



Alleviating the access abyss in palliative care and pain relief— an imperative of universal health coverage: the Lancet Commission report

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Executive Summary

In agonising, crippling pain from lung cancer, Mr S came to the palliative care service in Calicut, Kerala, from an adjoining district a couple of hours away by bus. His body language revealed the depth of the suffering.

We put Mr S on morphine, among other things. A couple of hours later, he surveyed himself with disbelief. He had neither hoped nor conceived of the possibility that this kind of relief was possible.

Mr S returned the next month. Yet, common tragedy befell patient and caregivers in the form of a stock-out of morphine.

Mr S told us with outward calm. “I shall come again next Wednesday. I will bring a piece of rope with me. If the tablets are still not here, I am going to hang myself from that tree”. He pointed to the window. I believed he meant what he said.

Stock-outs are no longer a problem for palliative care in Kerala, but throughout most of the rest of India, and indeed our world, we find near total lack of access to morphine to alleviate pain and suffering.

Dr M R Rajagopal, personal testimony

Poor people in all parts of the world live and die with little or no palliative care or pain relief. Staring into this access abyss, one sees the depth of extreme suffering in the cruel face of poverty and inequity.

The abyss is broad and deep, mirroring relative and absolute health and social deprivation. Of the 298·5 metric tonnes of morphine-equivalent opioids distributed in the world per year (average distribution in 2010–13), only 0·1 metric tonne is distributed to low-income countries.¹ The amount of morphine-equivalent opioids distributed in Haiti is 5 mg per patient in need of palliative care per year, which means that more than 99% of need goes unmet. By contrast, the annual distribution of morphine is 55 000 mg per patient in need of palliative care in the USA and more than 68 000 mg per patient in need of palliative care in Canada—much more than is needed to meet all palliative care and other medical needs for opioids on the basis of estimates of the Commission (figure 1).

The fact that access to such an inexpensive, essential, and effective intervention is denied to most patients in low-income and middle-income countries (LMICs) and in particular to poor people—including many

poor or otherwise vulnerable people in high-income countries—is a medical, public health, and moral failing and a travesty of justice. Unlike so many other priorities in global health, affordability is not the greatest barrier to access, and equity-enhancing, efficiency-oriented, cost-saving interventions exist.

The global health community has the responsibility and the opportunity to close the access abyss in the relief of pain and other types of suffering at end-of-life and throughout the life course, caused by life-limiting and life-threatening health conditions. However, unlike many other essential health interventions already identified as priorities, the need for palliative care and pain relief has been largely ignored, even for the most vulnerable populations, including children with terminal illnesses and those living through humanitarian crises, and even in the Sustainable Development Goals (SDGs).² Yet palliative care and pain relief are essential elements of universal health coverage (UHC).

Several barriers explain this neglect: the focus of existing measures of health outcomes—major drivers of policy and investment—on extending life and productivity with little weight given to health interventions that alleviate pain or increase dignity at the end of life;³ opiophobia, which refers to prejudice and misinformation about the appropriate medical use of opioids;^{4–6} the focus, in medicine, on cure and extending life and a concomitant neglect of caregiving and quality of life near death;^{7,8} limitations on patient advocacy due to the seriousness of illnesses; the focus on preventing non-medical use of internationally controlled substances without balancing the human right to access medicines to relieve pain;^{9–12} and the global neglect of non-communicable diseases, which account for much of the need for palliative care.¹³

Global health is devoid of the investments, interventions, and indicators that are essential to ensure universal access to safe, secure, and dignified care at the end of life or to the palliation of pain and suffering. With this Report, we aim to remedy these limitations by: (1) quantifying the heavy burden of serious health-related suffering (SHS) associated with a need for palliative care and pain relief (section 1); (2) identifying and costing an Essential Package Of Palliative Care And Pain Relief Health Services (the Essential Package) that would alleviate this burden (section 2); (3) measuring the unmet need for one of the most essential components of the

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For WHO's 2015 Global Health Estimates see http://www.who.int/healthinfo/global_burden_disease/en

For additional online material see <http://www.miami.edu/lancet>

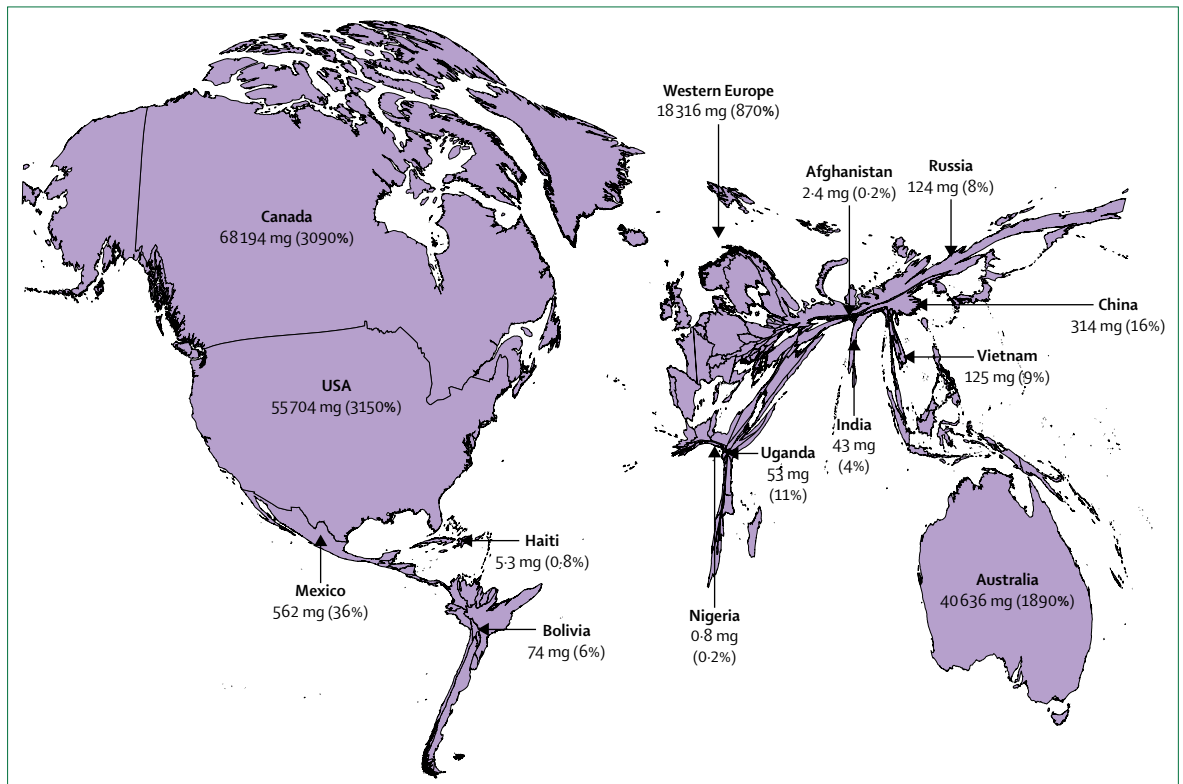


Figure 1: Distributed opioid morphine-equivalent (morphine in mg/patient in need of palliative care, average 2010–13), and estimated percentage of need that is met for the health conditions most associated with serious health-related suffering
Source: International Narcotics Control Board and WHO Global Health Estimates, 2015. See additional online material for methods.

package—inexpensive, immediate-release oral and injectable morphine (section 2); and (4) outlining national and global health-systems strategies to expand access¹⁴ to palliative care and pain relief as an integral facet of UHC by applying a balanced approach that ensures adequate attention to both the medical needs of all patients and the risk of non-medical use (section 3).¹² Our findings and recommendations are summarised in five key messages (panel 1).

Alleviating SHS is a global health and equity imperative

The Commission developed a new conceptual framework for measuring the global burden of SHS. Suffering is health-related when it is associated with illness or injury of any kind. Suffering is serious when it cannot be relieved without medical intervention and when it compromises physical, social or emotional functioning. Palliative care should be focused on relieving the SHS that is associated with life-limiting or life-threatening conditions or the end of life. We analysed the 20 health conditions and 15 symptoms typically associated with these health conditions that cause most of the burden of SHS. We undertook this far-reaching analysis of health conditions because we recognise and uphold the importance of including previously neglected diseases within the realm of palliative care.

More than 25.5 million people who died in 2015—45% of the 56.2 million deaths recorded worldwide—experienced SHS. Of those, more than 80% of the people who died with SHS in 2015 were from developing regions, and the vast majority lack access to palliative care and pain relief.

Every year almost 2.5 million children die with SHS and more than 98% of these children are from developing regions. In high-income countries, children account for less than 1% of all deaths associated with SHS, whereas in low-income countries, children account for more than 30% of all deaths associated with SHS. Yet we also estimate that in low-income countries at least 93% of child deaths associated with SHS are avoidable.

Including both those who die in a given year and the many who live with life-threatening or life-limiting health conditions, we estimate that more than 61 million people are affected by SHS. More than 80% of these patients live in LMICs where palliative care and pain relief is scarce or non-existent.

The annual burden measured in days of physical and psychological SHS is huge—more than 6 billion days, or up to 21 billion days worldwide, depending on symptom overlap. Although HIV and cancer rank highest overall among conditions accounting for both number of people who experience SHS and the total days with SHS, even in

LMICs a number of other chronic and non-communicable diseases rank among the top 10 conditions, including cerebrovascular disease, dementia, lung disease, liver disease, non-ischaemic heart disease, and injuries. As populations age and undergo epidemiological transition, SHS for these complex diseases will become more common relative to acute, preventable illness.

However, infection and poverty-associated health conditions continue to affect people in LMICs, and more than half of the SHS burden in terms of number of patients is associated with avoidable, premature deaths. For example, more than 95% of deaths associated with tuberculosis are avoidable. Palliative care cannot be a substitute for improved access to the public health interventions and treatments that could have prevented much of the SHS and premature deaths in the first place.

A lowest-cost Essential Package can alleviate most SHS

The Commission's expert panel of palliative care providers determined that much of the SHS burden could be alleviated with health services that can be made accessible to poor people living in all parts of the world. We developed an Essential Package that is the minimum a health system, however resource-constrained, should make universally accessible (panel 2).

The Essential Package is lowest cost by design (section 2), yet universal access to this Essential Package will rely on additional investment that would equate to a high proportion of health expenditure in low-income countries, especially with the additional cost of ensuring safe supply chains and training. With budget constraints, this will mean trade-offs against other health-system priorities, and we propose a framework for measuring the value to patients and families of alleviating SHS that would complement existing metrics like quality-adjusted life-years (QALYs) and enable balanced decision making.¹⁸ We also present mechanisms for accessing lowest prices through collective action, adopting human resource models based on competencies to lower cost, and extending coverage through more efficient delivery models. We highlight the opportunities for cost-saving by reducing end-of-life hospital admissions, reducing the risk of impoverishment, and adopting the diagonal approach.^{19–24} For example, access to best international prices would reduce overall costs of the Essential Package for low-income countries by about 25%. Prices paid by countries for medicines, especially injectable morphine, vary enormously; for example, the overall medicine cost of the Essential Package in Rwanda, using reported country prices (additional online material), is nearly three times that using lowest reported international prices, whereas for injectable morphine, the difference in price is almost six fold.

Although a rigorous cost-effectiveness analysis was beyond the scope of this report, we compared the costs of the Essential Package to estimates of UHC packages.

Panel 1: Global access to palliative care and pain relief: five key messages

The findings and evidence presented by the Commission demonstrate that:

- 1 Alleviation of the burden of pain, suffering, and severe distress associated with life-threatening or life-limiting health conditions and with end of life is a global health and equity imperative. Most high-income countries have responded with effective interventions, yet the needs of poor people have been neglected, and people living in low-income and middle-income countries (LMICs) have little or no access to pain relief or palliative care.
- 2 An affordable, Essential Package of palliative care and pain relief interventions can ameliorate a large part of the preventable burden of serious health-related suffering (SHS), and this package can be made universally accessible to remedy the abyss in access to care.
- 3 LMICs have enormous but unrealised opportunities to improve the welfare of poor people at modest cost. Publicly financing and fully integrating the Essential Package into national health systems as part of universal health coverage, using cost-effective models that can be applied in all countries, offers a solution.
- 4 International collective action is necessary to ensure that all people, including poor people, have access to palliative care and pain relief for life-threatening and life-limiting health conditions and end-of-life care. A well functioning and balanced global system must both prevent non-medical use and misuse of medicines and ensure effective access to essential medicines for palliative care, including opioids for pain relief.
- 5 Effective policy making requires better evidence and priority-setting tools to adequately measure the global need for palliative care, implement policies and programmes, and monitor progress toward alleviating the burden of pain and other types of SHS.

Our Essential Package follows the most recent Disease Control Priorities methods²⁵ and is one of the least costly of the components that form the essential UHC package. For low-income countries, the Essential Package costs, at lowest reported international medicine prices, about US\$2·16 per capita per year, which is about 2–3% of the cost of the essential UHC package. In lower-middle-income countries, the cost is \$0·78 (0·6% of the cost of the essential UHC package).

One of our most emphatic recommendations is that immediate-release morphine be made available in both oral and injectable formulations in the appropriate and necessary dose for any patient with moderate-to-severe pain or terminal dyspnoea that cannot be relieved adequately by other means.

The enormous gap between need and availability of opioid analgesics is growing and is increasingly skewed against people living in poverty. However, we estimate that the cost of meeting the global shortfall of about 48·5 metric tonnes of morphine-equivalent opioids is about \$145 million per year if all countries had access to the lowest retail prices paid by some high-income countries, which is a fourth of the projected cost at current region-specific reported prices. The shortfall in LMICs accounts for more than 99% of this, and the cost to cover this unmet need in LMICs at lowest retail prices is only 0·009% of LMIC health expenditure in 2015. For low-income countries, the cost of meeting the shortfall in morphine is

Panel 2: An Essential Package Of Palliative Care And Pain Relief Health Services

The Essential Package contains the inputs for safe and effective provision of essential palliative care and pain relief interventions to alleviate physical and psychological symptoms, including the medicines and equipment that can be safely prescribed or administered in a primary care setting. The list of essential medicines in the Essential Package is based on WHO’s list of essential medicines,¹⁵ and considers the medicines, doses, and administration routes for palliative care for both adults and children.

The Essential Package is designed to be lowest cost by including only off-patent formulations, frugal innovation for needed equipment, and a staffing model based on competencies rather than professions. Tasks often undertaken by specialised medical personnel in high-income countries can be performed by other specialised and general practitioners and nurses or by community health workers empowered with the necessary training and medical supervision to participate effectively in the delivery of palliative care and pain treatment at all levels of care, from the hospital to the home.^{16,17}

With the key exception of morphine, the medicines in the Essential Package are available in most countries even if supply is limited. For morphine, an essential palliative care medicine, assuring safety and accessibility is complex. Ensuring a balance between appropriate medical access to controlled medicines and the prevention of their diversion and non-medical use is crucial, and the Commission not only designed appropriate human resource models but also the strategies to provide the complementary policy and stewardship to expand access to an Essential Package that includes morphine.¹²

The health services of the Essential Package must be complemented by interventions for the relief of social and spiritual suffering to preserve the dignity of patients, facilitate access to health interventions, and prevent financial hardship and impoverishment. Yet, these social supports are neither part of the remit of health ministries nor should they be financed from a health budget.

Antipoverty and social development policies, publicly funded safety nets, programmes, and ministries must give special attention to ensure that families do not sacrifice their basic needs in desperate attempts to care for loved ones. These persons with life-limiting or life-threatening health conditions and their families should be mainstreamed into existing social support and social welfare programmes, yet they are often ignored, excluded, or marginalised, preventing them from being effectively integrated into these programmes.

Medicines

- Amitriptyline
- Bisacodyl (Senna)
- Dexamethasone
- Diazepam
- Diphenhydramine (chlorpheniramine, cyclizine, or dimenhydrinate)
- Fluconazole
- Fluoxetine or other selective serotonin-reuptake inhibitors (sertraline and citalopram)
- Furosemide
- Hyoscine butylbromide
- Haloperidol
- Ibuprofen (naproxen, diclofenac, or meloxicam)
- Lactulose (sorbitol or polyethylene glycol)
- Loperamide
- Metaclopramide
- Metronidazole
- Morphine (oral immediate-release and injectable)
- Naloxone parenteral
- Omeprazole
- Ondansetron
- Paracetamol
- Petroleum jelly

Medical equipment

- Pressure-reducing mattress
- Nasogastric drainage or feeding tube
- Urinary catheters
- Opioid lock box
- Flashlight with rechargeable battery (if no access to electricity)
- Adult diapers (or cotton and plastic, if in extreme poverty)
- Oxygen

Human resources (varies by referral, provincial or district hospital, community health center, or home)

- Doctors (specialty and general, depending on level of care)
- Nurses (specialty and general)
- Social workers and counsellors
- Psychiatrist, psychologist, or counsellor (depending on level of care)
- Physical therapist
- Pharmacist
- Community health workers
- Clinical support staff (diagnostic imaging, laboratory technician, nutritionist)
- Non-clinical support staff (administration, cleaning)

Additional detail is provided in the additional online material.

\$69 million per year, compared with \$13 million per year at lowest retail prices.

The cost to cover morphine-equivalent pain treatment for all children younger than 15 years with SHS in low-

income countries is \$1 million per year. This is a pittance compared with the \$100 billion a year the world’s governments spend on enforcing global prohibition of drug use.²⁶

Integration of palliative care and pain relief interventions, beginning with the Essential Package, will strengthen national health systems to meet the SDGs

By definition, palliative care is a core component of UHC and a key element of quality health care.^{27–29} Yet in most parts of the world, the definition has not been translated into practice.

Countries cannot meet SDG Target 3.8 on UHC without including palliative care and pain relief, and the Commission calls on all countries to ensure universal access, with financial risk protection, to the Essential Package by 2030.² As posited by previous *Lancet* Commissions,³⁰ a model of progressive universalism should be applied, and middle-income countries in particular should strive to have the Essential Package in place before 2030 and to expand the Essential Package to include palliative surgery and slow-release, off-patent morphine formulations, radiation, and chemotherapy.

The benefits of universal access to palliative care and pain relief spill into other parts of a health system and contribute to the quality of care. Systemic integration of palliative care and pain relief is a quintessential example of the diagonal approach^{24,31,32} because the implementation of these interventions will strengthen the overall performance of health systems. Findings from an extended cost-effectiveness analysis undertaken for the Commission suggest that universal, public financing of the Essential Package can reduce risk of catastrophic health-care expenditures, a main cause of impoverishment in LMICs.^{33,34} Finally, in an extensive review of literature about the introduction of palliative care and data analysis from Mexico, we found important, potential cost-saving in LMICs by reducing end-of-life hospital admissions.^{19–23,35}

Health-system functions of stewardship, financing, delivery, and resource generation³⁶ must be strengthened to expand access to palliative care and pain relief in the context of UHC. For stewardship, the Commission stresses that each country should: (1) design and implement legal and regulatory guidelines that include the safe management of opioid analgesics and other controlled medicines without creating unnecessary barriers for patients, covering all service providers who participate in palliative care and pain treatment, and restricting the influence of for-profit companies on the marketing of opioid medications; (2) encourage priority-setting public education and awareness-building campaigns, and incorporate the alleviation of SHS into the national health agenda; (3) develop and implement comprehensive palliative care and pain treatment and management guidelines and national plans; and (4) convene and coordinate the multisectoral actors and entities that engage in palliative care and pain relief through ministries of health.

Public financing for palliative care and pain relief is crucial, and the Essential Package must be integrated into all existing national insurance and social security programmes and included in systemic health reforms. The Commission recommends that governments allocate public or publicly mandated resources to cover the Essential Package, especially for poor people, and establish mechanisms to expand funding to extend the package of covered services.

The Essential Package must be anchored in clinical guidelines and referral systems to ensure safe and effective delivery at all levels of care. In primary care, this relies on nurses, general practitioners, community health workers, efficient referral systems, and extensive use of appropriate communication technologies (eg, mobile phones). Palliative care must become a recognised, licensed medical specialty in every country, and all licensed general practitioners who provide palliative care should have training to achieve basic competencies.^{37,38}

Each country must design and implement an accountability framework that includes monitoring and evaluation of legislative provisions, policies, interventions, and programmes. Progress on health and on human rights can be monitored with explicit outcomes scales and benchmarks, using an appropriate set of metrics that extend beyond mortality and morbidity. Effective management relies on data monitoring and indicators of palliative care and pain relief that are embedded in national and subnational health information systems. Civil society and academia should be part of performance assessment and accountability initiatives, and data and results must be publicly available.

We advocate for countries to establish interdisciplinary, interinstitutional, multistakeholder committees that can eventually be formally associated with their ministries of health. These should include the diverse participants who have historically been or could in the future be involved in policy making and delivery of palliative care and pain relief, such as parliamentarians, lawmakers, representatives of faith-based organisations and other not-for-profit civil society organisations, and the for-profit private sector.³⁹ As with previous *Lancet* Commissions,⁴⁰ our Report can serve as impetus, and this Commission as an example, for developing these national committees or commissions.

The appropriate response to the global burden of untreated SHS is to expand access to effective palliative care and pain relief alongside the expansion of other components of UHC. Health systems need to be strengthened through the integration of palliative care alongside prevention, early detection, treatment, and rehabilitation strategies to ensure that all patients have access to effective, efficient, and responsive care strategies and full information. This will ensure that an effective response to suffering is at the core of a people-centred approach to health systems.

Effective global collective action is needed to expand access to palliative care and pain relief

To achieve universal access to palliative care and pain relief, global health institutions must become adept at promoting and facilitating effective action by countries. Activities should be focused on four core functions: (1) international stewardship; (2) production of global public goods, especially knowledge-related goods; (3) management of externalities; and (4) mobilisation of global solidarity and convening.⁴¹

The 2014 World Health Assembly (WHA) Resolution 67.19⁴² gives WHO the mandate and mission to become the leading global steward for achieving universal access to palliative care as part of UHC. By voting for the Resolution, countries publicly attested to their intention to implement the recommendations targeted at member states. However, the translation of commitment into progress is weakened by the absence of an accountability framework.⁴³ The Commission calls for WHO to develop and implement a formal accountability mechanism tied to the Resolution that includes specific indicators, associated targets, and recommendations for corrective action. Lessons from the AIDS response are testament to the salience of these global systems.³⁹

Stewardship of palliative care must be intersectoral and interinstitutional, especially because of the role of the UN Office on Drugs and Crime and the International Narcotics Control Board (INCB).⁴² The *Lancet* Commission on Essential Medicines put forward proposals for action,⁴⁴ and we strongly support these recommendations and suggest working jointly to ensure access to medicines for pain relief.

Knowledge exchange is crucial to effective investment in change and is needed to assist countries to effectively adapt and adopt systemic innovations. We recommend that both global and regional actors invest in evidence to facilitate corrective policies and ensure effective progress. Of highest importance are: the indicators, measures, and metrics for routine data collection and reporting in palliative care; the design of clinical guidelines; and training material, including standardised, global, online curricula. Much of this work should be done by international agencies such as WHO, but international civil society organisations and academics also have a role.

