reported that they used physical restraint and chemical restraint before doing medical procedures.[3]

Many studies found that the elderly was the highest prevalent group getting physical restraint; the risk was three times higher than the general population.[4] Lavoie FW, found that the high risk group of getting physical restraint was the patients older than 75 years old.[5] The Health Care Financing Authority reported that the patient were restrained for different indications including their violent and disruptive behavior, agitation, being suicidal, being homicidal, alcohol or drug intoxication, confusion, catatonia, or dementia.[6]

Pudiak CM, et al reported complications from physical restraint including incontinence, aspirated pneumonia, circulatory obstruction, cardiac stress, skin breakdown, decreased appetite, dehydration, and accidental death.[7] Deaths from restraint were also reported in many studies.[8,9] Leslie reported one prospective trial of complications; the study reported a 5.4% rate of complications; although there were no major injuries or mortality. The complications were getting out of restraints, injuring others, vomiting, injuring self, increased agitation, and hostility. The rate of complications might relate to the number and type of restraints, the age of the patient, the application process, and the underlying medical condition.[3] The indications for physical restraint were also not well studied.

Neufeld RR, et al found a decrease of serious injuries with a reduction of restraint usage.[10] In the year 2000, the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) developed standard criteria for physical restraint; they suggested that physical restraint should be done only in the case of failure from other alternative treatment.[13]

Vance's study found no significant difference of physical restraint incidence between before and after CPG implementation, although CPG for physical restraint decreased 36% of inappropriate physical restraint when compared between before and after the implementation of CPG.[14] Some studies suggested that every hospital should have staff training in physical restraint protocol, and promote the important points of the

physical restraint guideline to their members.[15]

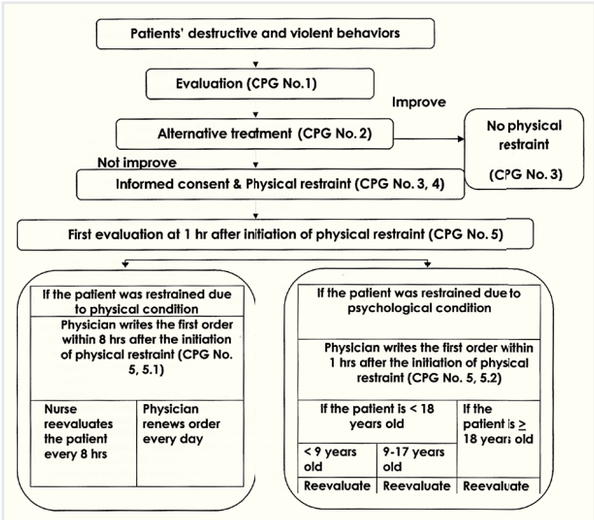
Method

Our multidisciplinary team developed the physical restraint manual and CPG for physical restraint. We tried to find a local CPG for physical restraint in a Thai version, but it was not available. After that, our team did a literature review regarding physical restraint from our available resources and combined with our multidisciplinary team's opinions to develop the draft of our manual and CPG. Therefore, our physical restraint CPG was primarily based on both literature review and the consensus of Siriraj's experts. Our multidisciplinary team composed of physicians and nurses from the Departments of Medicine, Surgery, Pediatric, Psychiatry, Forensic, Dentistry and Risk management unit.

After the multidisciplinary team had developed the restraint manual and CPG for physical restraint, we did a pilot study of the feasibility of using the CPG. We did the pilot study by implementing the CPG in thirteen pilot wards. The primary aim of our pilot study was to develop a user friendly, official version of the CPG for physical restraint in Siriraj Hospital. We collected the users' satisfaction by questionnaire survey from the pilot wards after the first version of CPG was implemented. We also had open discussions with the users to make our CPG become more user-friendly, feasible and practicable. We emphasized the importance of mutual agreement from all users in our physical restraint CPG recommendations. When the first debate was done, our team analyzed the data to improve the second version of the physical restraint CPG according to the mutual agreement from the pilot users. Approximately, three months later, we did the second survey study and collected the users' satisfaction again. We then compared the first data and the second data to develop the user friendly official guideline.

