

A practical framework towards optimal cancer pain management in resource-limited settings

Authors: **C**ancer Pain managEment in Resource-limited settings (**CAPER**) Working Group: Sam H Ahmedzai,¹ Jocelyn Bautista,² Kamel Bouzid,³ Rachel Gibson,⁴ Yuddi Gumara,⁵ Azza Adel Ibrahim Hassan,⁶ Seiji Hattori,⁷ Dorothy Keefe,⁸ Durval Campos Kraychete,⁹ Dae Ho Lee,¹⁰ Kazuo Tamura,¹¹ Jie Jun Wang¹²

Affiliation: ¹The Medical School, University of Sheffield, Sheffield, United Kingdom; ²Benavides Cancer Institute, University of Santo Tomas Hospital, Manila, Philippines; ³Medical Oncology Department, Pierre & Marie Curie Center, Algiers, Algeria; ⁴Division of Health Sciences, University of South Australia, Adelaide, Australia; ⁵National Cancer Center Dharmas Hospital, Jakarta, Indonesia; ⁶Supportive & Palliative Care Section, Medical Oncology Department, National Center for Cancer Care and Research, Hamad Medical Corporation, Doha, Qatar; ⁷Department of Cancer Pain Management, The Cancer Institute Hospital of JFCR, Tokyo, Japan; ⁸Department of Medicine, Faculty of Health Sciences, University of Adelaide, Adelaide, Australia; ⁹College of Medicine, Federal University of Bahia, Salvador, Bahia, Brazil; ¹⁰Department of Oncology, University of Ulsan College of Medicine, Asan Medical Center, Seoul, Republic of Korea; ¹¹Division of Oncology, Hematology, and Infectious Diseases, Department of Medicine, Fukuoka University School of Medicine, Fukuoka, Japan; ¹²Department of Oncology, Changzheng Hospital, Shanghai, PR China

ABSTRACT

Introduction: Cancer pain management (CPM) in resource-limited settings (R-LS) remains inadequate, owing to barriers in opioid availability and accessibility, lack of education among healthcare providers (HCPs), as well as fears and lack of awareness among patients and their caregivers. There remains a significant gap between existing international evidence-based guidelines and current practices in these settings. **Objective:** To develop a framework towards improved pain management for cancer patients, by building on existing work in the field and providing a resource-based algorithm which would enable high quality patient care with optimal use of available resources. **Methods:** CAPER, comprising members from 10 countries, undertook a pragmatic review of the literature from 2007 to date, then collaborated to develop a resource-based management algorithm and educational strategies to close the gaps in CPM (**Figure 1**). **Results:** We developed an algorithm that recognizes existing guidelines as the gold standard, and have applied a hierarchy of resource-based constraints to tailor the optimum analgesic regimen sensitive to the needs of patients and local availability of analgesics. The utility of this algorithm would be demonstrated during the MASCC meeting by the use of real-life case studies contributed by CAPER members. We also formulated an associated educational toolkit, and framework for policy and advocacy in improving pain medications access in resource-limited settings. **Conclusions:** We have taken the crucial first steps in our efforts to bridge the gap in CPM, by providing an implementation framework for optimizing cancer pain management where access to guideline-recommended drugs is limited.

INTRODUCTION

- At least one third of patients with cancer pain are not receiving analgesia proportional to their pain intensity.¹ Furthermore, 75% of the world population, predominantly in lower- and middle-income countries, have limited access to adequate pain relief.²
- While existing clinical guidelines provide best practices in CPM, they often presume optimal resource availability and are thus challenging to adopt in R-LS.³ They also provide little information on how to translate recommendations in clinical practice.⁴
- In addition, the lack of education of HCPs, policymakers and patients manifests as misconceptions (including opiophobia), improper use of analgesics, and restrictive policies governing availability and accessibility of analgesics.⁵⁻⁸
- The **C**ancer Pain managEment in **R**esource-limited settings (**CAPER**) working group proposes a two-step strategy to overcome these challenges, including
 - practical evidence-based algorithms for HCPs to optimize CPM amidst limited availability of analgesics, and
 - a framework to support effective implementation of these algorithms, and an advocacy plan to influence policymakers to improve availability and accessibility of opioids.