For the management of externalities through global collective action, the Commission focused on the limitation of access to controlled medicines for pain relief, especially in LMICs. Global entities and countries must maximise access to morphine for medical and scientific use while minimising the risk of diversion and non-medical use. Countries have considerable leeway in applying the principals of international law and treaties to adapt to local situations in ways that promote balance.¹² Countries that report high consumption of opioids and little or no non-medical use must disseminate lessons learned and best practices. In most LMICs, unduly

restrictive laws and regulations hinder the availability of and access to opioids for people with legitimate needs. Yet there is reason to assume that the diversion and non-medical use of drugs is not a function of increasing medical access in LMICs, but rather a consequence of inadequate safeguards to minimise such diversion in certain high-income countries.^{45,46}

The Commission found substantial potential savings if countries could access best-case international medicine prices, evidencing the need for global collective action to aggregate demand, better understand the market and supply, and support LMICs with information and negotiating capacity to secure stable, lowest prices. We advocate for establishing global or regional purchasing and procurement funds and financing entities to facilitate access to the medicines outlined in the Essential Package, especially immediate-release oral morphine. To secure best quality and price, and to provide technical assistance to countries in establishing safe and effective supply chains, the Commission calls on the World Bank, regional development banks, WHO, and the The Global Fund to Fight AIDS, Tuberculosis and Malaria to establish financing platforms to link to the provision of other medicines for treatment of chronic and non-communicable diseases. The pharmaceutical industry must be called upon to participate in making these off-patent medicines accessible and affordable.

Children in need of palliative care face tremendous barriers to access, and removing these barriers must become a priority. The absolute number of children in need of palliative care is relatively small, so the cost of providing them with the Essential Package is very low. The Commission advocates that the World Bank, as a leading global development financing facility with expertise in innovative financing, be called upon to develop and manage a fund with a strong focus on low-income countries where even the Essential Package is likely to be price-prohibitive and supply channels are least developed.

The relief of SHS has not been prioritised in humanitarian disasters, and even the most basic inputs such as morphine are often inadequate or entirely unavailable. Global humanitarian assistance organisations must include palliative care and pain relief medicines and experts in all responses to natural disasters or disasters caused by human beings. The Commission calls upon WHO to work with international humanitarian assistance agencies to develop funding, delivery, and accountability mechanisms that ensure access to palliative care and pain relief.

Effective national and global policy making must be evidence-based, and this requires a rigorous, vigorous, and substantive research agenda

The research agenda must provide the key knowledge for closing the access abyss and the tools to both set and monitor global and national priorities and progress on

palliative care and pain relief. The Commission sets forth the elements of an agenda that emphasises the need to develop strong metrics and data to monitor progress and implement research around SHS.

This research and dissemination agenda will demand resources. Very few foundations and donors prioritise work on palliative care and pain relief in LMICs; most of those that previously provided support have now closed their programmes.⁴⁷ To support these research endeavours, the Commission calls on non-governmental and governmental research funding agencies and foundations to incorporate palliative care and pain relief into their priorities in health and social development. Although this funding can be triggered by researchers, to date only a small group of palliative care specialists have prioritised international work, and the issue has been largely ignored by experts working on specific health conditions associated with SHS, many of which are neglected non-communicable diseases.¹³

Afterlife of the Commission: advocacy, accountability, and analysis

The Commission should provide a platform to push for progress and ensure accountability. We have engaged with civil society to enable the Commission's evolution into a working group of leaders from global, national, and regional palliative care advocacy institutions. The mandate of the working group is to: develop monitoring frameworks and public accountability tools, including indicators and targets that can be adapted and adopted by both countries and global governance institutions; support national commissions through training and capacity building; catalyse national planning for palliative care and pain relief; encourage the production and dissemination of knowledge from implementation and health-systems research, especially in LMICs; and forge linkages between the palliative care community and the non-communicable diseases movement.⁴⁸

The working group will report periodically on progress in implementing the recommendations of the Commission and on the degree of uptake by national and global stewards. This work is aligned with previous and planned initiatives of three global non-governmental organisations (International Association for Hospice and Palliative Care, International Children's Palliative Care Network, and Worldwide Hospice Palliative Care Alliance), each of which is committed to facilitating the work of this group in collaboration with regional and national civil society representing Africa, Asia, eastern Europe, Latin America, and the Caribbean.

Introduction

From that moment commenced the shrieking fit which lasted for three days, and was so terrible that it was impossible to hear it without horror even through two doors.

Leo Tolstoy, The Death of Ivan Ilyich, 1886

Imagine your final months, weeks, and days of life. Like most, you probably hope to be free of pain. Consider, however, a scenario in which you and those who hold you dear face those painful days with no access to the palliative care that could alleviate your suffering: Tolstoy's Ivan Ilyich bereft of even opium to calm the fear and agony. Unimaginable? Yet this is the reality for most people. With few exceptions, poor people throughout the world live and die with little or no access to pain relief or any other type of palliative care.

Access to palliative care and pain relief is a health, equity, and human rights imperative that has been largely ignored in the goal to achieve UHC. Indeed, our Commission⁴⁹ found no other important health intervention as lacking or inequitably distributed as pain relief, the pillar of palliative care. The global health community has the responsibility and the opportunity to close this access abyss by providing universal access to an affordable package of palliative care services that can alleviate the remediable suffering associated with life-threatening and life-limiting health conditions.

The access abyss is both relative and absolute. Of the 298.5 metric tonnes of morphine-equivalent opioids distributed in the world each year (an average from 2010–13), 287.7 metric tonnes are distributed to high-income countries, and this distribution is dramatically skewed to a few countries. Only 0.1 metric tonnes—0.03% of the total amount—are distributed to low-income countries. In the poorest decile of countries, a patient with life-threatening or life-limiting health conditions has access to only 10 mg morphine-equivalent opioids per year. Our estimates show that this amount is sufficient to meet less than 2% of palliative care needs and an even smaller proportion of the total medical need for pain relief medicines. In the world's wealthiest decile of countries, each patient in need of palliative care has access to more than 47 000 mg morphine-equivalent opioids per year, which is much more than is needed to meet all palliative care and other medical needs for opioids if all patients in these countries were to have appropriate and necessary access to these essential medicines. The fact that most patients, poor patients in particular—including many poor people in high-income countries—are denied access to such an inexpensive and powerful intervention is a medical, public health, and moral failing.

Although many other inequities have been identified as health-care priorities, injustice in access to palliative care and pain relief has been largely ignored, even for children and people at the end of life. This is particularly surprising because we find that most of the burden of SHS, can be alleviated with effective, low-cost interventions contained in an Essential Package that can be made accessible to people living in poverty anywhere in the world.

Current needs for palliative care and pain relief are large and will grow. According to the Commission's

estimates of the need for palliative care throughout the life course and at the end of life, more than 25·5 million people who died in 2015 (45% of the 56·2 million reported deaths worldwide) would have benefited from palliative care. More than 35·5 million people who did not die in 2015 also experienced SHS, and although they did not die from their health conditions, they should have received palliative care or treatment for pain and other types of suffering. More than 80% of these people live in LMICs where access to basic palliative care and medicine-based pain relief is extremely limited or non-existent.

With populations ageing, the number of frail elderly people increasing, and chronic diseases and non-communicable diseases becoming increasingly common, the need for palliative care will grow.^{50,51} Between 2015 and 2050, the population of persons aged 60 years or older is projected to more than double, and the number of people aged 80 years or older is projected to more than triple.⁵² Between 2015 and 2030, the fastest population growth is expected in Latin America, the Caribbean, Asia, and Africa.⁵² In 2015, non-communicable diseases accounted for 60% of the global disease burden (in disability-adjusted life-years), compared with 43% in 1990. More than 70% of deaths in 2015 were attributable to non-communicable diseases, and more than 75% of these deaths occurred in LMICs.⁵³ Non-communicable diseases such as cancer, dementia, cerebrovascular disease, and lung disease cause a large proportion of SHS, and they are expected to cause increasing SHS as LMICs undergo epidemiological transition.

The global movement to achieve UHC, an SDG3 target⁵⁴ that focuses on ensuring healthy lives and wellbeing for all people and at all ages, provides new opportunities to expand access to palliative care at a time when need is increasing rapidly.^{2,55} Yet the interest, investment, and indicators needed to guarantee universal access to safe, secure, and dignified care until death, and to ensure palliation of pain and suffering throughout life, are grossly inadequate. Policy makers and providers do not prioritise palliative care, and efforts to promote human development, reduce poverty, and strengthen health systems are stymied, which in turn reduces the capacity of countries to achieve SDG3.²

To remedy this vacuum in global health and close the access abyss in palliative care and pain relief, the Commission dedicated itself to estimating the burden of SHS, identifying the basic interventions needed in an Essential Package to remedy this burden, demonstrating the inequity of access to pain relief, and outlining national and global health-system strategies for providing universal access to this Essential Package.

Barriers to increased access to palliative care and pain relief

Achieving effective access to palliative care and pain relief is not only a function of the affordability and availability of health services and technologies.¹⁴ Why have maintaining dignity and security at the end of life

and alleviating extreme pain and suffering not become health priorities?

First, existing measures of health outcomes—major drivers of policy and investment—focus on extending healthy life and productivity. Health interventions that relieve pain and suffering but do not extend life have not been effectively integrated into these outcome measures.^{56,57}

To this we add opiophobia, the prejudice and misinformation surrounding the appropriate medical use of opioids in the context of a balanced approach that reduces risks of non-medical use.^{4,5,11} A prevalent but unwarranted fear of non-medical use and addiction to opioids and opioid-induced side-effects, both among health-care providers and regulators and among patients and their families, has led to insufficient medical use. Unbalanced laws and excessive regulation perpetuate a negative feedback loop of poor access that mainly affects poor people. This leads to underestimates of needs, which in turn affects the amounts of opioids that are produced or imported for medical use in a country.¹²

Efforts to prevent non-medical use of internationally controlled substances, such as morphine and other opioid analgesics, have overshadowed and crippled access to opioids for palliative care. These efforts have focused on preventing diversion and non-medical use rather than ensuring access by people with legitimate health needs.^{9–12} Even the SDGs reflect this skew toward preventing non-medical use. SDG Target 3.5 makes an explicit call for strengthened “prevention and treatment of substance abuse, including narcotic drug abuse” yet there is no specific mention of palliative care or pain relief in any target or in any part of the SDGs.⁵⁴

Activism by people living with diseases and health conditions who need palliative care and pain relief should be key, as it was to the global AIDS response,³⁹ yet there are unique barriers. First, many patients with life-threatening and life-limiting health conditions are very weak, and many do not survive. Second, advocacy tends to be disease-specific and focuses on cure and prevention, shying away from the difficult topic of death. Finally, pain relief has been overshadowed by advocacy efforts around substance control.

Lack of attention to palliative care is also the result of developments in the science of medicine. In much of medical history, the palliation of suffering was the core of medicine and was practised by all doctors, largely because so few effective interventions were available to cure patients. As medical science evolved, doctors were increasingly able to focus on preventing or curing diseases, injuries, and illnesses, marginalising the work of palliating suffering and maximising dignity at the end of life.^{7,8} By contrast, from the late 1800s to the last decades of the 20th century, the principles of palliative medicine and the institutional settings for providing terminal care were created, and palliative care developed into a specialised field of medicine (panel 3).

Panel 3: A history of palliative care

Modern palliative care emerged in the 1960s and 1970s, though with much earlier roots. In the 19th century, doctors devised the principles of palliative medicine, showing the value of new pain-relieving medicines and technologies and mapping the challenges of caring for those with advanced disease at a time when society became concerned about the process of dying. Notable was Munk's 1887 treatise on easeful death, in which he described practical, spiritual, and medical end-of-life support.⁵⁸

In parallel, specialised institutional care for dying people in hospices began in several countries, including France, Great Britain, India, South Africa, the USA, and Zimbabwe. Although limited in scale, their philosophy of care inspired others.

Among them was Cicely Saunders who launched a movement in the 1960s for care of the dying, incorporating new knowledge and methods. Her concept of total pain with physical, social, psychological, and spiritual dimensions, revolutionised thinking and practice.⁵⁹ She offered a positive, imaginative alternative to medicine's despairing rejection of dying patients and sought to ensure pain relief, maintain dignity, and enhance remaining life, however short. Her approach was embodied in St. Christopher's Hospice, founded in 1967 as the first modern hospice to include research and training facilities. Its influence quickly spread worldwide.

To gain traction in the world of medicine, these protagonists moved from activism to a concerted body of knowledge and practice. Management of cancer pain proved key. Early studies explored and reconsidered prevailing orthodoxies. New competence emerged in use of morphine and other medicines,

reinforced by clinical research, which fuelled investment and growth in services.⁶⁰

Balfour Mount is credited with coining palliative care,⁶¹ a term adopted in the 1970s that came to signify the transfer of hospice principles into wider settings within the health-care system, including acute care hospitals, primary care, and homes. Specialist journals were created to disseminate research and clinical practice, and national and international associations were formed. A new field of research was created.

Formal recognition of palliative medicine as a specialty began in the UK in 1987, and extended to other countries and to nursing.⁶² WHO had a major role in 1986 when it acknowledged the under-treatment of cancer pain as a public health problem and published the revolutionary Pain Relief Ladder⁶³ with simple recommendations to treat pain in three steps: mild, moderate, and severe. Recognising the need for a comprehensive approach to palliative care, WHO published a definition of palliative care in 1990⁶⁴ and emphasised the importance of symptom management and pain relief. In a 2002 revision, WHO extended their definition of palliative care beyond cancer.⁶⁵

The field of palliative care was now poised for a global role, and huge levels of unmet need were identified. Palliative care was drawn increasingly to a public health framework of appropriate policies, services, and interventions, together with suitable quality assurance and evaluation.⁶⁶ Full recognition of the opportunities and challenges came with the World Health Assembly Resolution of 2014 calling all governments to integrate plans for palliative care into their national health policies.⁴²

Definition of palliative care

The Commission worked with WHO's definition of UHC, which calls for all people to have access to the promotive, preventive, curative, rehabilitative, and palliative health services they need, of sufficient quality to be effective, while also guaranteeing that the use of these services does not expose them or their families to financial hardship.⁶⁷ This definition includes palliative care as a core component of UHC.⁴²

Thus, by definition, no health system can achieve UHC without guaranteeing universal access to at least a minimum package of palliative care services.⁶⁸ Yet the expansion of access to palliative care can proceed alongside or precede expansion of coverage of other services. In line with the thesis of progressive universalism and pro-poor health-care strategies,³⁰ the provision of basic palliative care does not require the achievement of UHC. The rollout of the Essential Package can and should proceed as part of the extension of the most basic aspects of coverage of other health-care components.⁶⁹ Covering palliative care is also part of guaranteeing financial protection, a fulcrum of UHC, that frees low-income families from choosing between witnessing a loved one's suffering or incurring

impoverishing and catastrophic health spending and foregoing basic needs that drives them further into poverty.

Efforts to provide universal access to palliative care can never excuse the failure to provide other components of UHC. No health system can claim to meet the health-care needs of its citizens if it focuses on palliation and neglects prevention services, disease management, or treatment. This is a crucial caveat. Too many people living in poverty die prematurely because of inadequate access to prevention, early diagnosis, and timely and effective treatment of health conditions. The Commission analysed avoidable mortality to demonstrate this association empirically.

WHO's definition of palliative care is the Commission's starting-point: "an approach that improves the quality of life of patients and their families facing the problems associated with life-threatening illness through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial, and spiritual".⁶⁷ Yet WHO's definition dates to 2002 and has limitations, and the Commission recommends that the definition be reviewed and revised

to encompass health-system advances and low-income settings where medical professionals often have the difficult task of caring for patients without necessary medicines, equipment, or training.

Building on findings described in the scientific literature and WHO's definition of palliative care, the Commission recommends a definition that explicitly rejects any time or prognostic limitation on access to palliative care, includes complex chronic or acute, life-threatening, or life-limiting health conditions, and considers all levels of the health-care system from primary to specialised care and all settings where palliative care can be delivered.⁷⁰ Thus, the Commission treats palliative care as an essential component of comprehensive care for persons with complex chronic or acute, life-threatening, or life-limiting health conditions that should be practised by all health-care and social care providers and by palliative care specialists, and that can be provided in any health-care setting, including patients' own homes.⁷¹

The definition of children's palliative care shares all elements of palliative care for adults and also

emphasises the continuing physical, emotional, and cognitive development that defines medical and social needs of children, including their entitlement to education and play, their understanding of disease and death, the role of the family and home as the centre of care, and the necessary link between the paediatrician and the palliative care professional.⁷⁰ Although the Commission did not undertake a separate analysis for children, we recognise and emphasise these distinctions throughout the report.

We emphasise and agree with the models that incorporate palliative care as a core component of disease management, integrated from point of diagnosis of a life-threatening or life-limiting health condition, growing in importance as part of comprehensive treatment or end-of-life care, and culminating with bereavement care.⁷² The Commission dedicated itself to measuring both decedent and non-decedent burden of SHS because of our conviction that palliative care is not restricted to end of life. Yet the process of disease and pathways of care are complex, making these calculations difficult. Although widely disseminated models depict a single, linear trajectory from diagnosis to the end of life (figure 2A),^{74,75} patients move in and out of palliative care depending on disease trajectory around cure, survivorship, and end of life. There is no standard, and the trajectories vary by disease and point in the life cycle of the patient (figure 2B).^{74,76,77}

Integration of palliative care for certain health conditions, such as chronic obstructive pulmonary disease, is challenging because it is not easy to identify advanced stage and the ensuing limited prognosis, and the time during the disease trajectory when patients would benefit from palliative care or from a realignment towards palliative care from treatment goals is often missed. Integrating palliative care into a health system and expanding coverage in ways that do not prevent patients from accessing curative care should allow for flexibility and fluid integration of disease management and palliative care from the point of diagnosis. Indeed, for patients and families to accept palliative care early on, they must be assured and reassured that acceptance does not mean foregoing disease-modifying treatment.⁷⁸

Scope of the report

Anchored in this definition and model of palliative care, the Commission deliberated at length to define its scope of work and specify the diseases, health conditions, and associated categories of suffering to be analysed. The Commission thoroughly debated, without reaching full consensus, the complex issue of the role of palliative care and the overlap between palliative care and pain treatment and management.

The Commission developed the concept of SHS to describe suffering that compromises physical, social, or emotional functioning, cannot be relieved without medical intervention, and is typically greatly ameliorated

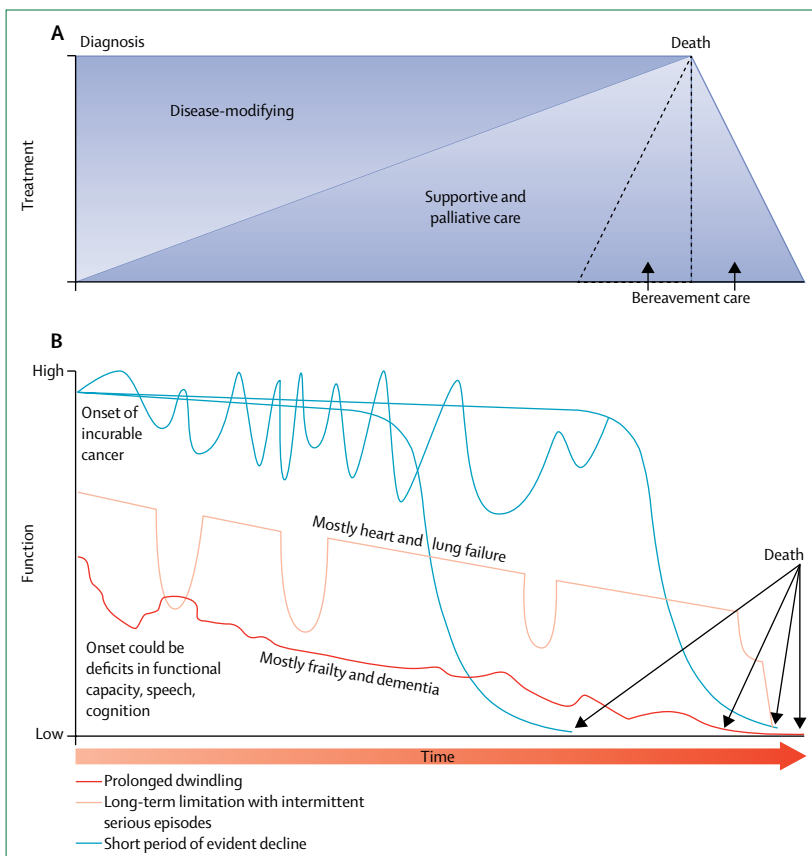


Figure 2: Integrating palliative care across illness trajectories

(A) Palliative care continuum from diagnosis to end of life. (B) Typical functional status trajectories of people with progressive chronic illness. Each line in the figure depicts a possible disease trajectory. The blue lines, for example, represent patients with cancers. For example, a patient with pancreatic cancer, with few treatment options and a low 1 year survival rate¹⁶ is represented by the short blue line. The wavy line is more typical of a patient with metastatic cancer who can move between treatment and palliative care, with relatively high functional status, and eventually die of the disease. Source: WHO (1990),⁷³ Lynn and Adamson (2003).⁷⁴

by palliative care and pain relief. The Commission agreed to include within the scope of health-focused palliative care: (1) all health conditions associated with end-of-life; and (2) chronic or acute, life-threatening or life-limiting health conditions, diseases, and injuries. The Commission decided not to focus on acute or chronic health conditions that are not life-threatening or life-limiting, including chronic, non-malignant pain. The scope of the Report is summarised in figure 3.

The Commission insists, however, that SHS of any kind cannot go untreated and that all medical personnel, doctors especially, must be sensitised to respond to the best of their professional capacity. Where health-care resources are inadequate, health conditions that would and should not be serious or life-threatening become so and require palliative care. Particularly in resource-constrained countries and outside large cities where specialty care is unavailable, primary care clinicians must deal with a challenging range of patient needs because specialty medical care, of almost any kind, is often unavailable. The expansion of access to palliative care, and especially pain treatment, will therefore help cover a broad range of SHS.

An overlap in the diseases and symptoms that characterise health conditions that do require palliative care and those that do not, often complicates efforts to clearly differentiate policies and health interventions. Whereas the interventions and policies that we consider in our Report are specific to palliative care, they can often be effectively adapted to cover other realms of patient need, especially pain relief.

Palliative care should be responsive to suffering of any kind and should seek to prevent and relieve not only physical and psychological suffering but also social and spiritual suffering of patients and their families.⁶⁷ The Commission decided to focus on physical and psychological suffering because this can be most readily addressed by a health system and because of the empirical and conceptual challenges of measuring spiritual and social hardship. Although remediation of social and spiritual suffering is not the primary role of the health-care system, they are integral interventions of palliative care.^{79,80} Social suffering might prevent the delivery of effective palliative care health services, and the Commission has developed recommendations for delivery and financing of these by other social sectors.⁸¹ Patients and families often insist on and need a response to alleviate their spiritual suffering, and with appropriate training and compassion, palliative care professionals can be responsive. While remaining cognisant of the need to respond to social and spiritual suffering, we focused the empirical analysis on SHS and the associated physical and psychological symptoms that can be remediated by an Essential Package within the rubric of a health system.