There was also a need to have an official process to inform our CPG before the real implementation of the official CPG. Politically, our team made contacts with almost all of the hospital units by enthusiastic help of the Risk Management Unit. Finally, we informed and got the consensus from the hospital directors and nursing directors, before implementing the official CPG.

Diagram 1. The following diagram shows the flow chart of our physical restraint CPG.



We received the Best Implementation of the Year 2008 award for CPG development from Routine to Research unit. Moreover, it was our great honor that JSPN gave us the opportunity and scholarship to present our work in an international restraint session in the 104th annual meeting of JSPN in Tokyo, Japan in the year 2008.

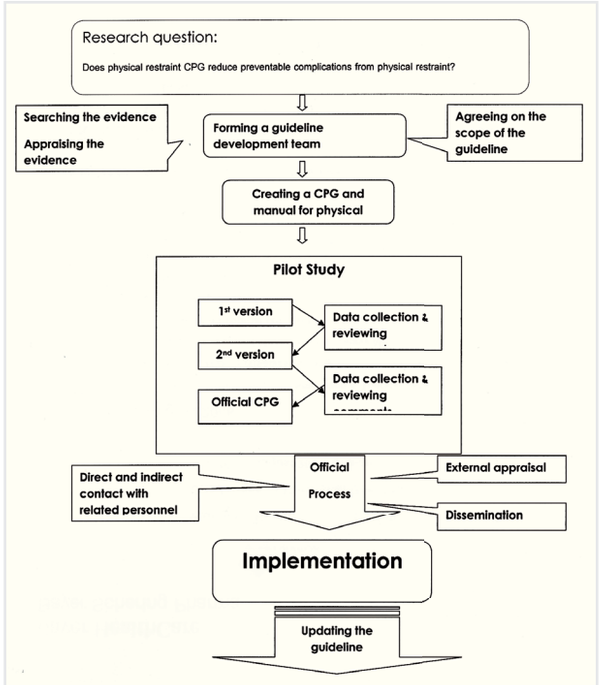
Ongoing process

Clinical improvement in patient care using the physical restraint CPG will be achieved only if the recommendations in the guideline are justified, and well accepted by users, which is the most important factor considered by our team. We realized that all healthcare professionals work in slightly different ways, therefore we expected to find some reluctances in using our CPG. To promote acceptance among the users, we got almost every discipline in the physical restraint CPG development, especially nurses who were the direct users of the CPG. We plan to integrate the users' feedback and recommendation to find the common ground which means that the CPG will be more likely to be sustainably implemented. We had finished training the first year residents how to use the CPG, this was to get the participation and feedback the hospital physicians. Furthermore, we also plan to inform all of the first-year residents every year in the future. The next challenging opportunity is to inform and train all 3,000 nurses working in Siriraj Hospital campus. Our team had a consensus to develop the electronic learning (e-learning) to train all the nurses and its developmental process is going on.

The clinical practice guideline for physical restraint e-learning system

The E-Learning for Physical Restraint, by the Department of Psychiatry, Faculty of Medicine Siriraj Hospital, is an on-line material for self-study of Clinical

Diagram 2. The following diagram shows the steps involving in producing CPG for physical restraint.



Practice Guideline (CPG) for Physical Restraint. The system supports at least 3,000 users concurrently. The CPG training used to use more than ten staff teaching the restraint course, whereas using this e-learning course will save the budget and resources of the hospital.

The system is a Flash animation which can run on major platforms, including Windows, Linux and Mac OS. It can run on many web browsers, including Internet Explorer, Firefox, and Safari. It works with major database systems such as Oracle and Microsoft SQL Server, in other words, this system is ready to install to the current e-learning system of the Faculty of Medicine Siriraj Hospital.

Students need only a computer connecting to the faculty's e-learning website, and then enter the student number with password. After they have successfully logged into the system, students study the lessons of the on-line course; each lesson has an exercise at the end. They should complete all lessons to pass the on-line course. The administrator of the system can also log into the system to check the score of each student, and can send an e-mail to notify student's progress of the on-line course.