METHODS

- The CAPER working group, including eight members of the Steering Committee and four Advisory members, is comprised of a multidisciplinary consortium of oncologists, pain specialists, and palliative care experts from Algeria, Australia, Brazil, China, Indonesia, Japan, the Philippines, Qatar, South Korea, and the United Kingdom.
- Following pragmatic reviews of the literature and regional evidence, and discussions on the direction of the initiative, the Steering Committee members convened at a meeting in early February 2017, in Shanghai, China (**Figure 1**). Post-meeting, the working group amalgamated evidence-based recommendations and clinical experiences into resource-based CPM algorithms and further developed the framework for education and advocacy.

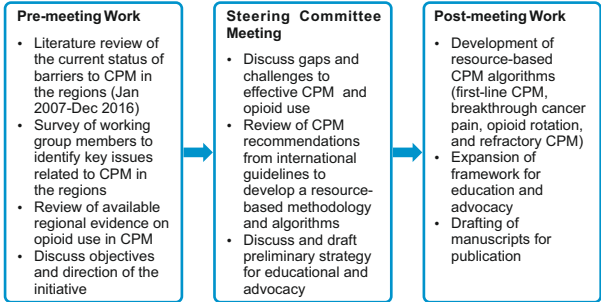


Figure 1. Methodology and workflow undertaken by the CAPER working group. Abbreviation: CPM, cancer pain management

RESULTS

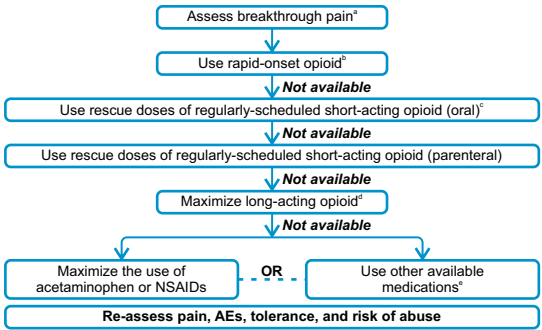
CPM algorithms

- Our management algorithms were predicated on a principle that recognizes that while evidence-based guidelines are the gold standard for CPM, there are several constraints – related to the inadequate availability of analgesics – that complicate the implementation of guideline recommendations in R-LS.
- We present one of our algorithms, based on the National Comprehensive Cancer Network (NCCN) guidelines and expert opinion. **Figure 2** provides guidance on the management of breakthrough cancer pain (BTcP). BTcP is usually treated with rescue medications i.e. supplemental analgesics used in combination with the regularly scheduled opioid.
- Consider a patient with cancer whose pain is being managed with regular prolonged-release oxycodone and who is currently experiencing BTcP – the NCCN guidelines recommend the use of rapid-onset opioids (eg. transmucosal fentanyl) in this patient. If this option is unavailable in your hospital, what would your treatment choice for this patient be?
- The BTcP algorithm (**Figure 2**) can be used to select the next best treatment option for this patient, which could be oral short-acting opioid (eg. normal release morphine or oxycodone), parenteral short-acting opioids, or maximizing the dose of long-acting opioids, based on availability.
- The algorithms we propose (others including **first line, opioid rotation** and **refractory CPM algorithms** are not shown) attempt to guide HCPs in tailoring the optimum analgesic regimen for CPM based on the needs of their patients and local availability of analgesics.

REFERENCES

1. Greco MT *et al.* *J Clin Oncol* 2014; 32(36):4149–54; 2. International Narcotics Control Board. 2015; https://www.incb.org/documents/Publications/AnnualReports/AR2015/English/Supplement-AR15_availability_English.pdf. Accessed 05 April 2017; 3. Kerr S *et al.* *J Glob Oncol* 2017; doi: 10.1200/JGO.2016.008250; 4. Vander Schaaf EB *et al.* *N C Med J* 2015; 76(4):230–4; 5. Javier FO *et al.* *J Glob Oncol* 2016; 2(4):235–43; 6. ACHEON Working Group. *Cancer Med* 2015; 4(8):1196–204; 7. Pastrana T *et al.* *J Palliat Med* 2015; 18(5):429–37; 8. Silbermann M *et al.* *Oncol* 2012; 23 Suppl 3:15–28. This work is supported by Mundipharma Pte. Ltd.