Although we identified and analysed a range of symptoms, the Commission devoted particular attention

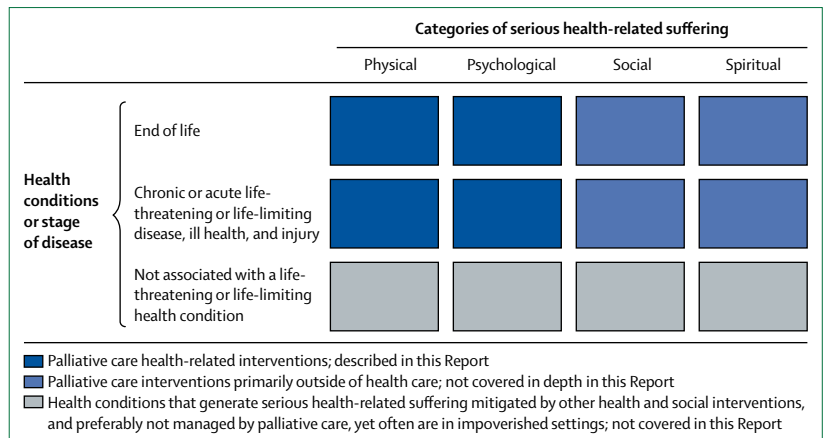


Figure 3: Serious health-related suffering, palliative care, and scope of this Report

to the lack of access to pain relief associated with end-of-life care and life-threatening and life-limiting health conditions because pain treatment is essential to palliative care, and lack of access is emblematic of the worst inequities in access to health care. We uphold that access to medicines for the relief of pain is a human right⁸²⁻⁸⁵ and strongly advocate for immediate-release oral morphine to be accessible in LMICs by prescription for patients with medical needs at all levels of the health system, including primary care.

We also recognise that non-medical use of opioids is a real and serious threat. The struggle between addressing the burden of suffering from pain and mitigating the harms that result from non-medical use of opioids is an intersection of two public health priorities.⁸⁶ Yet we uphold that there be no confusion with the basic objective of health, rights, and justice of ensuring access to palliative care and pain relief for all, including poor people. In keeping with international agreements and WHO recommendations, we promote and propose applying a balanced approach between maximising access to opioids for rational medical use and minimising risk of diversion and illicit use, and we emphasise this in our national and global health-system analysis and recommendations throughout the Report.^{5,6,12} The world needs such a balanced approach because both aims are essential elements of a high quality, just, effective, systemic public health strategy for palliative care and pain relief.

Lessons can be learned from the recent and devastating experiences with the opioid crisis in the USA that point to the importance of the balanced approach (panel 4, figure 4). The situation in most LMICs, where there is virtually no access to any kind of effective medicines to relieve moderate or severe pain, is dramatically and substantively different. Nevertheless, the opioid crisis in the USA shows that vigilance is necessary to achieve and maintain balance in each country's opioid policy as access expands.¹⁰⁰ The Commission also examined cases in other high-income and low-income countries where access to

Panel 4: Opioid analgesics in the USA

In many parts of the world, patients with a medical need for opioid analgesics find it almost impossible to access them, yet in the USA, Canada, and many other high-income countries, opioid analgesics are readily available.⁸⁷ The USA, however, is an outlier, not only for the availability of opioids but also because of extreme reliance on these medicines for treatment of acute and chronic pain, which might have contributed to their widespread non-medical use.^{88,89} Canada has also reported very high levels of consumption and has recently described, on a much smaller scale, a similar situation as the USA.⁹⁰

According to the US Centres for Diseases Control and Prevention, prescription opioid sales in the USA nearly quadrupled from 1999 to 2014.⁹¹ An estimated one out of five patients with non-cancer pain or pain-related diagnoses was prescribed opioids in office-based settings.⁹² Although the types of health issues that cause pain and require opioids do not vary much within the USA, opioid prescribing rates by health care providers vary a lot. Health-care providers in the highest prescribing states write almost three times more prescriptions for opioid analgesics than those in the lowest prescribing states.⁹³

As prescriptions of opioid analgesics increased in the USA, so did their non-medical use and incidence of accidental overdose.⁹⁴ In 2014, about 28 000 deaths—about 60% of all accidental overdose deaths in the country—were associated with the use of prescription or illegal opioids not intended for palliative care.⁹¹ Between 2000 and 2015, opioid-related overdose (both from prescription and illegal opioids) deaths increased 137% (figure 4).⁹³ Preliminary data from a subset of states in the USA suggests increases of almost 30% in opioid-related deaths from 2015 to 2016 associated with synthetic opioids.⁹⁵

The notable increase in the prescription of opioid analgesics coincides with the introduction in 1996 of OxyContin (a slow-release oxycodone) and intensive marketing of this medicine for chronic pain. This on-patent, expensive formulation became widely used. New research findings showed that opioid analgesics are not appropriate first-line medicines for many forms of non-malignant and chronic pain, yet the increase in levels of prescribing had already occurred. Claims around the safety of these medicines were based on new formulations erroneously assumed to deter non-medical use. Studies have shown a low risk of non-medical use and drug dependence among patients in palliative care.⁹⁶⁻⁹⁸ Hospital-based prescribing patterns after acute and perioperative pain management that were longer than necessary worsened the situation.⁹⁹

The crisis in the USA provides lessons on the need for maximising the benefits of opioids and minimising the risk of non-medical use as access to opioid analgesics is increased in a step-wise manner in LMICs. Countries should monitor the supply and marketing of opioids and implement strong conflict-of-interest policies to restrict undue influence of all for-profit entities in the tendering, procurement, and marketing of opioid medications and in describing indications for use and prescription of opioid medications. These policies must also guarantee training on safe use of opioid analgesics grounded in evidence-based protocols.¹⁰⁰

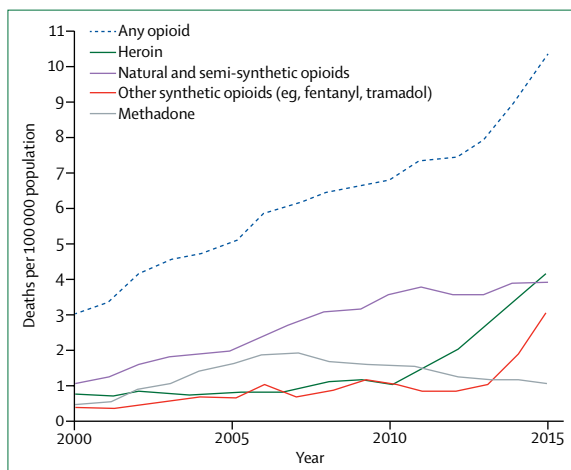


Figure 4: Deaths from opioids overdose, by type of opioid, in the USA, 2000-15
 Source: Centers for Disease Control and Prevention, National Center for Health Statistics (Underlying Cause of Death 1999-2015, CDC WONDER Online Database, December, 2016).

palliative care and opioid analgesics is high or has been expanding. We found no evidence that carefully increasing access to oral morphine for medical need, based on our proposed Essential Package, would increase the risk of

non-medical use if a balanced approach is implemented. Other high-income countries manage medical access to opioids with a balanced approach and without generating an epidemic of non-medical use, and these experiences provide additional lessons for LMICs.¹⁰¹ The experiences in Costa Rica, Kerala, and Uganda, although they have not been formally evaluated, also support this conclusion.⁹⁶

The Commission's work distinguishes between the health-care responsibilities associated with specialised palliative care and those that should be covered by other medical specialties and fields. In practice, however, it is not appropriate to implement an either-or model. Our estimates of the SHS burden take into account that much need can and should be managed by doctors whose expertise is not palliative care. Whereas specialised palliative care is sometimes necessary or highly preferred, much of the SHS burden can and should be remedied by other specialists, by generalist doctors and nurses with access to the necessary training, medicines, tools, and appropriate communication technologies, and with support from community health workers trained in palliative care. Hence, the Commission recommends competency-based training in primary palliative care of all general doctors and nurses.³⁷

The treatment and management of pain is a particularly important area of overlap with palliative care at all levels of care. Anaesthetists, surgeons, intensivists, or emergency doctors should manage postoperative, treatment-related, and serious acute pain, and pain specialists should manage serious acute pain and chronic, non-malignant pain. Yet in countries where these specialties are not available, it is morally and ethically unacceptable for any health professional to ignore a patient with moderate or severe pain of any kind that can be palliated. We recommend that training in pain treatment and in basic palliative care be a mandatory part of all curricula of health-care professions. General practitioners and nurses with appropriate training should be able to manage both pain that is associated with end-of-life or life-threatening illnesses and other sources of acute and chronic pain.

An example of an area where palliative care is not the recommended area of medicine for providing care is serious psychological suffering. Primary-care-level palliative care can manage many aspects of psychological suffering, but providers cannot be expected or trained to treat severe or chronic psychiatric disorders. Yet these psychiatric disorders generate suffering, and in LMICs, where specialist treatment is rarely accessible, doctors have to respond without specialised training in psychiatry. We do not include this SHS in our analysis, but we do recognise the drain on health-care professionals in low-resource settings and the importance of developing access to mental health professionals to care for patients and guide primary care providers.

In sum, health systems need to be strengthened through the integration of palliative care alongside prevention, early detection, treatment, and rehabilitation strategies to ensure that all patients have access to effective, efficient, and responsive care strategies and full information. The appropriate response to the global burden of untreated SHS is to expand access to effective palliative care and pain relief and to develop other components of UHC. This will ensure that an effective response to suffering is at the core of a people-centred approach to health systems.

Mandate and architecture of the report

The mandate of the Commission was to work across the palliative care and global health communities to measure global divides in access to palliative care and pain relief and to develop systemic solutions that also promote UHC, building on the 2014 WHA Resolution.⁴² The idea for the Commission came out of an international workshop organised by the Harvard Global Equity Initiative in April, 2014, under the auspices of the Radcliffe Institute for Advanced Study at Harvard University.¹⁰²

The Commission included 33 commissioners, a Chair, and a co-Chair with expertise in a wide range of key disciplines and occupations, including public health, palliative care specialty medicine, nursing, law,

Panel 5: Global burden of serious health-related suffering (SHS): key findings

- More than 61 million people experienced SHS in 2015, including 25.5 million people who died, which is 45% of the 56.2 million reported deaths worldwide
- Considering adults and children separately, almost half of adults (23.1 million) and a third of children aged 15 years or younger (almost 2.5 million) who died in 2015 experienced SHS
- Patients who live with SHS accrue at least 6 billion physical and psychological symptom-days annually and up to 21 billion days summing each symptom; almost 80% of these days are accumulated in low-income and middle-income countries (LMICs)
- In LMICs, of the more than 20 million deaths associated with SHS, a high proportion are caused by diseases and health conditions that could have been prevented or treated; more than 95% of all patients in need of palliative care and pain relief associated with HIV disease, premature birth or birth trauma, tuberculosis, and malnutrition live in LMICs
- More than 98% of children aged 15 years or younger who die with SHS live in LMICs; in high-income countries, children who experience SHS account for less than 1% of all deaths associated with SHS, compared with 12% in LMICs and more than 30% in low-income countries

economics, epidemiology, public policy, anthropology, and human rights. The work of the Commission was enhanced by a Scientific Advisory Committee and three Working Groups: Economic Evaluation, Models and Innovations, and Health Systems.

Our first meeting took place in New York, NY, USA, in September, 2014, to establish our mandate and programme of work. This was followed by two in-person meetings, first in Boston, MA, in May, 2015, to review interim findings and further delineate the scope of work, and then in Cuernavaca, Mexico, in August, 2016, to review results and agree on recommendations. Commission members also participated in monthly telephone meetings in 2015–17, and the working groups met several times in 2015 and 2016.

Our research and findings are based on group consultations and deliberations, analysis of publicly available data, new data that were generated and analysed by the Commission, a review of country experiences, and multiple literature searches. All new data and methods are described in detail in the additional online material.

The Economic Evaluation Working Group developed the methodology for measuring the burden of SHS, set forth an essential package of services focused on health, and produced cost estimates. The global burden of SHS is anchored in estimates of the number of patients with SHS and SHS days associated with the health conditions and symptoms that can be ameliorated by palliative care. Our proposed Essential Package is designed to relieve the most common and severe suffering related to illness or injury associated with the burden of SHS, to be cost-effective in LMICs, to help strengthen health systems, and to provide financial risk protection for patients and families. It is the minimum upon which expanded packages must be built in alignment with each country's level of income.

Panel 6: Measurement of the global burden of serious health-related suffering (SHS)

We identified the 20 health conditions from the 10th edition of the International Classification of Diseases that most commonly result either in death or in suffering that is severe enough to require a palliative care intervention for people of any age. To be included in the burden of SHS, a health condition must be either:

- 1 a major cause of death (according to WHO's 2015 Global Health Estimates mortality data) that typically causes moderate or severe physical and psychological suffering; or
- 2 a common cause of moderate or severe physical or psychological suffering associated with a high probability of mortality, especially in low-income and middle-income countries (LMICs), even when curative treatment is attempted (eg, drug-resistant tuberculosis, some haemorrhagic fevers such as Ebola virus disease, and some malignancies), from which the patient can recover (such as serious injury) or that can be controlled for many years (such as HIV disease, some malignant neoplasms, and some musculoskeletal disorders)

The 20 health conditions are: arthrosclerosis; cerebrovascular disease; chronic ischaemic heart diseases; congenital malformations; degeneration of the CNS; dementia; diseases of the liver; haemorrhagic fevers; HIV disease; inflammatory disease of the CNS; injury, poisoning, and external causes; leukaemia; lung diseases; malignant neoplasms (cancers); musculoskeletal disorders; non-ischaemic heart diseases; premature birth and birth trauma; protein energy malnutrition; renal failure; and tuberculosis. This list contains the most common health conditions¹³ and includes some health conditions that primarily or exclusively affect children. We produced estimates for all 20 health conditions for decedents. Because death from diabetes mellitus typically occurs suddenly without time to initiate palliative care, we included the specific health conditions resulting from diabetes that often generate a need for palliative care (cerebrovascular disease, renal failure, cardiomyopathy and heart failure, chronic ischaemic heart disease, and atherosclerosis).

Non-decedents are people with SHS related to each of the health conditions who are likely to die of that health condition in the following few years, whose condition could be curable, who could recover although will not be cured, or whose health condition could be controlled for many years. The health conditions for which, given available data and knowledge, we present non-decedent estimates are: congenital anomalies; cerebrovascular diseases; degenerative disease of the CNS; dementia; haemorrhagic fevers; HIV disease; inflammatory disease of the CNS; injury, poisoning, and external causes; malignant neoplasms; musculoskeletal disorder; and tuberculosis. Our mortality data are country-specific and come from the WHO Global Health Estimates for 2015. The 20 health

conditions that we include in our data account for 81% of deaths worldwide and 80% of deaths in LMICs, with a slightly lower proportion in low-income countries. For adults, these 20 health conditions account for 84% of total deaths worldwide, and for children younger than 15 years, they account for 60%.

We estimated the proportion of patients with SHS and the duration of symptoms. For each of the relevant health conditions, the panel first estimated the proportion of decedents and non-decedents with SHS. For some health conditions, such as HIV disease and drug-resistant tuberculosis, all decedents require palliative care because of the high prevalence of physical, psychological, and psychosocial suffering associated with dying from these diseases. For other health conditions, the estimate is a fraction of the total number of patients who die from the health condition.

We identified the most common and severe symptoms or types of suffering generated by these health conditions and categorised them as physical suffering (moderate or severe pain, mild pain, weakness, fatigue, shortness of breath, nausea and vomiting, constipation, diarrhoea, dry mouth, itching, and wounds and bleeding) and psychological suffering (anxiety and worry, depressed mood, delirium or confusion, and dementia referring to disorientation, agitation, or memory loss). Other symptoms were taken into account (eg, insomnia, cough, oedema, hiccups, ascites, and sweating), but because these are less common, often associated with or caused by one of the symptoms listed above, and can usually be managed with the items included in the Essential Package, we decided not to undertake a separate analysis.

We recognise that many patients have multiple health conditions (eg, cancer patients might also have lung or heart disease), so mortality data form the basis of all calculated estimates, and all types of suffering are counted in association with the health condition from which the patient died. For non-decedents, all types of suffering are counted in association with the health condition from which the patient is expected to die or with the health condition that generates the most salient type of suffering (eg, pain in a patient with an injury or burn).

From these data, we produced annual estimates, by health condition and symptom, of the burden of SHS measured by decedents who experience SHS each year, and the number of people living with one of the 20 health conditions (non-decedents) who experience SHS. We sum decedents and non-decedents to arrive at the total number of individuals with SHS per year.

We developed two indicators of the duration of SHS. The first measure, total number of days with any type of suffering, was estimated by summing the duration in days of each symptom.

(Continues on next page)

(Panel 6 continued from previous page)

This is a maximum upper bound in terms of time, and assumes that each day of each type of suffering is distinct. The second measure, number of days with the symptom of longest duration, is the minimum lower bound, and the burden of SHS in days is at least this high. The assumption is that multiple

symptoms overlap and that one day with multiple symptoms is the same as a day with a single symptom. We did not attempt to rank the symptoms by intensity or develop a composite measure of health-related suffering. We recommend this as an area for future research.

Additional detail is provided in the additional online material.

The Models and Innovations Working Group identified mainly small-scale projects, programmes, and approaches that offer global lessons for scale-up. In parallel, the Health Systems Working Group reviewed how health systems can integrate palliative care and, through in-depth country cases, identified models and lessons. This research provided guidance on how to integrate the Essential Package into health systems in LMICs as part of UHC, and on important pathways to expand national and global health-system capacity to progress towards the provision of an augmented and eventually ideal package of palliative care interventions.

The report has three sections. In section 1, we present findings from analyses of the SHS burden, in LMICs and worldwide. In section 2, we describe the medicines, equipment, human resources, and interventions that make up the Essential Package, and we present costing data for achieving universal access in LMICs. Because of the importance of pain relief, we analyse need and the severe inequities in the current distribution of opioids for medical use worldwide. Finally, in section 3 we address the national and global health system response required to achieve universal access to palliative care grounded in the proposed Essential Package, given the global burden of SHS. We identify a host of opportunities to increase access through health-system strengthening. The range of possible responses is grouped by health-system function, and we specifically consider stewardship, financing, delivery, resource generation policies, and the role of global actors.

Section 1. Global burden of SHS

The key findings of our analysis are summarised in panel 5.

Framework and methodology

The Commission presents a new conceptual framework for measuring the global burden of SHS. Suffering is health-related when it is associated with illness or injury of any kind. Suffering is serious when it cannot be relieved without medical intervention and when it compromises physical, social, or emotional functioning. Palliative care should be focused on relieving the SHS that is associated with life-limiting or life-threatening health conditions or the end of life.

The burden of SHS is a metric that can be used to measure the effectiveness of palliative care interventions.⁶⁸ The results of our analysis, and the supporting empirical work presented in this Report, provide a first

approximation of the physical and psychological burden of SHS because we took as our starting point any type of SHS, irrespective of whether the necessary intervention for remedying that suffering has been invented or is available in a given setting.

To date, the existing metrics used by health-system decision makers to prudently allocate scarce resources across competing priorities do not give sufficient weight to the benefits to patients, families, the health system, or economies of alleviating SHS. The symptoms associated with SHS might be additive, compound, or multiplicative components of sequelae that are used as standard measures and components of burden of disease.^{103–106} Although palliative care might increase the ability of patients to manage daily activities and occasionally extends life expectancy, palliative care interventions have independent value for patients in relation to SHS.^{73,107–111} A complete and robust measure of the burden of disease would account for suffering averted, with an appropriate weighting of duration, intensity, and value to the patient and family. Although challenging to convert into time, the final measure would be akin to a suffering-intensity-adjusted life-year (SALY), against which the efficacy of interventions could be evaluated.

SALYs should first be explored as an adaptation of existing measures of burden of disease. Intense suffering can be described in terms of quality-adjusted life-years (QALYs) as a poor health state for which the associated low quality of life is amenable to improvement through effective palliative care. Incorporating SALYs into QALYs would give a more comprehensive measure for use in economic evaluations when allocating resources across prevention, treatment, and palliation and especially when comparing interventions to alleviate suffering at the end of life, when preserving dignity and providing comfort are crucial, with other types of health interventions.

As a complement to developing SALYs as a measure, we recommend a major initiative to generate data on disease-specific suffering and a clinical focus-group-led analysis to elicit patient preferences and values in relation to suffering and dignity in a variety of cultural contexts, which are important to providing people-centred health care.¹¹²

Our empirical results constitute a first approximation of burden of SHS. Our goal was accuracy within an order of magnitude rather than a robust set of point estimates. We recognised that measures of duration are even more challenging to develop than measures of patient numbers

	Total deaths (thousands)			Deaths due to health conditions most associated with SHS (thousands)			Deaths associated with SHS							
	All age groups	≥15 years	<15 years	All age groups	≥15 years	<15 years	All age groups		≥15 years		<15 years			
							n	Percentage of total deaths	n	Percentage of total deaths	Percentage of total deaths in age group	n	Percentage of total deaths	Percentage of total deaths in age group
Low-income and middle-income countries	46 410	39 204	7 205	37 002	32 732	4 269	20 635	44%	18 206	39%	46%	2 429	5%	34%
Low income	5 458	3 336	2 122	3 625	2 459	1 166	2 150	39%	1 490	27%	45%	661	12%	31%
Lower-middle income	21 927	17 719	4 208	16 618	14 118	2 499	9 063	41%	7 634	35%	43%	1 429	7%	34%
Upper-middle income	19 025	18 150	8 75	16 759	16 155	604	9 422	50%	9 083	48%	50%	340	2%	39%
High-income countries	9 819	9 735	85	8 508	8 441	67	4 919	50%	4 880	50%	50%	39	<1%	46%
Total	56 229	48 939	7 290	45 510	41 173	4 337	25 554	45%	23 086	41%	47%	2 468	4%	34%

Table 1: Mortality associated with serious health-related suffering (SHS), by income region and age groups

Panel 7: Global burden of serious health-related suffering (SHS) in children

Our data indicate that more than 5·3 million children aged 15 years or younger experience SHS worldwide. These children account for 9% of patients who experience SHS, 5% of total days with SHS days, and 6% of days in pain. In low-income countries, children make up a much larger proportion of patients who experience SHS (21%) and days with SHS (14%) than in high-income countries, where children account for less than 1% of patients with SHS and days with SHS (additional online material).