We plan to create an Internet Message Board, so every CPG's user can give feedback on using e-learning for physical restraint to make sure the CPG is still user-friendly and covers the important points.

Future direction

Future research

After the official implementation of the physical restraint CPG, our team plan to study the pilot outcome of the Physical Restraint CPG in delirium patients. The goals of our study will include:

a. To study the indication of restraint in delirium patients.
b. To study the frequency of the restraint in delirium patients.
c. To study the evaluation before restraint.
d. To study the methods of restraint.
e. To study the duration, risk factors, complications and outcomes in restrained patients.
f. To study the indication for removing restraint.

We propose to compare these variables one year before and after the implementation of our CPG for physical restraint.

Hopefully, we expect to have a complete and well-accepted version of the physical restraint CPG. Moreover, the official version of our CPG will be officially implemented in every unit in Siriraj Hospital. The multidisciplinary team at Siriraj Hospital hoped that development of the first physical restraint CPG would improve the standard quality of care of the patients in Siriraj Hospital, and hopefully for patients in Thailand as a whole.

REFERENCES

1. Field MJ, Lohr KN, eds. Clinical practice guidelines: directions for a new program. Institute of Medicine. Washington, DC: National Academy Press; 1990.
2. Richard B, Monica L, Maria A, Kate A, Roderick MF, Terence S. How to write a guideline from start to finish: a hand book for healthcare professionals. London: Churchill Livingstone; 2008.
3. Binder RL, McNiel DE. Emergency psychiatry: contemporary practices in managing acutely violent patients in 20 psychiatric emergency rooms. Psychiatr Serv 1999;50:1553-4.
4. Zun LS. Evidence-based treatment of psychiatric patient. J Emerg Med 2005;28:277-83.
5. Lavoie FW, Carter GL, Danzl DF, Berg RL. Emergency department violence in United States teaching hospitals. Ann Emerg Med 1988;17: 1227-33.
6. Health Care Financing Authority. HFCA's National Restraint Reduction Newsletter 2000;8(1). Available from:http://www.hcfa.gov/pubforms/rrsum99.htm. Accessed June 29, 2000.
7. Pudiak CM, Bozarth MA. Cocaine fatalities increased by restraint stress. Life Sci 1994;55:PL379-82.
8. Robbins LJ, Boyko E, Lane J, Cooper D, Jahnigen DW. Binding the elderly: a prospective study of the use of mechanical restraints in an acute care hospital. J Am Geriatr Soc 1987;35:290-6.
9. Tinetti ME, Liu WL, Ginter SF. Mechanical restraint use and fall-related injuries among residents of skilled nursing facilities. Ann Intern Med 1992;116:369-74.
10. Neufeld RR, Libow LS, Foley WJ, Dunbar JM, Cohen C, Breuer B. Restraint reduction reduces serious injuries among nursing home residents. J Am Geriatr Soc 1999;47:1202-7.
11. Health Care Financing Authority. HFCA's National Restraint Reduction Newsletter 2000; 8(1). Available from:http://www.hcfa.gov/pubforms/rrsum99.htm. Accessed June 29, 2000.
12. Health Care Financing Authority. Restraint and the fear of injury. HCFA's National Restraint Reduction Newsletter 1996; 4(3). Available from: http://www.hcfa.gov/pubforms/restaint/rr0896.htm. Accessed June 29, 2000.
13. Joint Commission on Accreditation of Healthcare Organization (JCAHO) 2002. Comprehensive Accreditation Manual for Hospital: The Official Handbook. Oakbrook Terrace, Illinois, 2001.
14. Vance DL. Effect of a Treatment Interference Protocol on Clinical Decision Making for Restraint Use in the Intensive Case Unit A Pilot Study. AACN Clinical Issues, 2003:82-91.
15. Winston PA, Morelli P, Bramble J, Friday A, Sanders JB. Improving patient care through implementation of nurse-driven restraint protocols. J Nurs Care Qual 1999;13:32-46.