RESULTS



^aFor further guidance on diagnosing BTcP, refer to Davies AN, Dickman A, Reid C *et al.* The management of cancer-related breakthrough pain: recommendations of a task group of the Science Committee of the Association for Palliative Medicine of Great Britain and Ireland. *Eur J Pain* 2009; 13: 331–8.

^bConsider rapidly acting transmucosal fentanyl or fentanyl sublingual tablet in opioid-tolerant patients for brief episodes of incident pain (pain associated with specific activities or events).

^cAllow rescue doses of 10% – 20% of the 24-hour total dose of the regularly scheduled oral opioid, up to every 1 hour, as needed.

^dDo not use long-acting opioids on an as-needed basis. Slowly adjust dose and/or frequency of the long-acting opioid to minimize overdose and maximize outcome.

^eIncludes adjuvant medications and weak opioid analgesics such as tramadol and codeine; the use of weak opioids depends on clinical experience of local experts (may not necessarily be evidence-based).

Figure 2. Algorithm for the management of breakthrough cancer pain. Abbreviations: AEs, adverse events; BTcP, breakthrough cancer pain; NSAIDs, Non steroidal anti-inflammatory drugs.

Framework for implementation and advocacy

- To support the implementation of these algorithms and ultimately improve the availability of and access to analgesics in R-LS, we have formulated a framework that includes an educational program, pilot implementation, and an advocacy plan (**Figure 3**).
- Pilot tests are crucial to demonstrate the effectiveness of the algorithms and the educational program in improving CPM in R-LS. The outcomes from the pilot tests will not only enable refinement of the algorithms and optimization of implementation strategies, but also provide evidence to support the drafting of an advocacy document.
- Partnerships with international organizations that are already active in improving access equity, such as the World Health Organization and International Association for Hospice and Palliative Care, will be important in developing an effective advocacy strategy to lobby policymakers to improve availability and access to analgesics in R-LS.

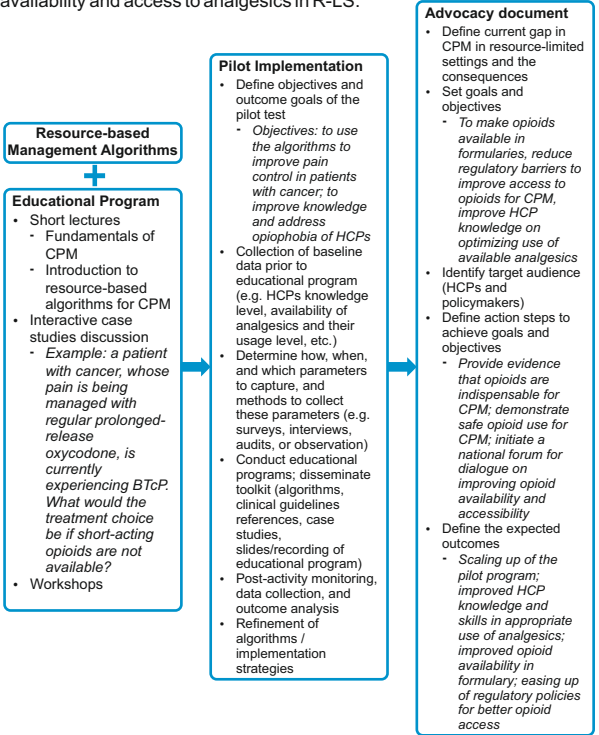


Figure 3. Implementation framework for improving availability and accessibility of analgesics in resource-limited settings. Abbreviations: BTcP, breakthrough cancer pain; CPM, cancer pain management; HCP, healthcare provider.

CONCLUSION

- The CAPER working group has taken the initial step towards optimizing CPM in R-LS by proposing a practical strategy that tackles the challenges in implementing best practices due to resource limitation and lack of education.
- Our strategy provides a pathway for optimal CPM despite differential resources, while also striving to improve resource availability for patients with cancer in R-LS.
- A successful implementation of our strategy would galvanize the achievement of equity in CPM in R-LS with regard to availability and accessibility of opioids, and ultimately provide high-quality care for all patients with cancer pain.