In the case of children, it is important to consider both the key health conditions associated with paediatric SHS and the age distribution of people affected by SHS for each health condition. Worldwide, the burden of SHS in children is primarily associated with HIV disease (40%), premature birth and birth trauma (20%), and congenital malformations (more than 10%). In low-income countries, more than 50% of the burden of paediatric SHS is associated with HIV disease. Considering the distribution of SHS between adults and children, in low-income and middle-income countries (LMICs), children account for almost 70% of people affected by SHS associated with inflammatory disease of the CNS, about half of people with SHS associated with malnutrition and haemorrhagic fever, and about 10–20% of people with SHS associated with injury, leukaemia, and HIV disease. In low-income countries, children account for substantial proportions of people affected by SHS associated with malnutrition (almost 80%), inflammatory diseases of CNS (almost 75%), haemorrhagic fever (more than 60%), and injuries (more than 30%; additional online material).

Children and their families have specific and intensive palliative care needs that can easily be overlooked because the absolute number of paediatric patients is low compared with adults.¹³ The Commission stresses that access to paediatric palliative care is imperative everywhere, including and especially in LMICs because of the concentration of cases.

Although analysing the burden of SHS specific to children was beyond the scope of the Commission, we include children in our estimates both by using all-age mortality data and by including health conditions that are exclusively or primarily paediatric. Our estimates of non-decedent children with SHS are limited. We did not undertake a full analysis of life-threatening and life-limiting health conditions in children, and it was beyond the scope of the Commission to project long-term survivorship. Thus, our estimates of non-decedent children are based on lower bound, conservative estimates.¹⁴ We recommend that future global efforts to develop a metric of SHS especially in primary data collection include a specific focus on children and their needs for palliative care and pain relief.

and that no previous attempts to develop such measures have been made on a global scale. We therefore present two summary indicators, one with a lower and another with an upper bound on duration.

We developed and analysed data on the number of patients with SHS and the number of days of SHS associated with the serious, complex, and life-threatening health conditions that generate most of the global need for palliative care. We estimated the annual SHS burden of decedents and, for a subset of the health conditions, non-decedents. Our framework and calculations go beyond previous work by including 11 physical and four psychological symptoms (panel 6, additional online material).

We identified 20 health conditions and reviewed SHS for each health condition individually for each symptom. Although challenging, this was essential because neither cancer nor HIV are tracer conditions, although they do explain the largest proportion of the SHS burden. We also sought to bring attention to health conditions other than cancer and HIV that have been neglected within palliative care and around which advocacy is generally weak.

Estimates of the global burden of SHS

We estimate that more than 25·5 million of the 56·2 million people who died in 2015, experienced SHS associated with one of the 20 health conditions included in our analysis. About 46·4 million deaths occurred in LMICs, and 20·6 million (45%) of these deaths were associated with SHS. The SHS-associated deaths in LMICs account for 81% of all SHS-associated deaths worldwide.

Almost half of adults who die—23·1 million in 2015—experience SHS (table 1). In the case of children aged 15 years or younger, almost a third of those who die experience SHS, which amounted to 2·5 million children in 2015. Worldwide, considering the 20 health conditions

Panel 8: Previous estimates of the need for palliative care and the burden of serious health-related suffering (SHS)

Our conceptual and measurement framework for quantifying the global burden of SHS builds on earlier work by considering several types of suffering for a series of health conditions. Previous estimates of the need for palliative care focused on cancer and HIV disease, including the Disease Control Priorities (DCP, 2nd edn), and were based on measures of suffering exclusively in terms of pain days at end of life.¹¹⁵ This provided the foundation for later studies and the work presented in this Report, which extends to a broad range of health conditions.^{113,114}

Expert opinion and data from country experiences from several low-income countries suggest that about 80% of people dying from cancer and 50% of people dying from HIV/AIDS experience moderate or severe pain lasting on average 90 days. These proportions were widely applied to develop estimates of the need for pain relief for patients in low-income and middle-income countries (LMICs). The DCP (3rd edn) cancer volume uses these estimates to project that in 2012, about 425 million days of cancer pain could have been relieved with effective access to opioids in LMICs.¹¹⁶

In the Global Atlas of Palliative Care at the End of Life,¹¹³ WHO and the Worldwide Hospice Palliative Care Alliance estimated that in 2011, 20.4 million people who died required palliative care. This number is then doubled based on the assumption that about the same number of people need palliative care for reasons other than pain and for longer periods of time, giving a total of 40 million people in need of palliative care every year.¹¹⁷ This very rough estimate has been widely circulated as the total need for palliative care worldwide.¹¹⁸

included in our analysis of SHS, adults account for 90% of deaths associated with SHS. Yet the proportion of children who die with SHS as a proportion of overall SHS-related deaths is inversely related to country income. In high-income countries, children who die with SHS account for less than 1% of all deaths, compared with 12% of deaths in LMICs and more than 30% of deaths in low-income countries (panel 7).

Our estimates suggest that in 2015, 35.5 million people experienced SHS although they did not die. Summing decedents and non-decedents, at least 61.1 million people experienced SHS in 2015, and 50.5 million (80%) of these people lived in LMICs.

This estimate of people with SHS exceeds previous estimates¹¹³ of people in need of palliative care by slightly more than 21 million (panel 8). Our calculation of decedents also exceeds previous estimates of 20 million people in need of palliative care by more than 5 million people.¹¹³ Our estimate is higher than previous estimates because we include a broader list of health conditions, consider 15 types of suffering rather than only pain prevalence, and include non-decedents. In the case of children, our estimates of decedents with

Panel 9: Caregiver support, bereavement, and complicated grief¹¹⁹

There are various concerns related to family caregivers that require specific analysis and intervention. Family caregivers typically provide many hours of care, inside and outside of hospitals and homes, and often accompany the patient to clinic visits. Caregiving might include washing and feeding the patient, purchasing and administering medicines, helping with toileting, and providing emotional support. This caregiving might be required up to 24 h a day and usually creates a major financial risk for families.¹²⁰ Caregivers often must withdraw from work, school, or child care. Caregiving can also put the health of the caregiver at risk,¹²¹⁻¹²³ and family members may experience serious physical, psychological, social or spiritual suffering, and might also need palliative care.¹²⁴ The burden of caregiving typically falls on women, including girls, and exacerbates gender inequity.^{125,126}

Family caregivers, along with other family members, are at risk for complicated grief after a patient's death.¹²⁷ In high-income countries, complicated grief appears to occur in 7% of bereaved persons, although there is little data on the exact number of people per decedent.¹²⁸ The Commission was unable to undertake detailed estimates of the suffering and needs of caregivers other than an order-of-magnitude calculation of complicated grief. Assuming that complicated grief is associated with only 7% of deaths, the minimum number of people who suffer complicated grief is 1.8 million, of which more than 80% live in LMICs. If each individual experienced 90 days of complicated grief, this sums to just more than 160 million suffering days per year. This assumes that only one person per family is affected, yet multiple family members are often severely affected.

We believe that complicated grief of a family member should be included as a type of psychological suffering to which palliative care providers should and can often attend and the Essential Package includes one bereavement visit for each death. Palliative care can include providing informal emotional, social, or spiritual support to family members without establishing formal patient-clinician relationships and community health workers can be particularly important providers of emotional and social support to caregivers.

In recognition that caregiving for patients with serious, complex, or life-limiting health problems can cause or exacerbate poverty for the caregiver, we also recommend including family caregivers in social supports as a complement to the Essential Package of palliative care health interventions.

SHS is also higher than previously estimated (2.5 million deaths compared with 1.2 million deaths),¹¹³ and this is probably also because we consider a broad list of health conditions. Our projection of the total need for palliative care by child decedents and non-decedents is more closely aligned to recent literature. We estimate that more than 5.3 million children aged 15 years or younger lived with SHS in 2015. Data from 2010 and for a larger group of children aged 0–19 years suggests that about 8.1 million lived with SHS.¹¹⁴

Summing the duration of all symptoms provides an upper bound estimate of 21.2 billion SHS days per year for all patients worldwide. Using the upper bound estimate, LMICs accrue 16.9 billion SHS days per year, accounting for 80% of total SHS days worldwide. The duration of SHS is much lower when using the lower bound estimate, but more than 6 billion days worldwide is still a considerable amount, of which 5.1 billion days occurred in LMICs. These data do not include the SHS of family members and caregivers (panel 9).

	Rank	Percentage of patients (n=20.6 million)	All symptoms		Physical symptoms		Psychological symptoms	
			Percentage of total number of days (n=9145 million)	Percentage of minimum number of days (n=2473 million)	Percentage of total number of days (n=7193 million)	Percentage of minimum number of days (n=2378 million)	Percentage of total number of days (n=1952 million)	Percentage of minimum number of days (n=1054 million)
Malignant neoplasms	1	26%	47%	45%	50%	46%	36%	36%
Cerebrovascular disease	2	17%	11%	12%	12%	12%	7%	9%
Lung disease	3	11%	9%	11%	8%	11%	12%	12%
Injuries	4	6%	0	1%	0	1%	1%	1%
Tuberculosis	5	6%	6%	6%	4%	4%	10%	9%
Premature birth and trauma	6	5%	0	0	0	0	0	0
HIV	7	5%	12%	8%	11%	8%	12%	12%
Liver disease	8	5%	3%	3%	3%	3%	2%	1%
Non-ischaemic heart disease	9	4%	3%	3%	3%	3%	4%	4%
Dementia	10	3%	4%	4%	3%	3%	10%	10%
All other SHS conditions		11%	5%	8%	5%	8%	6%	6%

Table 2: Distribution of decedent serious health-related suffering (SHS) in low-income and middle-income countries, by patients and physical and psychological symptom days (ranked by number of patients)

	Rank	Percentage of patients (n=25.6 million)	All symptoms		Physical symptoms		Psychological symptoms	
			Percentage of total number of days (n=11902 million)	Percentage of minimum number of days (n=3231 million)	Percentage of total number of days (n=9349 million)	Percentage of minimum number of days (n=3105 million)	Percentage of total number of days (n=2553 million)	Percentage of minimum number of days (n=1376 million)
Malignant neoplasms	1	30%	51%	49%	54%	51%	39%	39%
Cerebrovascular disease	2	16%	10%	10%	11%	11%	6%	8%
Lung disease	3	11%	8%	10%	7%	10%	11%	11%
Injuries	4	6%	0	1%	0	1%	1%	1%
Tuberculosis	5	5%	4%	5%	3%	3%	8%	7%
Dementia	6	5%	6%	6%	4%	4%	13%	13%
Liver disease	7	5%	2%	3%	3%	3%	2%	1%
Premature birth and trauma	8	4%	0	0	0	0	0	0
HIV	9	4%	9%	6%	9%	6%	10%	9%
Non-ischaemic heart disease	10	4%	3%	3%	3%	3%	3%	4%
All other SHS conditions		11%	6%	8%	6%	9%	7%	7%

Table 3: Distribution of decedent serious health-related suffering (SHS) worldwide, by patients and physical and psychological symptom days (ranked by number of patients)

Health conditions associated with the burden of SHS

In 2015, LMICs accounted for 84% of the world's population and approximately the same proportion of patients with SHS.¹²⁹ For certain health conditions, such as HIV disease, premature birth and birth trauma, tuberculosis, congenital malformations, malnutrition, and inflammatory disease of the CNS, most SHS occurs in LMICs. LMICs have a lower proportion of patients

with SHS associated with non-communicable diseases, such as malignant neoplasm and dementia, as compared to worldwide. Injuries account for more than 5% of patients.

In LMICs, the ten health conditions that cause the highest numbers of patients in need of palliative care account for more than 90% of the 20.6 million people who die with SHS (table 2). The same ten health

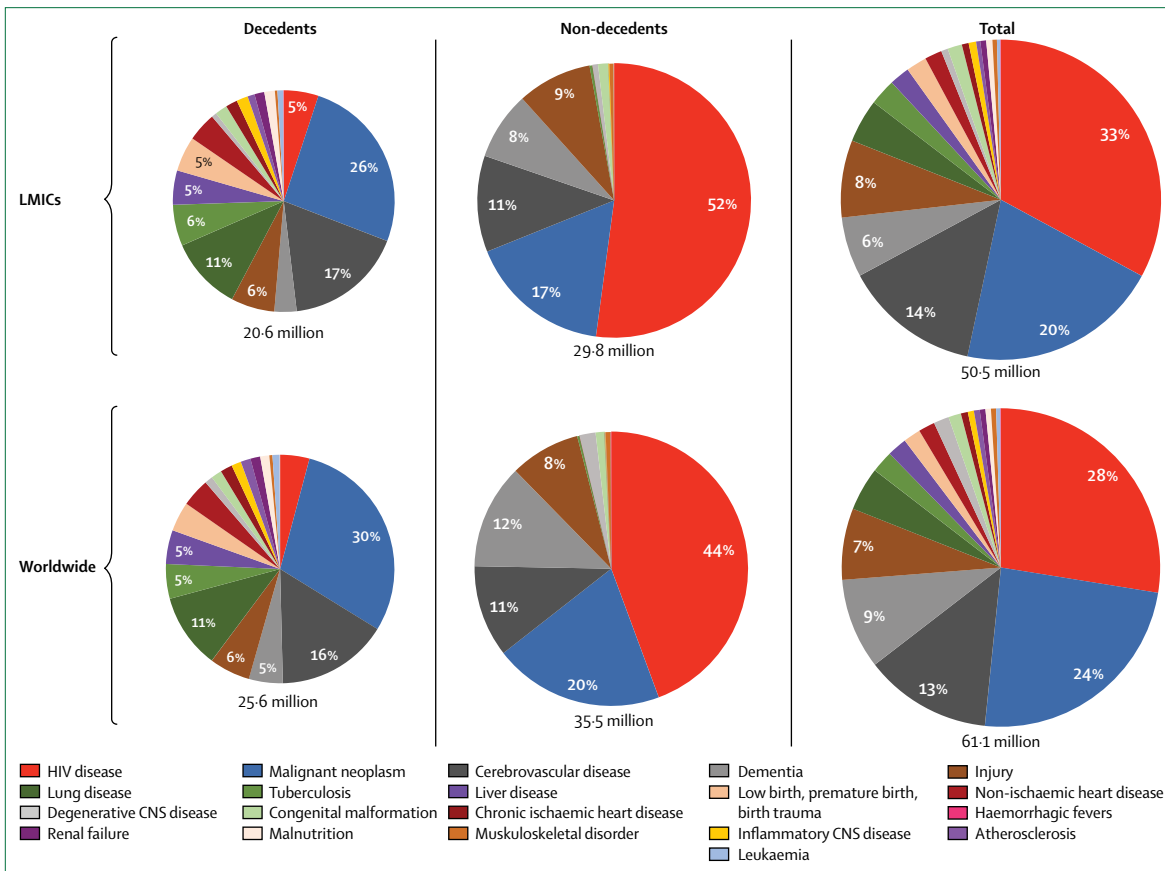


Figure 5: Distribution of people in low-income and middle-income countries (LMICs) and worldwide who experienced serious health-related suffering, by health condition, 2015
Source: WHO Global Health Estimates 2015.

conditions rank similarly worldwide (table 3), but the percentage of patients with dementia is higher and the percentage of patients with HIV is lower than in LMICs because of the high prevalence of dementia in high-income countries and of HIV in LMICs (figure 5).

We also present the burden of SHS in symptom days (figure 6). Decedents with SHS in LMICs accrue a total of 9.1 billion SHS days using the upper bound indicator of the total sum of symptoms, or 2.5 billion days using the lower bound estimate (table 2). Malignant neoplasms account for almost 50% of SHS days using either indicator, followed by HIV, cerebrovascular disease, and lung disease at about 10%. Injuries account for a much larger proportion of patients with SHS than SHS days, whereas the opposite is true for malignant neoplasms and HIV. For physical symptoms, the distributions are very similar, but for psychological symptoms, decedents with malignant neoplasms accrue 36% of SHS days, and decedents with tuberculosis, dementia, HIV, cerebrovascular disease, and lung disease about 10% of SHS days. The ten health conditions that cause the highest numbers of patients in need of palliative care (table 2) account for about 95% of SHS days in LMICs.

Palliative care is only to provide care for those that are terminally sick to feel comfortable. Because, in most cases, we know that the person is not going to be cured... among those who seek palliative care from our program, 50% of them suffer from some sort of cancer, and nearly 40% of them have suffered from stroke... a good number of them lose hope of coming back. So, what is important is that you provide care to the person so they feel comfortable at home, and he or she feels that he or she is not alone.¹³⁰

Quotes from communities in Kerala, India

Symptoms associated with the global burden of SHS

Physical symptoms account for about 70% of total SHS days by decedents and non-decedents, almost 80% of days for decedents, and 60% of days for non-decedents. The data are similar for LMIC and worldwide. The higher proportion of psychological suffering in non-decedents is because of the high number of people living with dementia (figure 6).

Pain (both chronic, mild pain and moderate to severe pain) is the most common symptom in our data, accounting for more than 20% of total SHS days and almost a third of physical symptom days in LMICs and

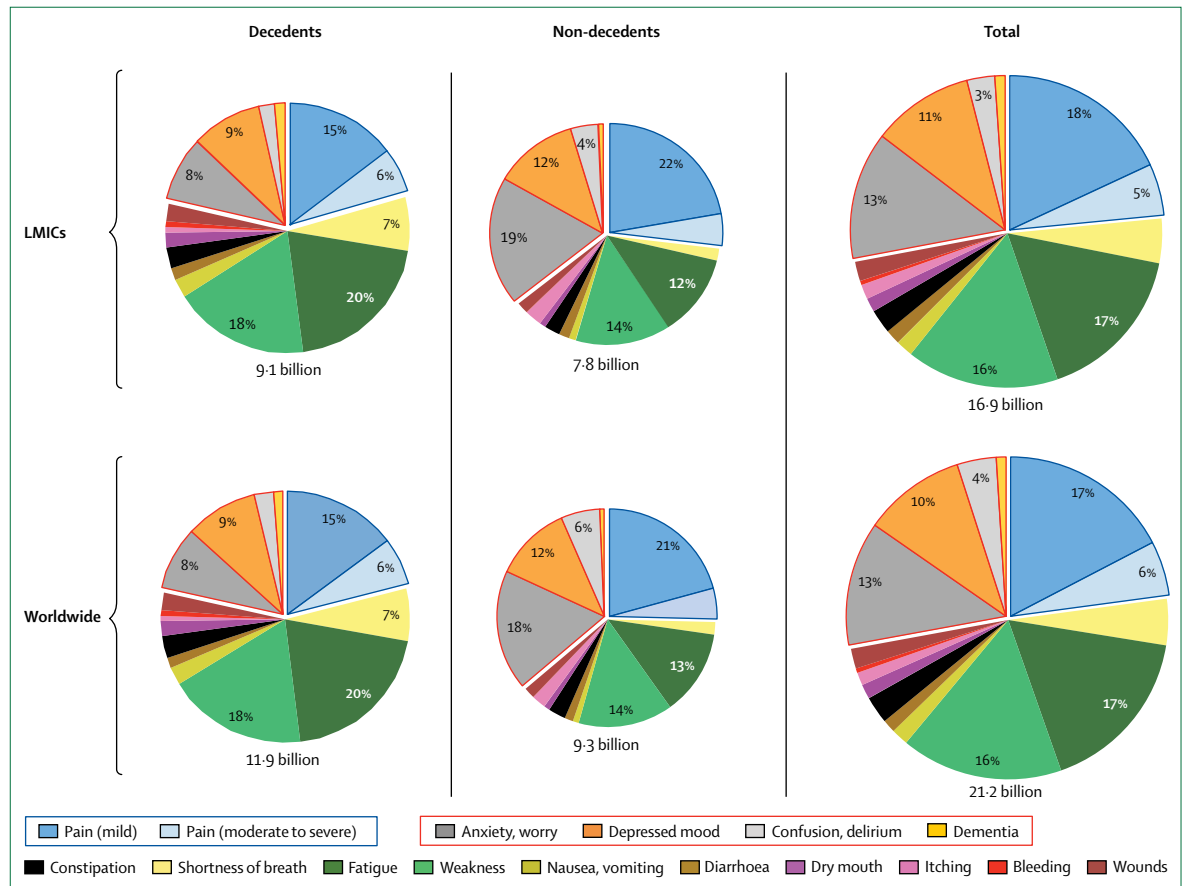


Figure 6: Distribution of days that people in low-income and middle-income countries (LMICs) and worldwide experience serious health-related suffering, 2015
Source: WHO Global Health Estimates 2015.

worldwide, for decedents and non-decedents. Chronic, mild pain is about three times more common than moderate to severe pain. Fatigue and weakness each explain 15–20% of total SHS days in LMICs and worldwide, with lower prevalence among non-decedents. Dyspnoea is most common in decedents and accounts for about 7% of SHS days globally and in LMICs (figure 6).

Anxiety or worry, and depressed mood account for more than half of psychological symptom days for both decedents and non-decedents, both in LMICs and worldwide (figure 6). However, worry and depressed mood explain a larger proportion of SHS days for non-decedents. The estimates are similar in LMICs and worldwide, although they differ between decedents and non-decedents.

The distribution of symptoms is relatively similar across countries, income groups, and decedent versus non-decedent patients, with a few notable exceptions. Non-decedents have more pain and less fatigue and dyspnoea, especially in low-income countries where the proportion of non-decedent patients with HIV disease is high. LMICs account for most (73–94%) of the total symptom days for all symptoms except confusion and

delirium, the prevalence of which is much higher in non-decedents in high-income countries where the dementia burden is high.

There is substantial variation in the distribution, by health condition, of the proportion of decedents and non-decedents and of symptoms across SHS days (figure 7; additional online material). Most patients with HIV disease who experience SHS are non-decedents, and pain and anxiety or worry are the most common types of suffering. About half of patients with cancer are non-decedents, and pain, fatigue, and weakness are particularly common. Pain also accounts for substantial proportions of SHS in patients with congenital malformation, musculoskeletal disorder, injury, atherosclerosis, low birthweight and birth trauma, ischaemic heart disease, HIV, and liver diseases. Non-decedents account for most dementia patients with SHS in general, and with confusion or delirium specifically. Dyspnoea is most common in patients with lung disease but also accounts for a large proportion of suffering days in patients with low birthweight and birth trauma (40%), congenital malformation (27%), malnutrition (24%), and non-ischaemic heart disease (20%).

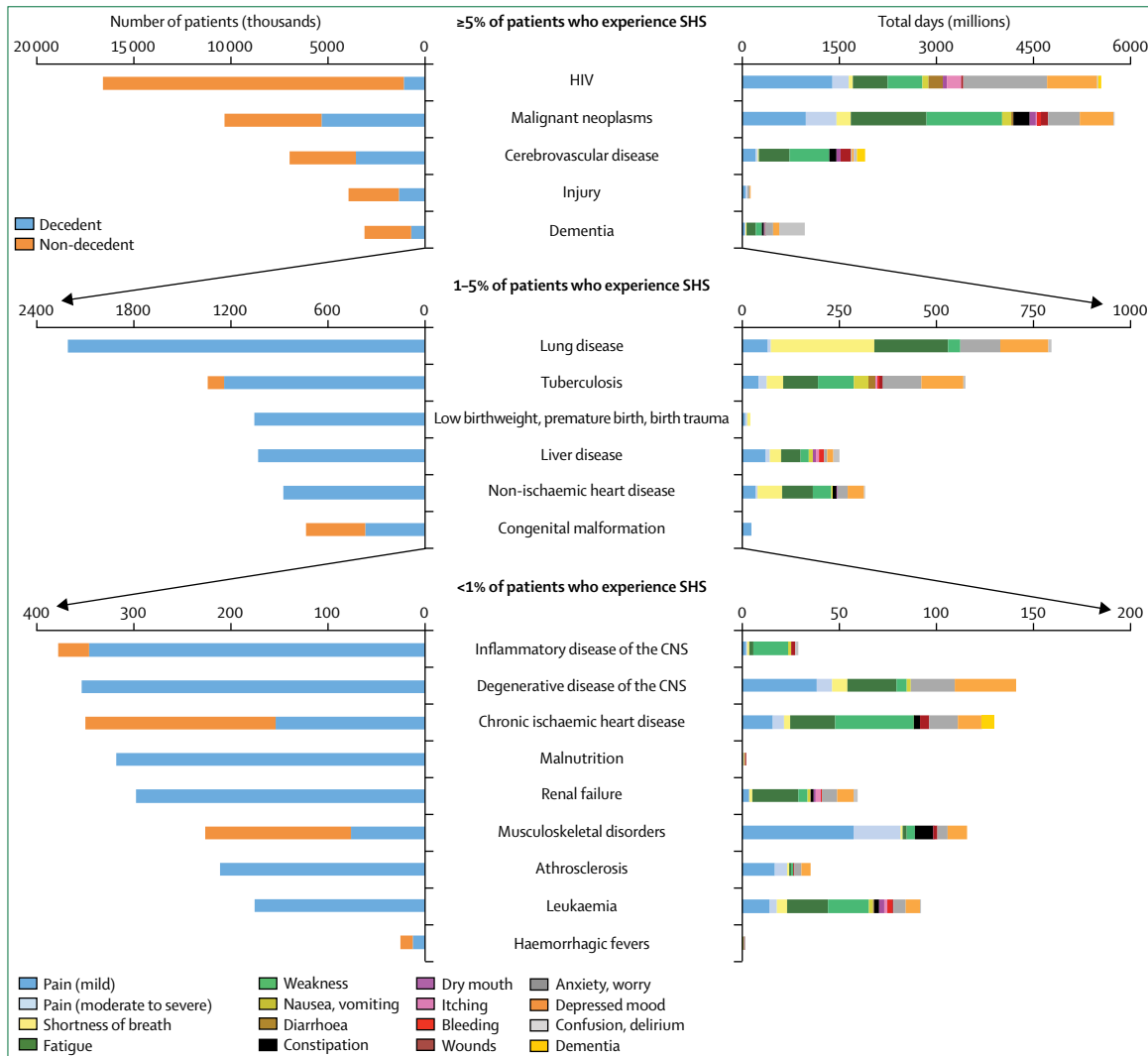


Figure 7: Decedents, non-decedents, and days with serious health-related suffering (SHS) in low-income and middle-income countries, by symptom, ordered and grouped by health condition and by total number of patients with each health condition
 The left side of the figure shows the number of decedents and non-decedents who experience SHS. The right side of the figure shows the days of each type of suffering associated with each condition. The health conditions are ranked by the number of people who experience SHS by grouping them into three categories (5% or more, 1–5%, and less than 1%) using a scale specific to each group. Source: WHO Global Health Estimates 2015.

Avoidable mortality and the dynamics of the burden of SHS

The results by health condition and income region are driven largely by the underlying mortality data and show the effect of epidemiological transition on SHS. As the burden of chronic diseases and non-communicable diseases increases in LMICs, SHS related to these health conditions also increases. Yet for health conditions associated with infection, poverty, or other social determinants of health, the SHS burden is high because the health system fails to guarantee access to preventive services or life-saving health interventions and treatment.

Palliative care cannot be a substitute for improving access to the public health interventions and treatment

that would prevent suffering and premature death in the first place. Efforts to make palliative care more accessible must rather be accompanied by efforts to make illness prevention, diagnosis, and treatment more accessible and to integrate palliative care into overall health services.

According to our estimates, more than half of SHS in decedents is associated with avoidable, premature deaths. Almost all deaths and palliative care needs in patients with tuberculosis, HIV, inflammatory disease of CNS, low birthweight, or protein malnutrition in LMICs are avoidable. The percentage of avoidable deaths is much lower for chronic diseases and non-communicable diseases such as cancer, dementia, and atherosclerosis (panel 10, table 4).

Panel 10: Avoidable and premature deaths associated with serious health-related suffering (SHS)

The concept of premature death or avoidable mortality has been introduced and applied in previous studies and is defined as the “deaths that should not occur in the presence of effective and timely health care”.¹³¹ WHO defines death as premature if it occurs before age 70 years. Estimating the SHS associated with avoidable mortality makes it possible to identify the palliative care need generated by underperforming health systems, which is different from SHS that cannot be prevented but can be remediated.

We defined avoidable mortality as the number of deaths that can be averted if a specified best-case scenario were to occur in a group of countries. We consider in our analysis the median age-specific mortality in each age group of all high-income countries as the best-case scenario. We calculated the number of avoidable deaths from the 20 health conditions included in the analysis of SHS.

We calculated both the number of avoidable deaths from the 20 health conditions and the number of avoidable deaths associated with SHS. The age group of 70 years and older was excluded from the analysis because we assumed that none of these deaths are avoidable. We also calculated avoidable deaths and those associated with SHS in children aged 15 years and younger.

Our data on avoidable deaths from the 20 health conditions (table 3) show that in 2015, avoidable deaths totalled 2.3 million in low-income countries (80% of total deaths from these health conditions), 7.6 million (70%) in lower-middle-income countries, and 3.7 million (48%) in upper-middle-income countries. Infectious diseases and health conditions associated with poverty have the highest percentage of deaths that are avoidable; the percentage is greater than 95% for tuberculosis, HIV, inflammatory diseases of CNS, and malnutrition. The proportion of child deaths that can be considered avoidable is particularly high. This is because, in high-income countries, the survival for children with diseases like cancer is high¹³² and the mortality from poverty-associated, preventable health

conditions and infections is low. Overall in LMICs, 4.3 million children die from the 20 health conditions, and 3.8 million (88%) of these deaths are avoidable, compared with 1.1 million (93%) children in low-income countries, 2.2 million (89%) children in lower-middle-income countries, and 0.4 million (73%) children in upper-middle-income countries. We also found that for several non-communicable diseases such as cancer, dementia, and atherosclerosis, age-specific mortality rates are lower in many LMICs than in high-income countries, a finding that highlights that LMICs are likely to see increasing demand for palliative care as their burden of non-communicable diseases increases.

Our data on avoidable deaths associated with SHS show that 7.7 million such cases in LMICs are avoidable, which corresponds to 63% of the total, annual number of decedents with SHS. In low-income countries, 1.4 million avoidable deaths are associated with SHS, corresponding to 81% of total deaths, compared with 4.2 million in lower-middle-income countries (69% of total deaths), and 2.0 million in upper-middle-income countries (46% of total deaths). Across health conditions, a substantial proportion of avoidable deaths associated with SHS (10% or more) is from each of cerebrovascular disease, HIV disease, tuberculosis, premature birth and birth trauma, and injury, because the mortality associated with these health conditions while low in wealthy countries is high in poor countries.

The proportion of child decedents with SHS is also substantial. If LMICs were to have the same age-specific mortality as the median mortality of high-income countries, 2.1 million of the 2.4 million child deaths with SHS could be avoided. For low-income countries, more than 90% of child deaths associated with SHS are avoidable, almost 90% are avoidable in lower-middle-income countries, and more than 70% in upper-middle-income countries.

See additional online material for more detailed analysis.

Stronger health systems and more attention to the social determinants of health would prevent many deaths in LMICs, many of which are associated with SHS and generate a need for palliative care. By contrast, the burden of chronic illness and non-communicable diseases will increase as part of epidemiological transition. These diseases will generate a substantial need for palliative care and will, with time, offset and indeed likely exceed any reduction in the number of poor patients needing palliative care associated with infectious diseases and poverty.

Health systems can and should be strengthened through the incorporation of prevention, treatment, survivorship, and palliative care, using integrated care pathways, especially in LMICs (the systemic analogue of the integration pathway for individual patients presented in figure 2B). Integrating palliative care into

a health system and expanding coverage should allow for flexibility and fluid integration of disease management and palliative care from the point of diagnosis, in ways that do not prevent patients from accessing treatment or curative care. This is particularly important for health systems in LMICs that need to strive to reduce premature deaths through prevention, early diagnosis, and disease-modifying treatment while increasing access to palliative care for people undergoing treatment and for those who might or will die despite access to both.

Data limitations and considerations

Because of the dearth of reliable empirical data on the types, prevalence, and duration of suffering related to most of the 20 health conditions, we relied heavily on expert opinion. We know of no valid way to rank types

	Total deaths	Avoidable mortality using HIC median* (thousands)	Avoidable mortality using the country income group best case (thousands)	Total deaths with SHS	Avoidable SHS burden (decedents) using HIC median (thousands)	Avoidable SHS burden (decedents) using the income group's best (thousands)
All age groups—LMIC total	21242	13558 (64%)	15285 (72%)	12233	7656 (63%)	8850 (72%)
Low-income countries	2814	2265 (80%)	1899 (67%)	1699	1383 (81%)	1216 (72%)
Lower-middle-income countries	10827	7614 (70%)	8273 (76%)	6116	4229 (69%)	4629 (76%)
Upper-middle-income countries	7601	3680 (48%)	5112 (67%)	4417	2043 (46%)	3006 (68%)

HIC=high-income country. LMIC=low-income and middle-income country. *Not counting negative numbers.

Table 4: Avoidable overall mortality and avoidable deaths associated with serious health-related suffering (SHS) in low-income and middle-income countries (LMICs)

of suffering by tolerability and did not attempt to do so. We also did not specifically differentiate between children, adolescents, adults, or elderly adults. Social and spiritual suffering are not included in our estimates of the total burden of SHS because resources for primary data collection are limited and no measures exist.

The estimates also have limitations, and we consider them to be first approximations to the burden of SHS. In our data, mortality rates are the only source of variation between populations groups. Furthermore, SHS is not limited to the 20 health conditions we analysed. Although any one of these health conditions is unlikely to individually produce a large amount of days of SHS at a national, regional, or global level, taken together, they would somewhat increase the total burden of SHS. In the case of children, however, the excluded health conditions could be more important. Finally, in the absence of data on prevalence and survivorship for many health conditions, especially in LMICs, we estimated non-decedent SHS only for the health conditions that we believe produce the greatest need for palliative care worldwide, for which data are available, and only for the short term.

The burden of SHS is not completely coincident with the need for palliative care since several health conditions include cases, especially in non-decedents, that are not life-threatening or that can and should be managed by other specialists, such as HIV or intensive care specialists who have been trained in pain treatment. Furthermore, some health conditions should ideally be managed outside the realm of palliative care (eg, injuries and musculoskeletal disorder), and these together account for less than 6% of deaths (1.6 million of the 25.5 million deaths) and 1% of SHS days in 2015. For non-decedents, injuries and musculoskeletal disorders account for 8% of deaths (3.2 million deaths of the 41.1 million deaths) and 2% of SHS days.

For the health conditions for which we were unable to identify estimates of people living with disease

(haemorrhagic fever, tetanus, congenital malformations, musculoskeletal disorders, and injuries), we developed estimates of non-decedent need for palliative care as a multiple of number of deaths (additional online material). These five health conditions account for 9% of non-decedent patients (3.6 million of 41.1 million patients) and 2% of non-decedent SHS days.

We analysed the burden of SHS that is not equivalent to the palliative care that is needed or received by the patient. Further analysis should be undertaken on both the total number of days a patient would need palliative care and the total number of days the patient is receiving care. This is especially salient for our analysis of HIV disease. The large number of people living with HIV disease—due, in part, to the success of antiretroviral therapy (ART)—is resulting in a large proportion of the non-decedent and overall SHS, especially in LMICs.³⁹ However, the palliative care needed by people living with HIV disease, which can often extend life for years, is typically of low intensity, meaning that patients might need palliative care from a nurse or doctor less than once per week or even once per month. Thus, the number of days during which these patients are merely being monitored by a palliative care provider each year might be very high (and similar to the number of SHS days), yet the number of days in which they receive palliative care could be very low and often provided by HIV treatment providers rather than palliative care specialists.

Assessing the need for palliative care by patients living with HIV is complex and evolving with new discoveries, increasing access to treatment in LMICs, and the ageing of these populations. Much of this need can and should be satisfied by low-intensity palliative care provided by primary doctors and HIV specialists with appropriate, competency-based training, rather than by specialist palliative care doctors. Our palliative care expert group considered that, on average, 50% of all people living with HIV have SHS and need palliative care. Among the estimated 36.7 million people living

Panel 11: Providing palliative care and pain relief during the Ebola epidemic and the Haiti earthquake: a false dichotomy between survival and comfort during humanitarian emergencies and crises

The 2014–15 Ebola epidemic and the 2010 Haiti earthquake underscore the importance of palliative care in the response to humanitarian emergencies and crises and the false dichotomy between the need for life-saving treatment and need for palliative care. The Ebola epidemic affected 28 646 people and killed 11 323 people.¹⁴⁴ Despite being an acute humanitarian crisis, this epidemic affected countless communities during the course of 2 years.

The response was defined by severe constraints on human and physical resources, further worsened by fear and by the limitations of personal protective equipment and time spent at the patient's bedside.¹⁴⁵ Clinical symptoms of Ebola include nausea, vomiting, diarrhoea, body aches, and, in late stages, bleeding, respiratory distress, and encephalopathy.^{146,147} Palliative therapy focused on management of symptoms such as nausea and vomiting, which not only improve patient comfort but help maintain patient fluid volume and thereby improve chances of survival.^{148,149} Opioids such as morphine typically were available only in small amounts in Ebola treatment units or not at all.^{150–152}

The non-pharmacological palliative needs (feelings of isolation, fear, and grief) of patients and family members were underreported. People with suspected Ebola virus infection were subject to dehumanising separation from family and friends in west Africa, for instance.^{153–155} Psychosocial and spiritual support was integrated in many programmes, but the high number of patients and the limited time health-care workers could spend within treatment units due to Ebola virus status resulted in minimal patient counselling.^{156–158}

Patients with Ebola virus disease coped with the loss of their loved ones while facing the disease and fear of death

themselves. This double burden was particularly difficult for children who were forced to take on caretaker responsibilities of their younger siblings after having witnessed the death of adults in their families.

Likewise, the 2010 Haiti earthquake highlights the immense immediate need for pain relief during natural disasters. The earthquake caused devastation to health-care infrastructure in both rural and urban areas.¹⁵⁹ Opioid analgesia was needed to treat traumatic wounds and postoperative pain, but the National List of Essential Medicines in Haiti contained only ketamine and inhaled anaesthetic agents.¹⁶⁰ The only readily available pain-control medications were non-steroidal anti-inflammatory agents and pain medications had to be imported into the country via informal supply chains. Some patients had to be transferred to the USA for palliation.

Given the emergency setting and human resource constraints, many people with life-threatening injuries waited for surgeries and had extended periods of acute pain. The need for pain relief stretched beyond the initial trauma in settings where patients needed extended wound care or had secondary infections such as tetanus. In the postoperative setting, inadequate pain relief can keep patients from participating in physical rehabilitation, often leading to increased disability that can prevent them from fully rejoining the workforce.

Similar to what was seen in the Ebola epidemic, the 2010 Haiti earthquake killed or injured 5% of Haiti's population and internally displaced an additional 19%. Mental health support for management of bereavement, both during and in the aftermath of the crisis, was almost non-existent or was imported and not culturally appropriate.¹⁶¹

with HIV in 2015, about 19·8 million were diagnosed and receiving ART, 5·9 million were diagnosed and not receiving ART, and 11 million were undiagnosed. Those who were diagnosed, receiving ART or not, are living with a life-threatening and highly stigmatised health condition, and findings from various studies have shown prevalence of reported pain and other symptoms of more than 50% in this population.¹³³ Although patients with normal CD4 T-cell count who adhere to ART and have undetectable virus load will generally not be at risk for classic, AIDS-related complications, they might be increasingly at risk of chronic comorbidities as they age. The important concept of accelerated ageing with chronic, suppressed HIV (eg, higher incidence of end-organ failure, neurodegenerative disease, and musculoskeletal pain) can have important implications for palliative care.¹³³ The percentage of people living with HIV who do not know their status is generally decreasing.¹³⁴ According to the UNAIDS 2016 report,¹³⁴ most undiagnosed cases are in Africa, Asia, and the Pacific, and the percentage of people who do not know

they are HIV positive is much higher in LMICs than in high-income countries. Our expert panel felt it necessary to consider, rather than ignore, this extremely vulnerable, often impoverished group of people, most of whom have not been diagnosed because of severe barriers to accessing health care or unwillingness because of stigma, or both, yet still suffer and need palliative care in addition to ART. Findings from a recent systematic review¹³⁵ show that most HIV-infected children in sub-Saharan Africa have not been informed of their HIV status. More than 17 million children worldwide have been orphaned because of the AIDS epidemic; every child should have had bereavement support and could suffer from complicated grief.¹³⁶

An additional limitation in our estimates of non-decedents is the potential for double counting of individuals with comorbidities from two or more of the 20 health conditions. We estimate the double count is less than 1 million, especially because many individuals with comorbidities die within a year (eg, patients with HIV and tuberculosis).¹³⁷ The exception is HIV and

malignant neoplasms, for which dual diagnosis estimates have been reported up to 6% of HIV patients^{138,139} with 1 year survival rates of about 66%.^{140,141} Comorbidity, when a person has multiple life-threatening diseases simultaneously, could also exacerbate symptom intensity and intolerability and hence necessitate a different level of palliative care. Comorbidity is an example of why it will be important to measure suffering intensity in ways that are not exclusively time-bound, and we recommend this be a priority for future research on SHS and in developing a metric such as SALYs.

Our calculations do not account for the suffering associated with migration, political violence, armed conflict, climatic and geological catastrophes, or infectious disease epidemics. These can cause suffering of any type and on a massive scale, particularly where health-care systems are weak or dysfunctional. Suffering from these causes typically goes unrelieved in LMICs and might persist for decades and be passed on to the next generation.¹⁴² Furthermore, under these extreme conditions, non-communicable diseases are generally neglected.¹⁴³ The Commission calls for palliative care to be an essential component of any response to humanitarian emergencies and crises, including refugee crises (panel 11).^{42,71,162–165}

Section 2: An Essential Package with resources and interventions to respond to the burden of SHS

The Commission calls on all countries to ensure universal access to an Essential Package by 2030 to achieve SDG Target 3.8, which calls for UHC with financial risk protection. Ensuring effective access to the Essential Package (panel 2) implies taking a balanced approach to at the same time achieve SDG Target 3.5 on prevention and treatment of substance abuse.⁵⁴

The Essential Package of palliative care health services is intended to guide policy makers in LMICs in choosing interventions across different priorities, given trade-offs and budget constraints, and deciding how these should be financed. It is a complement for other essential packages, not a substitute. Aggregating and integrating all essential packages forms a model essential UHC package.²⁵

The Essential Package is focused on LMICs to relieve, in the most cost-effective way, the burden of SHS. It is intended to be provided in the home, at community health centres, and in hospitals and settings that offer more complex care; to help strengthen health systems seeking UHC; and to protect patients and their families from catastrophic health expenditures associated with serious, complex, or life-threatening health problems. No mention is made of infrastructure because no special requirements are needed to provide the Essential Package. The components of the package (panel 2) are mapped onto each health condition, with specific assumptions about dosing and quantities and requirements varying

between countries because of the disease burden (additional online material).

This Commission puts forward an Essential Package that is the minimum standard that any health system, however resource-constrained, should make accessible to all patients in need and their families. It includes medicines and equipment as well as the human resources to ensure these are used appropriately and effectively. The package considers the health conditions and symptoms associated with the burden of SHS and was developed in consultation with the Commission's palliative care experts. By including only off-patent medicines, by proposing frugal innovation for necessary equipment, and by outlining staffing models based on competencies rather than professional status, the Essential Package is designed to be lowest cost.

Explicit packages of health services have been developed and used in many countries, and their design and implementation is described in a rich body of literature.^{30,36,166–168} These packages have been a fulcrum for a number of successful health reforms by establishing entitlements and anchoring financing in an explicit list of covered services.^{36,169–173}

In line with the definition of UHC, for all families that would face financial catastrophe or impoverishment if they were to pay for medical treatment out-of-pocket, we recommend that the Essential Package be covered by dedicated, pro-poor, public, or publicly mandated funding that spans all relevant health conditions and diseases. To ensure coverage for wealthier population groups, and depending on the financing structure of each country's health system, the Essential Package should be integrated into the social security budget, the national health insurance system, and private insurance.

Yet because the Essential Package includes only the most basic of medicines, equipment, and human resources, the provision of this package should not be the final goal of any health system seeking to achieve UHC and effectively meet the palliative care needs of a population. The Essential Package is a base on which to build more extensive and costly packages as budgets expand. Countries should expand and build on the Essential Package in line with population need, cultural norms, human resources, health infrastructure capacity, and financial resources, and they should work to provide a package specific to the needs of children and other especially vulnerable groups.

As posited by the SDGs and previous *Lancet* Commissions,³⁰ a model of progressive universalism should be applied in extending the package of covered palliative care services. Middle-income countries, in particular, should strive not only to have the Essential Package in place by 2030, but to work towards augmenting the package to include palliative radiation, surgery, and chemotherapy, as well as slow-release, off-patent morphine formulations or other long-acting opioids. The larger and costlier package should also be publicly

financed exclusively for poor people to avoid generating catastrophic or impoverishing health expenditures.

The Commission presents only one Essential Package, without differentiating explicitly between children and adults, to minimise the complexity of implementing palliative care in the most resource-constrained countries. However, children are particularly at risk for inadequate or ineffective access to palliative care.¹¹⁴ We have therefore included the medicines, equipment, basic needs support, and human resources that we deem essential for paediatric palliative care in our Essential Package.

We worked closely with leading research groups that specialise in developing packages of cost-effective interventions and aligned our Essential Package using their established methodology.^{69,167,174,175} In line with the nomenclature commonly used in leading research on priority-setting tools, our package is called essential because it contains the most basic elements to satisfy the palliative care needs of the population. Following WHO principles, the Essential Package was also designed with due regard to public health relevance, evidence on efficacy and safety, and comparative cost-effectiveness. Many more comprehensive packages exist, such as those including access to palliative surgery, radiotherapy, and chemotherapy, which are essential for relieving SHS for many patients with cancer, but providing this larger array of services depends on a country's resources for health.

In formulating the Essential Package, the Commission focused on the necessary medicines, equipment, and human resources but recognises the need for social and spiritual support to alleviate suffering. Palliative care provides the following interventions: (1) prevention, assessment, and treatment of physical symptoms; (2) prevention, assessment, and treatment of psychological symptoms, including supportive and culturally appropriate counselling for patients and their families about diagnosis, prognosis, and treatment options and bereavement support for family members; (3) intersectoral social supports to alleviate patients' and caregivers' suffering due to extreme poverty; and (4) support to respond to suffering that is spiritual in nature.^{67,176}

Hence, palliative care encompasses two interventions that are strictly health-related, which correspond to medicines, equipment, and human resources in the Essential Package, and two interventions that are necessary complements but should not be funded or provided by the health sector. The Commission strongly recommends that basic social supports be implemented for families living in extreme poverty as a necessary complement to the Essential Package and financed over and above the health budget, in conjunction with and as part of antipoverty and social welfare programmes. Toward alleviation of spiritual suffering, the Commission calls for compassionate training of all palliative care providers to sensitise them to support the spiritual needs of patients and families.¹⁷⁷ Every effort should be made to

facilitate access to spiritual counselling appropriate to the beliefs and needs of the patient and family. These services, however, should not be financed by the health budget or considered the responsibility of government. Traditionally, these services have been provided by not-for-profit and often faith-based actors, and the government should support policies to enable their participation in palliative care.

Medicines

The list of medicines in the Essential Package is based on WHO's Essential Medicines List¹⁵ and is supported by other published reports.¹⁷⁸ Each item in the Essential Package is deemed by the Commission's panel of doctors, many of whom are experts in clinical palliative care in LMICs, to be essential for the relief of at least one symptom or type of physical or psychological suffering that contributes to the total burden of SHS worldwide. Some of these items might also alleviate spiritual suffering and ease the financial burden of the family and hence reduce social suffering.

Medicines included in the Essential Package for both adults and children meet the following three criteria: (1) they are necessary to prevent or effectively relieve the specific symptoms or types of suffering most commonly associated with any of the 20 health conditions described in section 1; (2) their safe prescription or administration requires a level of professional capacity that is typically available in a primary care setting if augmented by basic training in palliative care; and (3) in keeping with WHO guidelines, they must be the medicines in their class that best balance accessibility on the world market, clinical effectiveness, safety, ease of use, and minimal cost (panel 2). In countries where certain medicines are not available or are especially costly, we suggest acceptable substitutes. For each of the medicines in the Essential Package, we describe indications for use mapped to symptoms, possible substitutes, routes of administration, and specific dosing recommendations.

The Commission strongly endorses the 2017 WHO Essential Medicines List¹⁵ and the 2017 WHO Essential Medicines List for Children.¹⁷⁹ The list of medicines in the Essential Package is largely derived from these lists and is almost entirely a cost-minimising subset of the Essential Medicines List, with minor deviations discussed below.

Morphine must be available both as an oral, immediate-release preparation and as an injectable preparation for any patient with moderate or severe pain or with terminal dyspnoea that cannot be adequately relieved by other means. These preparations tend to be the least expensive and are the most essential.

Although most medicines in the Essential Package are already commonly available in health systems, assuring safety and accessibility of morphine is more complex. Ensuring a balanced approach between appropriate access to controlled medicines and prevention of non-

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Panel 12: Ensuring safe and adequate access to morphine

Morphine, in both injectable and oral immediate-release formulations, must be accessible by any referral, provincial, or district hospital, and oral immediate-release morphine should be safely accessible by prescription locally, so that obtaining medicine, at appropriate and necessary doses, is feasible for the patient, family, or caregiver without undue travel or financial burden. This means that clinical staff at community health centres must be trained in palliative care and opioid analgesia, safe storage facilities must be available, and links to referral hospitals and doctors trained in palliative care must be in place.

All doctors, including those working in primary care settings, should be legally and institutionally empowered and appropriately trained to prescribe an adequate supply of morphine for inpatients and outpatients in any dose necessary to provide adequate relief, as defined by the patient, in keeping with internationally accepted palliative care guidelines.

Whenever clinically possible, oral morphine rather than the injectable form should be prescribed. All doctors should be trained to assess and treat opioid side-effects, to assess for and minimise risk of opioid dependence and opioid diversion for non-medical uses, and to avoid injudicious use of morphine for mild pain or chronic non-malignant pain.

To maximise safe access to morphine for legitimate use, some countries allow nurses with special training to prescribe morphine under the supervision of a doctor.⁶⁶ This strategy should be considered in countries where access to doctors is limited.

Model guidelines for opioid management are available and should be used to develop regulations relevant to local

context.^{180,181} All hospitals, health centres, clinics, and pharmacies must store morphine in a locked and well anchored box or cupboard at all times, keep records¹⁸² of the remaining supply at all points in the supply chain, and record the amount dispensed for a patient and the amount wasted or returned. The national or provincial competent authorities for opioid supply should track opioid prescribing or dispensing patterns of hospitals, health centres, doctors, and pharmacies and investigate unexpectedly high or low levels of prescribing or dispensing. This requires investment in systems and infrastructure for monitoring. Mexico has implemented electronic prescribing and should evaluate and disseminate the results of this programme.¹⁸³

In keeping with WHO's principle of balancing maximum accessibility of opioids for medical uses with minimum risk of opioid diversion,^{6,12,42} additional precautions might be necessary in areas with high rates of crime or violence. For example, it might not be possible to make morphine safely accessible at the community level in areas with high crime rates. In these places, accessibility must be ensured at the district level or higher in ways that do not increase the financial burden for patients and their families. Where home or clinic supplies of morphine are frequently stolen, or patients and their families are put at risk by carrying or storing morphine, patients needing morphine might have to either travel to a hospital to receive morphine or be admitted to a hospital as an inpatient.

medical use, diversion, and trafficking of controlled substances^{6,42} is required (panel 12).

Not all medicines in WHO's Essential Medicines List¹⁵ section on palliative care and pain treatment are included in the Essential Package because the Commission's aim was to create a minimum, least-cost list. The following items are excluded from our Essential Package: slow-release oral morphine, transdermal fentanyl, docusate sodium, midazolam, aspirin, codeine, and cyclizine. Less expensive and more accessible medications with similar efficacy and safety data are part of our proposed Essential Package (a detailed explanation of each exclusion is provided in the additional online material).

Five medicines in our Essential Package are included in the Essential Medicines List¹⁵ but not in the palliative care section: oral and injectable furosemide (a low-cost, strong diuretic, available in most health-care centres; useful in treating shortness of breath and painful oedema or ascites), oral omeprazole, oral fluconazole, metronidazole (for topical use), and injectable naloxone.¹⁵ We advocate for the inclusion of these medicines in the palliative care section of WHO's Essential Medicines List.

Despite exclusion in WHO's Essential Medicines List, the Essential Package includes petroleum jelly because this low-cost, non-prescription compound is essential in many resource-poor settings for the management of wounds and wound dressing and because it can be useful for managing and preventing skin lesions of different types, including diaper rash.

Oral and injectable haloperidol and oral fluoxetine, or another selective serotonin-reuptake inhibitor (SSRI), are sometimes considered psychiatric or psychotropic medicines, yet they have multiple essential uses in palliative care.^{184–187} For example, haloperidol is the first-line medicine in many cases, not only to treat agitation and delirium,^{188,189} but also for relief of nausea, vomiting, and anxiety.¹⁹⁰ An SSRI such as fluoxetine is the first-line treatment for depressed mood or persistent anxiety (if empathetic care is unsuccessful or insufficient), both of which are common in patients with serious, complex, or life-limiting health problems. Doctors at all levels should be trained and permitted to prescribe these medicines. Patients with more severe psychiatric illnesses, such as psychotic or bipolar disorders, should be referred for specialist psychiatric care whenever possible.

Panel 13: Frugal, disruptive palliative care equipment innovation

The Commission identified several key pieces of equipment that are essential in low-income country settings, yet are too expensive to include in the Essential Package. In response, the Commission researched and posits innovative, alternative, low-technology options that could be locally sourced at reasonable cost. We call for incentives for frugal and disruptive innovation to produce low-cost solutions for palliative care patients.^{191,192} This presents opportunities to promote markets, intervene through advocacy, and develop and implement research funding that includes students and small businesses.

The Commission reviewed air, water, and covered foam mattresses and concluded they are acceptable, low-cost options for avoiding and treating pressure ulcers. At least one type of mattress should be made accessible at low cost in resource-constrained settings.

Managing human waste at the end of life or from people with bladder or bowel dysfunction is a huge financial and health challenge for people in all parts of the world, especially for poor families, and reduces quality of life for the patient and caregiver. Diapers should be used for incontinence to avoid skin infections and ulceration,^{193,194} whereas plastic bags and cotton can be used in very low-income settings to produce simple diapers for adult patients on site. Even in places like Rwanda and Kenya,¹⁹⁵ where plastic bags are prohibited from use as part of laudable environmental protection initiatives,¹⁹⁶ specialised medical use is approved or should be negotiated.

The global market for adult diapers is growing, and sales will likely surpass baby diapers within a decade.¹⁹⁷ Contrary to the comparable case of feminine hygiene products, few low-cost

alternatives are available for adult diapers.^{198–200} Developing and testing new and less expensive adult diaper technologies is crucial, yet without incentives, few innovations have been developed or tested in low-income settings.^{201–205} Opportunities exist for design innovations that could reduce price, improve quality, and be environmentally friendly.

Some materials and equipment, including non-sterile gloves for infection control and hygiene and dressing materials for wounds, are usually available at all levels of health-care systems. Widely available reusable plastic or rubber gloves intended for household cleaning can be used by family caregivers for patient hygiene. When these simple materials are not accessible in the poorest settings, they need to be included in the equipment of the Essential Package or in the package of in-kind support.

If prices can be brought down or low-cost options identified, wheelchairs, canes, crutches, simple hearing aids, eyeglasses, and white canes for people with vision impairment should be in the Essential Package. Wheelchairs could not be included in the Essential Package because of cost, although they would improve mobility and reduce deprivation and the care burden for families. Innovative private–public partnership work is underway to design, produce, and market affordable wheelchairs for low-income settings, and this needs to be incentivised for palliative care.^{206,207} In India, models in the US\$75–125 range have been documented,^{208–210} and mass production in China and Taiwan could reduce cost to \$50.²¹¹ Low-cost technology is being developed in India²¹² and Mexico for electric-powered wheelchairs.²¹³

Equipment

Equipment for the Essential Package meets the following criteria: (1) necessary for relief of at least one type of physical or psychological suffering; (2) locally available; (3) simple to use with basic training; and (4) small enough to be located in a clinic. The equipment should also be the most inexpensive, effective design, and our Commission researched and developed several innovative, low-cost alternatives (panel 13).

The Essential Package includes oxygen, nasogastric tubes (for vomiting refractory to medicines, administration of medicines or fluids), urinary catheters (to manage bladder dysfunction or outlet obstruction), foam, water, or air pressure-reducing mattresses (to relieve pressure ulcers and pain), a locked safebox for opioids (secured to a wall or immovable object), a flashlight with rechargeable battery (if there is no access to electricity for safe administration of medicines), and cotton and plastic bags or adult diapers (to reduce risk of skin ulceration and infection, and caregiver risk and burden).

Human resources and training

The Commission developed a minimum staffing model for achieving expanded coverage of the Essential Package, based on published recommendations²¹⁴ and on the opinions of our clinical experts. The effectiveness of these staffing models depends on the training and empowerment of health-care professionals who are often reluctant to use opioids because of fear or stigma.^{215–220} Expanded coverage and maximising the capacity of local, non-specialised health personnel also necessitates training and innovation to allow for staffing based on competencies rather than professions (additional online material).

Palliative care multidisciplinary teams and competency profiles were designed for each level of care (district hospital, referral hospital, primary or community health centre, and home-based care), and consider the following categories of personnel to provide clinical, administrative, and logistics support, as appropriate and necessary and in ways that link each level of care to maximise access: doctors (specialised in palliative care or other disciplines, general practitioners), nurses (specialised in palliative

care and general), social workers and counsellors, psychiatrists, psychologists, counsellors, physical therapists, pharmacists, community health workers, clinical support staff (diagnostic imaging staff, laboratory technician, nutritionist), non-clinical support staff (administration, cleaning), and volunteer community and home care providers. Each level of care requires a specific mix of specialties using referral systems and technology (ie, telemedicine) to access and create linkages across levels.

The Essential Package includes the estimated essential number of full-time-equivalent staff members for a specific number of inpatient and outpatient cases, considering each level of care: specialised palliative care doctors, specialised doctors (eg, oncologists), general practitioners, specialised palliative care and general nurses, social workers, psychologists, community health workers, and other support staff to provide essential palliative care. Community health centres would be staffed mainly by nurses and sometimes also by a general practitioner who would supervise community health workers.

Staffing should be based on competencies rather than professions, and tasks often undertaken by the specialised health-care professionals who are present in high-income countries but severely lacking in LMICs can be taken up by other staff.^{16,17} Our human resources model and estimates therefore consider an important and expanded role for general and community nurses who can be trained in providing palliative care services, and for community health workers who can visit patients at home. In Uganda, for example, nurses with special training are legally able to prescribe morphine.⁶⁶ General practitioners with basic palliative care training or training in managing and treating specific health conditions, such as HIV disease, can and should provide basic palliative care to their patients.

The training required for health-care providers to implement palliative care at each level of health care has been recommended by WHO and described in the scientific literature.^{214,221–223} The European Association for Palliative Care^{37,38} has developed a step-wise educational approach by levels of care to reflect the scope and focus of professionals involved in the delivery of palliative care. To achieve universal access, basic palliative care training should be made widely available and integrated into all undergraduate medical and nursing school curricula. Additionally, training in medicine and in nursing leading to specialist certification in both adult and paediatric palliative care will generate a corps of specialists that can become palliative care leaders, teachers, and implementers for every country.

Neither palliative care specialists nor general practitioners can be expected to respond effectively to cases that would be better suited to specialists such as psychiatrists, neonatologists, or surgeons. Yet we recognise that if specialists are not available in resource-

constrained environments, it is the responsibility of the person providing palliative care to offer what is possible rather than leaving the patient and family without any type of care and exposed to SHS.

The Essential Package specifies that basic psychological support can be provided not only by psychologists but also by other professionals at any level of the health-care system. This requires basic training in psychological support and palliative care. However, the high prevalence of anxiety, depressive disorders, and complicated grief makes participation of trained psychotherapists in palliative care highly desirable.^{224–228} Health-care professionals at all levels of care should routinely ask patients with serious, complex, or life-limiting health problems if they would like to receive spiritual counselling.²²⁹ We also advocate for local, volunteer spiritual counsellors to visit patients whenever possible.

The important and often underused role of community health workers, and particularly their ability to work effectively outside of a health centre, is widely discussed in the scientific literature about health systems.^{230–233} In palliative care, community health workers can have an essential role by paying frequent visits to patients at home, in both urban and rural settings, especially where community or public health nurses are not available to provide necessary home care.^{81,214,234} With a few hours of additional training, community health workers can provide emotional support, recognise uncontrolled symptoms, and identify unfulfilled basic needs for food, shelter, or clothing or improper use of medications.²³⁵ Community health workers can also report their findings to clinicians and can help organise an appropriate response such as a change in prescription, a home visit by a nurse or doctor, or transportation of the patient to a medical facility.

We assume that volunteers, and especially family members, will provide support to patients at all levels of care and that much of this care will be provided at home.¹²⁰ Worldwide, the responsibility for caregiving falls on women, which fuels gender inequities.¹²⁵ Although the Essential Package does not include funding for caregivers through the health system, we advocate for social supports, especially for those in extreme poverty (panel 14). We also highly recommend that public policies be implemented in all countries to train and protect family caregivers, to avoid illness and exhaustion and to ensure that they do not lose their employment or source of income.²⁴⁸

Next steps: refining and augmenting the Essential Package to provide a full spectrum of palliative care

Developing and presenting an Essential Package specifically for paediatric palliative care should be high priority. The complementary needs of children for play and education must be taken into account.²⁴⁹ Nurses at all levels should have a good understanding of growth and development and of family-centred palliative care.

Panel 14: Social support: an essential intersectoral¹⁷⁵ complement to the Essential Package of health services

Social supports for patients and family caregivers are needed to promote dignity at the end of life and to ensure that families do not sacrifice basic needs and are not driven into poverty while caring for loved ones.^{236,237} In line with the supporting literature on inter-sectoral interventions and essential packages of health interventions,^{175,238} and using a diagonal approach,²³⁹ the Commission recommends that the Essential Package be accompanied by minimum social supports (basic food packages, cash payments for housing, transportation vouchers for visits to clinics or hospitals for the patient and a caregiver, support for funeral costs, and in-kind support for patients and families to adapt the living space) and well developed, community-integrated programmes for patients and families living in extreme poverty to ensure that patients can access the Essential Package of health services. Social supports should be delivered and financed through antipoverty or social welfare or development programmes rather than by the health system.

Most existing programmes are small in scale. One of the few palliative care programmes to provide social support has been implemented and co-managed by the Malawi Ministry of Health and a local non-governmental organisation in an impoverished, rural district in Malawi and is integrated with treatment programmes for HIV/AIDS and non-communicable diseases. When enrolled in the palliative care programme, patients are screened and then provided with food packages, cash transfers, transportation vouchers, in-kind, and housing support, as needed.⁸¹

To scale up these efforts, we propose that social support for families in need of palliative care be integrated into means-tested, antipoverty, and social development programmes often operated and financed by ministries of education and social development, working with ministries of health.²⁴⁰⁻²⁴² These community-integrated programmes already protect basic needs of families living in extreme poverty, but additional budget and programme design elements are required to

include patients in need of palliative care. Mexico introduced a bill in 2016 to provide a cash-based subsidy to poor, terminal patients to help them pay for non-health-related needs, since palliative care is covered by Seguro Popular.²⁴³

The social support components are costly, especially for low-income countries, but constitute poverty alleviation instruments and enable effective access to palliative care. We produced rough estimates of the cost of the social supports mentioned above, considering only patients living in extreme poverty (daily income less than US\$1.90).²⁴⁴ In Mexico, based on data on subsidies provided to families by existing anti-poverty programmes, and given the small proportion of families living below the poverty line (3%), social supports for palliative care represent a very small additional cost (about 1% of the health components of the Essential Package). For Rwanda, however, as for other low-income countries, the additional cost is considerable, largely because more than 60% of families live in extreme poverty. Social supports would represent an additional cost of about 30% of the health components of the Essential Package and would be, in practice, an antipoverty package for the most financially vulnerable families with palliative care needs. In addition to facilitating the delivery of palliative care health services, social supports reduce risk of impoverishment and offer potential cost savings from reduced hospital admissions, all of which should be considered in a cost-benefit analysis.

A related social support to consider in future implementation research is group life insurance that includes funeral support and can be group purchased through social welfare programmes.²⁴⁵⁻²⁴⁷ Culturally and medically appropriate burial or disposal of corpses are a major financial burden for families, and evidence from Kerala suggests that families and patients highly value support for these items, although they believe that this should not be financed from the health budget or provided by the health ministry.¹³⁰

We advocate for countries to move towards universal access to an ideal package of evidence-based palliative care health interventions carefully selected for cost-effectiveness and implemented alongside professional training and monitoring to ensure a balanced approach that minimises the risk of inappropriate drug use and diversion.⁶ A next step in assuring effective access to palliative care would entail augmenting the Essential Package with basic, high-priority interventions that require both doctors and nurses with training or experience in additional disciplines and hospitals with capacity to provide these interventions. The Commission considers that universal access to palliative surgery, palliative radiotherapy, and palliative chemotherapy be of highest priority for inclusion in an augmented package.²⁵⁰⁻²⁵⁵ These interventions can improve quality of life, could enable dose-reduction or even elimination of

morphine therapy for pain relief, and would improve patients' functional status. Slow-release oral morphine or transdermal fentanyl, which balances safety, effectiveness, and low cost and is in line with WHO's Essential Medicines List,¹⁵ should be considered for inclusion in the augmented Essential Package, but only after universal access to oral and injectable immediate-release morphine has been guaranteed and with appropriate controls on marketing by the pharmaceutical industry.

Cost of the Essential Package

The Commission collected primary data on each component of the Essential Package from Rwanda (low income), Vietnam (lower-middle income), and Mexico (upper-middle income). To collect these data, we relied on key informants in countries where the Commission had strong links to palliative care specialists and access to

	Rwanda*			Vietnam†			Mexico		
	Reported price (US\$)	Lowest international price (US\$)	Highest international price (US\$)	Reported price (US\$)	Lowest international price (US\$)	Highest international price (US\$)	Reported price (US\$)	Lowest international price (US\$)	Highest international price (US\$)
Medicines	52	18	78	27	23	96	122	28	119
Morphine (oral or injectable)	20	8	50	14	12	76	90	14	84
Equipment	31	..	..	5	..	..	31	..	..
Palliative care team (human resources)	121	..	..	78	..	..	584	..	..
Operational costs (8% of total)	16	14	18	9	9	14	59	51	59
Total	219	182	248	119	115	194	796	694	793
Percentage of GDP‡	0.25%	0.21%	0.28%	0.04%	0.04%	0.06%	0.03%	0.03%	0.03%
Percentage of health expenditure§	3.35%	2.78%	3.79%	0.56%	0.54%	0.92%	0.50%	0.44%	0.50%
Percentage of public health expenditure¶	8.79%	7.31%	9.94%	1.04%	1.00%	1.69%	0.97%	0.84%	0.96%

Prices are per patient in US\$. International prices are buyer prices as reported in the 2014 International Drug Price Indicator Guide, MSH (<http://erc.msh.org/dmpguide/>). GDP=gross domestic product. *For Rwanda, fluoxetine was substituted with selective serotonin-release inhibitors, and disposable diapers were substituted with reusable cloth diapers. †Estimates for Vietnam do not include parenteral fluconazole as pricing for this medicine was unavailable. ‡GDP, World Development Indicators, World Bank (<http://data.worldbank.org/indicator/NY.GDP.MKTP.CD>). §Health expenditure, total (percentage of GDP), World Development Indicators, World Bank (<http://data.worldbank.org/indicator/SH.XPD.TOTL.ZS>). ¶Health expenditure, public (percentage of total health expenditure), World Development Indicators, World Bank (<http://data.worldbank.org/indicator/SH.XPD.PUBL>). Source: WHO Global Health Estimates 2015.

Table 5: Per-patient cost of the Essential Package in Rwanda, Vietnam, and Mexico, by medicine prices

databases. For medicines and equipment, we collected the lowest available, public sector, wholesale buyer price for each country and included the cost of situating the item at a provider site that is accessible to a patient. For Rwanda and Vietnam, the prices include the cost of delivering the item to a hospital. For Mexico, the buyer-negotiated price includes situating the item at a public sector health provider (clinic or hospital). We also considered medical substitutes for medicines that are not available in specific countries or only at very high prices (additional online material).

To cost the human resources component of the Essential Package, we collected data on public sector salaries specific to each type of provider at different levels of care. Our data are the monthly total pre-tax (including mandatory benefits), full-time equivalent reported salaries, and we scale the data to account for the recommended mix of human resources and the number of inpatients and outpatients in each country by health condition.

We also considered the most basic operational inputs to support the provision of the Essential Package at every level of care. These include a small proportion of the cost of infrastructure maintenance, administrative overhead, basic laboratory and imaging facilities, emergency room services, and facility costs. On the basis of findings from a literature review, we have added on average 8% to our overall costs of the Essential Package.^{256–260}

We accessed prices for each of the Essential Package medicines from the International Drug Price Indicator Guide, which contains a range of prices from

pharmaceutical suppliers, international development organisations, and government agencies. We present wholesale buyer prices of medicines (which are usually accessible to government agencies using international competitive bidding or tender) that are both cheapest and of the highest quality. We analysed lowest and highest prices reported in the database for 2014.²⁶¹ We harvested data for multiple years and compared highest and lowest prices of morphine in the dataset and in recent literature.²⁶² By harvesting the lowest wholesale buyer prices from this dataset, our costing represents the best prices that a country could potentially have accessed in a given year compared with highest possible prices that any country paid. These wholesale prices do not include the cost of transporting the item to a hospital or making it accessible to the patient.

Detailed information on datasets, costing, and methods is available in the additional online material.

International variation in the price of medicines

Variations in the price paid by health-care institutions, especially for morphine, both determine and fuel the global inequities in access to palliative care and in managing the burden of SHS.²⁶² The Commission identified substantial variation between countries in the prices paid for medicines and hence in the cost of the Essential Package. Certain medicines were purchased at particularly high prices. Countries could benefit from important savings if they had access to best-case international, wholesale prices, especially for oral and injectable morphine, and we recommend the creation of

global and regional price-stabilisation platforms to aggregate demand and provide more explicit and effective dissemination of pricing information. The possible savings from lower medicine prices would have a large effect on the total cost of the Essential Package, especially in low-income countries, where salaries tend to be low and the cost of morphine is a particularly high proportion of the Essential Package cost.

Comparing the lowest prices in the International Drug Price Indicator Guide with the purchasing prices that countries reported, Vietnam is purchasing medicines in the Essential Package at a relatively competitive price, Rwanda could do substantially better with access to international lowest prices, and Mexico is a particularly poor performer in purchasing injectable morphine, although the prices paid for most other medicines are competitive.

In Rwanda, a low-income country, the annual cost of universal access to the Essential Package, even at lowest international reported prices (\$182 per patient with SHS, or \$1.45 per capita), is about 7.3% of total public expenditure on health—a much higher share than in the other countries (table 5). By comparison, the cost per year of universal access to the Essential Package, as a proportion of total public expenditure on health, would cost 1.0% in Vietnam (\$115 per patient with SHS, \$0.81 per capita) and 0.8% in Mexico (\$694 per patient with SHS, \$2.50 per capita) using lowest international prices. Reported equipment prices, and especially the price of oxygen, are high in Rwanda. Mexico, in addition to paying high prices for injectable morphine, pays medical staff high salaries. As a proportion of gross domestic product (GDP), the cost is 0.21% in Rwanda, 0.04% in Vietnam, and 0.03% in Mexico.

The cost of the entire package of medicines in Rwanda using country reported prices is almost three times the cost using lowest international prices. The difference is much smaller for Vietnam, only about 20% higher than lowest international prices, whereas for Mexico there is a more than four-fold difference between country reported and lowest international prices. In Rwanda, the reported price of injectable morphine is almost six times the lowest reported price in the International Drug Price Indicator Guide. In Mexico, the documented price of injectable morphine purchased in the public sector in late 2014 was many times higher than the lowest reported international price and indeed exceeded the highest international price recorded in the International Drug Price Indicator Guide. Although in Mexico, prices include the cost of situating the medicine, the prices of other medicines, including oral morphine are much more competitive and in line with international prices.

We also analysed the dispersion by year in wholesale buyer prices reported in the International Drug Price Indicator Guide for 2011–14.²⁶¹ We found a huge discrepancy in prices—a more than ten-fold difference between the highest and lowest price in several cases,

and up to a five-fold difference in median price—between countries and by year for both oral and injectable morphine. Only in 2011, and only for injectable morphine, was the variation in price low; by contrast, in 2013, the highest price was 37 times the lowest price reported in the dataset. The median price across years varies much less. We also noted a stable lowest price of \$0.011 per mg for injectable morphine in 2012, 2013, and 2014, which we traced to purchasing by the health department of South Africa. These data are evidence of the need for global collective action to aggregate demand and to support LMICs with information and negotiating capacity to secure stable, lowest prices. The data also suggest that national strategies are needed to assist in local purchasing and facilitating a safe supply chain.

We projected the cost estimates of the Essential Package across LMICs by income group for low-income, lower-middle-income, and upper-middle-income countries using the reference country-reported medicine prices (from Rwanda, Vietnam, and Mexico for low-income, lower-middle-income, and upper-middle-income countries, respectively) and the lowest and highest international buyer prices. We used reference country-reported costs of equipment and human resources (additional online material). At lowest international medicine prices, the total cost of covering the Essential Package for all people with SHS is 2.4% of public health expenditure for lower-middle-income countries, and 2.2% of public health expenditure for upper-middle-income countries. The total cost is about 0.04% of GDP for lower-middle-income countries and 0.07% of GDP for upper-middle-income countries. For low-income countries, the proportions are much higher: 14.4% of public health expenditure and 0.35% of GDP.

Applying the highest global prices for all medicines, the Essential Package would represent about 2.5% of public expenditure on health in upper-middle-income countries (about a 15% increase) and 3.6% of public expenditure on health for lower-middle-income countries (an increase of about 50%). For low-income countries, the cost increases by 26%, to more than 18.2% of average public expenditure on health.

The cost of the Essential Package for children at lowest reported international prices is a small proportion of the overall cost for all people with SHS. At lowest medicine prices, the cost of the Essential Package for paediatric decedents with SHS is 1.5% of public sector health expenditure in low-income countries, 0.13% of public sector health expenditure in lower-middle-income countries, and 0.03% of public sector health expenditure in upper-middle-income countries. Using our limited data on the paediatric non-decedent burden of SHS, the total cost (decedent and non-decedent) is 2.7% of public sector health expenditure in low-income countries, 0.23% of public sector health expenditure in lower-middle-income countries, and 0.05% of public sector

health expenditure in upper-middle-income countries (additional online material).

A detailed analysis is called for to assess the supply and demand factors that characterise the market for pain relief medicines, especially morphine, and to explain the very large variation in prices. This information should help to develop the price-stabilisation platforms that we are recommending and enable countries to have access to better international pricing data as a tool for effective negotiation by countries and for civil society advocacy. Global institutions should develop or strengthen existing programmes and institutions to support countries in accessing and negotiating stable and lowest prices with quality guarantees.

Comparative costs

Although a rigorous cost-effectiveness analysis was beyond the scope of our report, we compared the costs of the Essential Package with cost estimates of UHC packages. Our Essential Package follows the most recent Disease Control Priorities²⁵ methods and is one of the least costly of the components that form the essential UHC package. For low-income countries, the Essential Package costs about \$2.16 per capita per year at lowest reported international medicine prices, which is 2–3% of the essential UHC package. We also compared the cost of the Essential Package with previous calculations of the cost of a minimum package of universal primary health care services, including benchmark expenditures from the High Level Taskforce on Innovative International Financing for Health Systems, the Commission on Macroeconomics and Health, and Chatham House.^{263,264} The Essential Package cost is about 3% of the cost of these UHC packages.

There is a range of potential benefits of extending access to palliative care and pain relief, and an extended cost-effectiveness analysis^{33,265,266} is appropriate to evaluate the health and non-health, financial, and equity consequences of adopting and publicly financing the Essential Package. Although this research was beyond the scope of the Commission, for Vietnam we analysed the potential benefit of universal coverage through public finance of the Essential Package in terms of SHS days averted and financial risk protection.

The scientific literature about the introduction of palliative care reports a 25–35% reduction in end-of-life hospital admissions, which could mean important cost-saving in LMICs.^{19–23} Most studies have been undertaken in high-income countries, but some data are available for low-income countries. We undertook a projection for Mexico, comparing the cost of universal coverage of the Essential Package to the potential for reduced admissions to hospital. We identified the hospitalisations for the health conditions associated with SHS from which patients died in public sector health facilities,²⁶⁷ and we analysed data on the number of days in hospital and daily hospital costs. Applying a potential reduction of 25–35%,

the savings would have been \$66–92 million in 2015. This saving would fully offset the projected cost of extending the Essential Package at lowest international wholesale prices to all patients with SHS who need palliative care and who die each year in public hospitals, which we estimate would cost about \$40 million. Alternatively, this saving could offset the projected cost of \$62 million for offering the Essential Package to all of the 21% of Mexicans living in poverty and who are likely to experience SHS.²⁶⁸

A more expansive package would be more likely to reduce hospital admissions. As discussed above, this is also an important next research step for priority setting on palliative care that focuses on expanding and costing the package of covered health services. Using data from the Mexican Social Security Institute,²⁶⁷ we estimated the costs for Mexico of including palliative surgery for all health conditions, as needed, and chemotherapy and radiotherapy for patients with cancer.^{250,252,254} Assuming that all necessary complementary hospital services are in place, which would require a large additional public investment (not accounted for in our calculation), the provision of these additional health services augments the overall cost of the Essential Package, using lowest international medicine prices and including an expanded human resource base, by about 7%. We also did not consider the possible reductions in the cost if access to palliative surgery and radiation therapy reduces the need for morphine. The projected cost of offering this augmented palliative care package to the 21% of the Mexican population living in poverty,²⁶⁸ assuming access to lowest international prices, is about \$67 million per year.

Future research and in-depth analytic work on cost effectiveness and choices about public finance of the Essential Package and augmented packages will be important. To measure the cost effectiveness of the package, it is necessary to compare the wide range of benefits from incorporating palliative care into health care and of alleviating SHS, through channels such as: reduced risk of impoverishment, reduced symptoms and unnecessary treatment, and higher quality care-giving that is less taxing on the caregiver and promotes gender equity.

The cost of closing the global divide in access to opioids

The absence of morphine in LMICs is emblematic of the most extreme inequity in the world, and we demonstrate this in our analysis of unmet need. As with other studies,¹¹ we assume that the need for and access to morphine is a tracer of overall access to palliative care and pain relief.

Our conceptual framework and findings presented in section 1 indicate that pain is only one of the many symptoms associated with SHS, but estimating the unmet need for each type of suffering or for each Essential Package component was impossible because

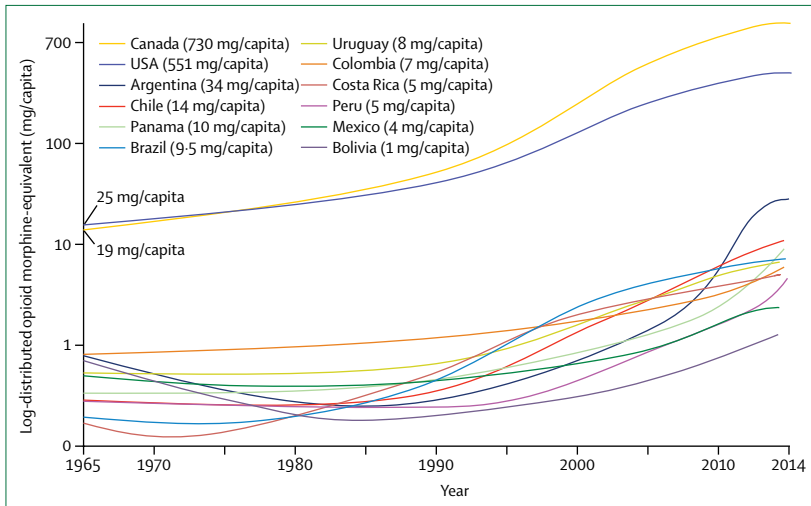


Figure 8: Distributed opioid morphine-equivalent in the Americas, 1965–2014
 Because of the very large differences between Canada and USA and Latin America, we use log distributed opioid morphine-equivalent. Numbers in parenthesis indicate the distributed opioid morphine-equivalent for each country in 2014. Source: International Narcotics Control Board (Stata-generated, 1-year lagged moving average trends).

Panel 15: Towards access to pain relief medicines in Africa: lessons from Uganda

Pioneering steps towards palliative care access in Africa came from developing a model hospice and obtaining oral morphine in Uganda.²⁷² The advocacy and dedicated work of founding the non-governmental organisation Hospice Africa Uganda²⁷² was largely responsible for the decision in 1993 by Uganda’s Minister of Health to import morphine powder and make oral morphine liquid. The next step in national access came in 2004, when the Ugandan Government legalised opioid prescribing by nurses and clinical officers with 9 months of palliative care training.

Hospice Africa Uganda has now contracted with the Ugandan Government to supply reconstituted liquid morphine for the entire public health-care system. Because Uganda has only one production facility that meets international standards, supplies can be purchased in bulk, the quality of the production process and the product can be carefully monitored, and supply chain security is facilitated.

The national consolidation and regional effect of the Ugandan programmes was facilitated by cooperation with global advocacy institutions²⁷³ and through research and academic publications to disseminate results and develop a learning-exchange platform.²⁷⁴ These learning-exchange efforts contributed to the decision of the ministries of health of Rwanda, Nigeria, Kenya, Swaziland, and Malawi to adopt the Ugandan model for producing and distributing liquid morphine.

data do not exist. However, such estimations should be a priority for future research and would require a country-specific analysis of access and use of a full range of palliative care interventions.

We developed measures of the unmet need for opioids across countries, by income regions (additional online material). Need was measured using estimates of the number of patients who have moderate or severe pain or other symptoms, such as dyspnoea, that should be treated with opioids, and the number of milligrams of oral and injectable morphine-equivalent that would be needed to alleviate their expected days suffering with

these symptoms. We focused on opioids for pain relief but noted that small amounts are also needed to treat dyspnoea for patients with cancer or advanced cardiac or pulmonary disease.

We measured accessibility using country-reported data on morphine-equivalent opioid consumption (excluding methadone) that are gathered and reported by the INCB,¹ and have been widely used as a proxy for access to morphine.¹¹ We present the average for the most recent 3 years for which data were available (to account for annual variation and stocks).

Although the INCB labels these data as consumption data, they describe the opioids (in morphine equivalence) that were available in the country in a given year and delivered to a health facility for prescription or dispensing. Without information on proportion consumed by patients (as opposed to how much remained in stock at hospitals or pharmacies) or what health conditions justified the prescription, we avoid the terms use and consumption and instead speak only of the quantity available for prescription to patients, which we refer to as the distributed opioid morphine-equivalent (DOME). The difference between DOME and total need for pain relief medicine is a minimum measure of unmet need because availability of morphine does not equate to the amount dispensed or consumed by patients. Better data are required to more precisely measure unmet need.

DOME is highly inequitable, and GDP and the Human Development Index explain most of the difference in DOME between countries and over time, according to recent studies.¹¹ Canada, the USA, western and central Europe, and Oceania account for almost 95% of DOME and only 9% of the global population. Despite increases in DOME, with daily doses of opioid analgesics per million people doubling between 2001 and 2013, inequity has increased between LMICs and high-income countries.¹¹

We considered the case of the Americas using data from the INCB and from the University of Wisconsin Pain and Policy Study Group on per-capita DOME that span from 1965 to 2014 (figure 8).^{1,269} Although per-capita availability has increased in several countries in Latin America, DOME levels are still extremely low, and gaps have increased. Some countries in Latin America are only now approaching the levels that Canada and the USA reported in 1965, about 20 mg per capita, whereas DOME has increased exponentially in these high-income countries.

We estimated the unmet need for morphine for treatment of SHS for the 20 health conditions and average duration of suffering of decedents and non-decedents. The data at least partially account for the average medical need for morphine per patient being lower in poor countries than in high-income countries because of the variety of health conditions and diseases embodied in the SHS calculations (additional online material).

There are several caveats in interpreting our data and estimates, both within and between countries. The

estimates of unmet need are averages and do not necessarily indicate that all patients receive necessary or recommended medical access, even in high-income countries with high DOME. Some patients might receive morphine for health conditions or pain that should be treated with another medicine or intervention, whereas other patients who need strong opioids for pain relief do not have access. Our data also do not prove that countries with high DOME maintain a stockpile. Our measure of need refers to the 20 health conditions and the SHS days associated with those health conditions, yet morphine is needed to manage other health conditions and situations that produce severe pain, especially perioperative care, meaning that overall unmet need for opioids is higher than our estimates of unmet need for opioids for palliative care.²⁷⁰ All estimates are best-case scenarios under the assumption that all DOME actually reaches patients in the necessary and appropriate quantities, given their medical need.

We also developed an indicator of unmet need for morphine-equivalent opioids that draws on earlier work²⁷⁰ but uses DOME values from high-income countries in western Europe as a benchmark. For that group of countries, DOME is more than 18 300 mg per patient in need of palliative care. This is substantially lower than in the USA, Canada, or Australia but high enough to reflect need that goes beyond palliative care and includes, for example, perioperative pain and acute trauma for which use of a morphine-equivalent opioid for a short period of time is often medically indicated. We assume that this better reflects real gaps in LMICs where need is also likely to extend to these other areas of pain relief. We also adjusted for the fact that burden of disease is more skewed to chronic diseases and non-communicable diseases in those high-income countries, so that the quantity of morphine-equivalent opioids needed per patient tends to be higher. The calculations are described in greater detail in the additional online material.

In maps of DOME, Australia, Canada, and the USA stand out in stark comparison to the shrivelled developing regions of Latin America, Asia, and Africa and in lower-income countries of Europe (figure 1). In Canada and the USA, DOME is more than 68 000 mg and 55 000 mg, respectively. In high-income countries of western Europe, DOME levels are much lower, but at more than 18 000 mg per patient, they are still more than eight times the estimated need (about 2170 mg) per patient with SHS.

Country-specific data illustrate the inequities and severe lack of access to morphine to meet palliative care needs, and these are largely, but not entirely, explained by country income (figure 1). For example, Russia, at 124 mg per patient, has only enough morphine-equivalent to satisfy 8% of need. Mexico, at 562 mg per patient, can cover 36% of the need for patients with SHS, compared with only 16% in China (314 mg per patient) and 9% in

Vietnam (125 mg per patient). India distributes only enough morphine equivalent to meet 4% of need (43 mg per patient). In the world's poorest countries such as Afghanistan (2 mg per patient) and Haiti (5 mg per patient), DOME is virtually nil. In Uganda, a country where programmes have been put in place to improve medical access to opioids (panel 15),¹¹³ a DOME of 53 mg per patient is enough to satisfy 11% of palliative care need, whereas availability is close to zero elsewhere in Africa. Nigeria, for example, has less than 1 mg of DOME per patient.

	Unmet need due to conditions most associated with SHS (metric tonnes)	Total need due to conditions most associated with SHS (metric tonnes)	Projected unmet need (metric tonnes)	Projected total need (metric tonnes)	DOME (metric tonnes)
High-income countries	0.4	22.7	64.0	86.4	287.7
Upper-middle-income countries	25.1	34.7	281.2	290.8	9.6
Lower-middle-income countries	18.7	19.8	165.7	166.8	1.1
Low-income countries	4.3	4.4	37.1	37.2	0.1
Total	48.5	81.6	548.0	581.2	298.5

Table 6: Morphine-equivalent unmet and total need for palliative care due to health conditions most associated with serious health-related suffering (SHS) and projected unmet and total need using western European benchmark, by country income group and distributed opioid morphine-equivalent (DOME) reported by the International Narcotics Control Board

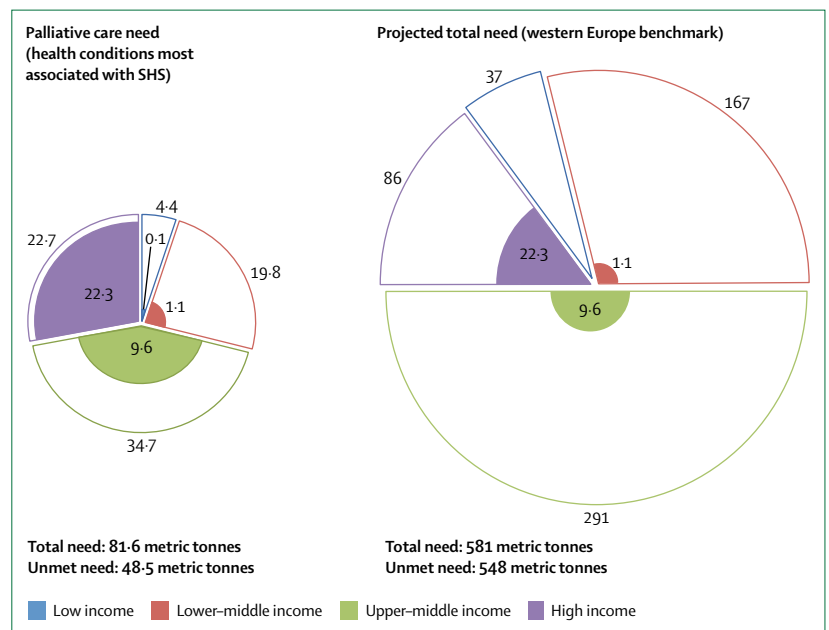


Figure 9: Palliative care and projected total and unmet need for pain relief medication based on distributed opioid morphine-equivalent (DOME), by income group
 Numbers and coloured parts are DOME in metric tonnes, white parts are minimum estimates of unmet need, and the complete chart represents total need. Countries with DOME greater than need are not included.
 Source: International Narcotics Control Board, average 2010–13.

	Region-specific price				Best price*			
	Price (US\$, millions)	Percentage of global cost	Percentage of GDP	Percentage of PHE	Price (US\$, millions)	Percentage of global cost	Percentage of GDP	Percentage of PHE
Low-income countries	69	11.5%	0.01753%	0.30489%	13	8.9%	0.00329%	0.05717%
Lower-middle-income countries	299	49.8%	0.00514%	0.11418%	56	38.6%	0.00096%	0.02143%
Upper-middle-income countries	231	38.5%	0.00117%	0.01900%	75	51.8%	0.00038%	0.00621%
High-income countries	1	0.2%	0.00000%	0.00002%	1	0.7%	0.00000%	0.00002%
Total	600	100%	0.00082%	0.0082%	145	100%	0.00020%	0.00200%

PHE=public health expenditure (World Bank Development Indicators, 2015). Median price assumptions: low-income and lower-middle income=US\$0.16 per 10 mg morphine; upper-middle income=\$0.10 per 10 mg morphine. *Best price is \$0.03 per 10 mg morphine (median price for all high-income countries).

Table 7: Estimated cost of addressing the unmet need for oral and injectable immediate-release morphine formulations for palliative care, by income group

On average, the 10% poorest countries and people of the world have access to only 10 mg of DOME per patient, which is sufficient to meet less than 2% of estimated palliative care need. For the 10% wealthiest countries, the DOME is more than 47 000 mg per patient, which is more than 24 times the estimated palliative care need for the 20 health conditions in our analysis.

The differences between country income groups are also extreme (table 6, figure 9). Of the 298.5 metric tonnes of DOME in the world, only 10.8 metric tonnes were distributed to LMICs, and almost 90% of this (9.6 metric tonnes) is distributed to upper-middle-income countries. Only 1.1 metric tonne (0.4%) are distributed to lower-middle-income countries, and only 0.1 metric tonne to low-income countries, which is the equivalent of about 13 mg per patient with SHS.

We estimate that total need for morphine-equivalent opioids is 81.6 metric tonnes per year for palliative care for the 20 health conditions most associated with SHS, and countries fall short of meeting this need by 48.5 metric tonnes. The need for medical morphine for palliative care is largely unmet in low-income countries (98%), lower-middle-income countries (94%), and upper-middle-income countries (72%). Low-income countries account for 9% of the palliative care unmet need for morphine-equivalent opioids in the world, lower-middle for 39%, and upper-middle-income countries (including China and Russia) for 52%. DOME is slightly less than the palliative care need in a few high-income countries.

Using DOME of high-income, western European countries as a benchmark, gaps are much larger because they consider other medical needs in addition to palliative care. According to this projected measure, DOME in low-income countries meets less than 0.5% of total medical need. In lower-middle-income countries, DOME meets less than 1% of total need, and in upper-middle-income countries, about 3%. In several high-income countries in the Middle East, eastern Europe, Latin America, the Caribbean, and Asia, deficiencies in access are substantial, and for this reason almost 75% of total medical need for morphine equivalent opioids is unmet,

considering high-income countries as a block. This contrasts with most western European countries, the USA, Canada, and Australia, where DOME is at or well above need. Still, high-income countries account for only 12% of unmet need, whereas upper middle-income countries accounted for 51%, lower-middle-income countries for 30%, and low-income countries for 7%. We estimate the total global need for morphine for medical use, under the western European benchmark, is about 581.2 metric tonnes, and the unmet need is almost 548 metric tonnes.

The dearth of pain relief medicine is a key component of the global palliative care access abyss. We estimated the cost of closing this gap and meeting the need for oral and injectable immediate-release morphine, measured as the difference between palliative care requirements and DOME. Although we recognise that closing the pain divide requires more than medicines (complementary training and more efficient and secure supply chains are also required), these additional investments can be catalysed by making medicines more affordable and available.

For this costing exercise, we used retail pharmacy seller prices reported for 10 mg of oral, solid morphine (\$0.03 for high-income countries, \$0.10 for upper-middle-income countries, and \$0.16 for lower-middle-income and low-income countries).²⁶² These prices include some of the costs of importing, licensing, and distributing the medicines and making them available to patients outside a hospital. These prices could also reflect subsidies enacted by the government. Retail prices are therefore a better estimate of the real cost of closing the pain divide than the wholesale country price.

The cost of covering the unmet global need for oral and injectable immediate-release morphine—the difference between palliative care need and DOME—is small, especially if LMICs could obtain the same prices as high-income countries (table 7). The total annual cost to close this pain divide for palliative care (48.5 metric tonnes of morphine equivalent) for the 20 health conditions considered in our calculations of SHS is \$600 million per year at current prices but would be much less (\$145 million, equivalent to 0.0002% of global GDP) if

LMICs had access to the best global prices paid in high-income countries. For low-income countries, the cost of closing the gap, which is almost equivalent to total need, would be \$69 million, which still corresponds to 0.3% of public sector health expenditure, but only \$13 million at best price (0.06% of public sector annual health expenditure). For lower-middle-income countries, the annual cost is \$299 million at current prices versus \$56 million at best prices, and for upper-middle-income countries the price is \$231 million at current prices versus \$75 million at best prices.

We analysed the cost of closing the gap and meeting the unmet need for oral and injectable immediate-release morphine for all children younger than 15 years with SHS. In view of the small absolute number of cases each year, the cost at reported prices is \$5.5 million for low-income countries, \$8.3 million for lower-middle-income countries, and \$700 000 for upper-middle-income countries per year. At best prices, the cost of closing the gap in need for pain medicine for children with SHS is \$200 000 in upper-middle-income countries and \$1.6 million in lower-middle-income countries. For low-income countries, the cost of meeting the need for morphine-equivalent for children with SHS is only \$1 million—a cost that would cover all children with SHS because almost 100% of need is currently unmet.

The costs are very small by any global standard, and the Commission recommends that the World Bank, WHO, and UNICEF take the lead in establishing a special fund for children in need of opioids for the relief of pain and palliative care. The creation of a fund in collaboration with other entities, as has been done with the Global Fund to Fight AIDS, Tuberculosis and Malaria to improve women and children's health and with the Global Financing Facility in support of the Every Woman, Every Child global strategy, should be part of a broad programme focused on children, with provision of technical support to ensure safe delivery and management of medicines and paediatric formulations and efforts to expand access to all essential palliative care interventions, beginning with health. This fund should be accessible to low-income countries. For LMICs as a group, and for high-income countries with unmet need, the fund could stabilise prices, provide technical assistance, and act as an information exchange platform catalysing countries to prioritise pain relief and palliative care for children.²⁷⁵ A fund for palliative care medicines for children should be part of a larger effort to create a financing facility for palliative care medicines, linked to broader efforts to facilitate treatment of chronic and non-communicable diseases and spearheaded by a global financing entity such as the World Bank.

The key conclusions and recommendations relating to the Essential Package for adults and children with SHS are listed in panel 16.

Panel 16: An Essential Package of resources and interventions to respond to the burden of serious health-related suffering: key recommendations

- All countries should ensure universal access to an Essential Package by 2030
- The Essential Package should be publicly financed for all families that could face financial catastrophe or impoverishment
- Basic social supports should complement this package and be financed over and above the health budget, in coordination with social welfare programmes
- Policies and additional investment must be in place to ensure safe supply chains, to train and build up necessary human resources with an approach based on competencies in palliative care, and to avoid pressure to include costly formulations of pain medication
- Access to best international pricing for medicines, especially inexpensive, off-patent injectable and oral immediate-release morphine, is a priority for achieving universal coverage of the Essential Package
- All efforts to expand access to best prices and to reduce costs of pain medicines should be complemented with technical assistance to ensure safe supply chains and medical use
- Countries should develop a palliative care and pain relief package for children, taking special account of their specific social and spiritual needs.
- UNICEF can take the lead in establishing a special US\$1 million annual fund for children living in low-income countries who are in need of opioids for the relief of pain and palliative care

Panel 17: Investment in health care and palliative care accessibility

Previous efforts to quantify access to palliative care provide an important basis for analysing the relation between the degree of palliative care coverage and key health-system indicators. The Quality of Death Index (QDI), developed by *The Economist* Intelligence Unit, ranks the 80 countries on the palliative and health-care environment, human resources, affordability of care, quality of care, and community engagement.²⁷⁸ The USA ranks sixth on the QDI and is the country with the highest level of health-care spending, the UK ranks first and spends only half as much on health care as the USA.²⁷⁸

The Global Atlas on Palliative Care at the End of Life¹³³ adopted a multi-method approach that groups countries into four levels: no known hospice-palliative care activity, capacity-building activity, isolated or generalised palliative care provision, and countries where hospice-palliative care services are at a stage of preliminary or advanced integration into mainstream service provision. Countries with higher levels of human development tend to have preliminary or advanced integration of service provision.²⁷⁹

Merging evidence from the QDI and the Global Atlas, the Commission analysed palliative care development and accessibility, out-of-pocket expenditure, total public sector health expenditure, and public health expenditure. We found that palliative care access, presented as a ratio of hospice-palliative care services to population for each country, decreases with higher out-of-pocket expenditure as a percent of total health expenditure and increases with higher public expenditure on health as a percentage of gross domestic product. Countries with high levels of human development rank higher in availability, affordability, and quality of palliative care.

Section 3. Strengthening health systems by integrating palliative care

In Haiti, there are no nursing homes, long-term ventilation facilities, or home hospice services. Opioids such as morphine are not freely available...Often, patients who are nearing the end of their lives are taken home to die where they often experience air hunger as well as pain. In state hospitals where the human and medical resources

For the **Global Financing Facility** see <https://www.globalfinancingfacility.org/introduction>

For **Every Woman, Every Child** see <https://www.everywomaneverychild.org>

Panel 18: Ten lessons for system-wide integration of palliative care in low-income and middle-income countries

A review of country experiences from around the world rendered the following ten lessons, organised by health-system function:

Stewardship

1 A legislative and normative framework is essential to guarantee the integration of palliative care and pain relief into health systems.

Palliative care efforts are impossible to scale up without normative and legal frameworks. Yet these frameworks are insufficient and need to be complemented with financial and organisational measures to guarantee universal access to palliative care.²⁸³ Experience in Mongolia, Uganda,²⁷¹ Mexico, and other countries shows that to be effective, any change in policy and legislation must be combined with affordable oral immediate-release morphine, palliative care training for clinicians and other providers, and implementation of model palliative care services for delivery to improve access.²⁸⁴ In Costa Rica, although no law is in place, there is a decree, and palliative care services are fully integrated into the delivery system, including at the household level.

2 Public awareness of and support for palliative care that can drive systemic policies and integration into universal health coverage usually derive from professional groups and non-governmental organisations (NGOs), often in association with international and regional civil society organisations. Government institutions tend to be late adopters of palliative care initiatives.

Small, high-quality palliative care initiatives inside and outside of hospital settings have existed in several countries for decades.^{285,286} Examples include the Pain and Palliative Care Society in Kerala, India, the Rwanda Hospice Palliative Care Centre, the Hospice Palliative Care Association of South Africa, and Hospice Africa Uganda. The pioneering work of these organisations can create the conditions for the eventual government-led implementation and scale-up of palliative care initiatives. Strong alliances between these palliative care providers and other national research and advocacy groups focused on universal health coverage, as well as with regional and international groups and societies, have been especially successful in achieving national policy change. An exception is Costa Rica's fully scaled up, public programme based at the National Centre for Palliative Care and Pain Control, which began with a pilot programme in the 1990s.

3 Feedback between global and national policy making and evidence can drive policy change.

Systemic policy change has often been driven by a combination of national and global civil society initiatives. This has been documented in India, Mexico, Nepal, and Uganda, often working with organisations such as WHO, international NGOs such as Human Rights Watch and the International Association for Hospice & Palliative Care, and universities, including schools of medicine and public

health. Learning has been bi-directional, with country experience providing key inputs for global advocacy and global knowledge informing national policy making.^{287,288}

4 Monitoring and evaluation of palliative care interventions, programmes, or policies is uncommon yet essential for effective scale-up.

Monitoring and evaluation strategies are needed to expand access to palliative care and pain relief and to scale-up palliative care programmes. However, very few countries have designed and implemented any strategies. In Colombia and Kerala, India, NGOs are pioneering policy monitoring frameworks. Asociación Cuidados Paliativos de Colombia and Asociación Colombiana de Cuidados Paliativos are collecting data on the progress of the implementation of Law 1733 on palliative care and monitoring changes in the status of palliative care in Colombia. In Kerala, Pallium India is monitoring implementation of the palliative care state policy.²⁸⁹ The Mexican Ministry of Health has also begun gathering data on access to palliative care.

Financing

5 System-wide integration of palliative care is facilitated by the existence of a national universal health coverage platform and integration into the package of covered services.

Expansion of palliative care in South Africa was greatly facilitated by the country's commitment to universal health coverage. A major expansion of access to palliative care is anticipated in some of the countries in our sample due to its incorporation into the national health benefits package associated with a universal health coverage strategy. The approval in Colombia of Law 1733 in 2014 and the national guidelines on palliative care in 2016 guarantee universal access to palliative services. In Mexico, palliative care and pain relief services were added to the package of essential health services of Seguro Popular in 2016.^{283,290}

Delivery

6 The initial adoption of palliative care interventions by governments is usually associated with cancer or HIV disease. Expansion of access to palliative care and pain relief to other health conditions and for children has been slow and is associated with a leap from a disease-specific model to a systemic approach.

Most palliative care initiatives in low-income and middle-income countries (LMICs) initially focus on cancer and, in Africa, on HIV disease. The first palliative care unit in Vietnam was established at the National Cancer Hospital in 2001. Palliative care in India began through the creation of pain clinics at cancer centres in Gujarat, Maharashtra, Kerala, and Karnataka in the 1980s.²⁹¹ In Colombia,

(Panel 18 continues on next page)

(Panel 18 continued from previous page)

until 2014, most palliative care initiatives were limited to cancer. In Chile, the incorporation of palliative care into the Explicit Health Guarantees Programme continues to be limited to patients with advanced cancer. In South Africa and Rwanda, a large proportion of palliative care and pain relief services is offered only to HIV patients.²⁹²

7 Community involvement in the provision of palliative care is crucial given the limited capacity of health systems in LMICs and the important role of home-based care.

In the state of Kerala, India, success in providing palliative care is strongly dependent on its community-based nature. Organisations such as Neighborhood Networks in Palliative Care manage palliative care services, provide education to families, and build public awareness. In South Africa, which has a strong hospice tradition, a large proportion of outpatient and inpatient palliative care is provided by community-based organisations. These organisations can complement the efforts of governments to introduce palliative care in public clinics and hospitals.

8 Strong small-scale or state-wide programmes can be a fulcrum for developing a national palliative care model and achieving systemic integration—especially in delivery.

Local and state-wide palliative care experiences should be used as reference to integrate palliative care into national health systems. In Costa Rica, a successful pilot programme grew into a national network of 54 clinics linked to tertiary hospitals through referral. In Kerala, a single programme expanded into a network of 841 palliative care sites and prompted the design of palliative care policies in other states of India.²⁸⁹

Resource generation

9 Training and capacity building for primary care providers, complemented by specialised medical education and certification, is essential in the expansion of access to palliative care.

In Panama, effective access to palliative care services has depended on the expansion of undergraduate and graduate medical and nursing training in palliative care.²⁸⁵ The same is true for South Africa, where the University of Cape Town now offers a master's degree in palliative care.²⁹³ In Chile, health authorities have recognised that the expansion of effective palliative care depends on the incorporation of palliative care content in doctors' and nurses' training curricula and on post-graduate training in palliative care.²⁸⁵ In Mexico, large-scale training of primary care doctors is underway to facilitate implementation of normative and legislative changes. Costa Rica has developed graduate-level, specialised training for doctors and nurses.

10 Health systems research and lessons learned from country experiences need to be published and disseminated.

Despite important country-based learning in the implementation of palliative care and the proliferation of reports on many aspects of universal health coverage, these two bodies of knowledge have not been combined to study the integration of palliative care into universal health coverage or health-system reform. Although advocacy documents exist, national researchers have been largely unable or uninterested in studying this topic. An implementation research agenda should be developed and pursued that reports on both successful and failed programmes and includes high-risk populations with special needs (eg, victims of humanitarian emergencies, migrant communities, and children).

are low, patients in pain from trauma or malignancy are treated with medications like ibuprofen and acetaminophen [...]. Moreover, nurses are uncomfortable giving high doses of narcotics even if ordered to do so for fear of being "responsible" for the patient's death, even if the patient is terminal. Death in Haiti is cruel, raw, and devastatingly premature. There is often no explanation, no sympathy, and no peace, especially for the poor. Death's ubiquity, however, does not mean that it deserves any less attention or thought.²⁷⁶

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In this section, we analyse national health systems and the global health system to identify potential strategies that could guarantee universal access to palliative care as an integral component of the global movement to achieve UHC. We anchor our health system analysis in universal access to the Essential Package, cognisant that it is the core of a more extensive and expensive package of palliative care interventions.

This section is divided into two parts. For countries, we review paths to strengthen health systems in ways that will allow palliative care to be effectively integrated into UHC strategies, and we highlight how guaranteeing universal access to effective, people-centred palliative care through a diagonal approach can improve health-systems performance.^{17,24} We then consider how to increase the salience of global collective action and the global health system in the expansion of access to palliative care and pain relief, largely in support of the actions of countries.²⁷⁷

Introducing effective pain management for SHS through palliative care is a diagonal intervention because its implementation for a specific disease can drive systemic change that includes many diseases and strengthens surgical platforms with effective responses to perioperative pain relief, which is normally considered outside the realm of palliative care.²¹³

The research in this section draws on several sources of data. We analysed international, cross-country indicator

Panel 19: Strengthening health-systems functions to expand access to palliative care and pain relief

Stewardship

Priority setting

- Implement public education and awareness-building campaigns around palliative care and pain relief
- Incorporate palliative care and pain relief into the national health agenda

Planning

- Develop comprehensive palliative care and pain relief guidelines, programmes, and plans
- Integrate palliative care into disease-specific national guidelines, programmes, and plans
- Include palliative care and pain relief essential medicines in national essential lists

Regulation

- Establish effective legal and regulatory guidelines for the safe management of opioid analgesics and other controlled medicines that do not generate unduly restrictive barriers for patients
- Design integrated guidelines for provision of palliative care and pain relief that encompass all service providers

Monitoring and evaluation of performance

- Monitor and evaluate palliative care and pain relief interventions and programmes using an explicit outcomes scale, measuring coverage as well as effect
- Promote civil society involvement in performance assessment

Intersectoral advocacy

- Engage all relevant actors in the promotion and implementation of palliative care interventions and programmes through ministries of health

Financing

- Explicitly include palliative care interventions in national insurance and social security health-care packages

- Guarantee public or publicly mandated funding through sufficient and specific budgetary allocations starting with the Essential Package
- Develop pooled purchasing schemes to ensure affordable, competitive prices for palliative care inputs and interventions

Delivery

- Integrate palliative care and pain relief at all levels of care and in disease-specific programmes
- Design guidelines to provide effective and responsive palliative care and pain relief services
- Integrate pain relief into platforms of care, especially surgery
- Establish efficient referral mechanisms
- Implement quality-improvement measures in palliative-care initiatives
- Develop and implement secure opioid supply chain and ensure adequate prescription practices

Resource generation

Human resources

- Establish palliative care as a recognised medical and nursing specialty
- Make general palliative care and pain relief competencies a mandatory component of all medicine, nursing, psychology, social work, and pharmacy undergraduate curricula
- Require that all health and other professionals involved in caring for patients with serious, complex, or life-threatening health conditions receive basic training in palliative care and pain relief

Information and research

- Incorporate palliative care and pain relief access, quality, and financing indicators into health information systems
- Ensure that government-funded research programmes include palliative care

data from the Quality of Death Index²⁷⁸ and the Global Atlas on Palliative Care at the End of Life¹¹³ (panel 17). We also reviewed several country experiences to gather information on palliative care legislation and regulation, awareness, institutional actors and providers, financing, monitoring and evaluation, training, and research in addition to the data on frameworks, policies, legislation and barriers to accessing opioid analgesics.^{280,281} The review of country experiences was based on a common framework that analysed integration of palliative care by health-system function in the context of efforts to achieve UHC (additional online material). We conducted in-depth health-systems reviews on Chile, Colombia, Costa Rica, India, Jamaica, Lebanon, Mexico, Panama,²⁸² Rwanda, South Africa, and Vietnam. We also incorporate information from our study of small-scale innovation cases from around the world.

The country-specific health-system experiences are reference points from which to develop policies and scale-up innovative programmes to speed up the development of palliative care in countries with limited experience (panel 18). Salient among the successful systemic experiences is Costa Rica, a country that has fully integrated palliative care in its health system, which has achieved more than 90% coverage.

We applied a national health-system model built around four essential functions: stewardship, financing, delivery, and resource generation (including human resources, facilities, technology, information, and research).²⁹⁴ Expansion of access to palliative care should be integrated through each of these health-system functions, with an increasing role across the continuum of care from primary prevention to end of life.⁷⁰ Health-system subfunctions should be specifically strengthened

to expand access to palliative care and pain relief (panel 19).

Stewardship

Public education about palliative care and pain relief is key to expanding access. All relevant actors, including health professionals, policy makers, academic institutions, and NGOs, need to promote the messages of appropriate access in both the media and policy circles.

Strategic planning, which includes guidelines, programmes, and plans, is crucial to placing palliative care and pain relief on the national agenda. However, very few LMICs have national palliative care guidelines, plans, or specific programmes for managing pain relief.²⁷⁸ With multiple health conditions, agencies, and disciplinary specialties involved in palliative care and pain relief, a cross-cutting programme or plan is essential to coordinate and define responsibilities.

Palliative care and pain relief need to be integrated into disease-specific interventions and programmes. A few LMICs have integrated palliative care into national plans for cancer or HIV. Vietnam, for example, issued guidelines on palliative care for patients with cancer and HIV/AIDS in 2006.²⁹⁵ In Chile, the National Program for Palliative Care, launched in 1995, prompted the expansion of palliative care clinics, the availability and public funding of opioids for patients with advanced cancer, and the initial availability of palliative care for paediatric patients.²⁹⁶ However, integration into disease-specific interventions is insufficient because it serves only a fraction of the population and often constrains the extension of palliative care to other population groups because it fuels the assumption that coverage is sufficient.

With respect to regulation, access to palliative care and pain relief should be guided by the principle of balance, which meets the dual obligation of governments to implement effective regulatory systems that guarantee access to controlled medicines for medical need and simultaneously prevent non-medical use, diversion, and trafficking.^{6,42}

To achieve balance, countries should begin with an audit of existing legislative and regulatory frameworks to identify impediments to access to opioids for medical needs.⁶ Several LMICs have introduced novel initiatives, often at the behest of advocacy and clinician groups dedicated to increasing access to palliative care and pain relief (panel 20).

Effective guidelines must go beyond legislation that permits medically necessary access for patients, to one that ensures such access by implementing a safe and enabling environment. Indeed, crucial control points exist throughout the opioid supply chain, and a broad range of potential regulatory schemes under international drug control conventions allow countries to tailor regulation closely to their local context.

Panel 20: Improving access to morphine for moderate and severe pain: Jamaica, Nepal, Vietnam, and Mexico

The limited access to morphine in low-income and middle-income countries is in large part the result of unduly restrictive barriers that interfere with rational medical use. Several countries have pioneered programmes to reduce these barriers.

In Jamaica, oral immediate-release morphine was available at only a few hospitals that produced it as a liquid from imported powder. Most hospitals found this process too cumbersome, and no central production facility existed. Local palliative care pioneers focused simultaneously on educating clinicians about pain relief at hospitals and advocating with the ministry of health for procurement of oral immediate-release morphine tablets at the ministry of health. Palliative care has now been included in the national, non-communicable disease strategy and the national cancer control plan, and oral immediate-release morphine tablets have been accessible in the private and public sectors since 2012.

In Nepal, where morphine was virtually unavailable, a local doctor convinced a Nepalese pharmaceutical company to produce oral morphine locally and to distribute it at cost to hospitals as a humanitarian gesture. Locally produced morphine liquid has been accessible since 2009, whereas 10 mg immediate-release morphine tablets have been available since 2011 and sustained-release morphine tablets since 2012.²⁹⁷

In Vietnam, a country with an epidemic of heroin dependence, the ministry of health convened a workshop with all stakeholders—including officials of the ministry of police and the country office of the United Nations Office of Drugs and Crime—to review, revise, and approve an action plan to make opioids accessible for pain relief. The result was the elimination of barriers in the prescription of opioids, in line with international standards, although persistent concerns about diversion and non-medical use continue to hamper implementation of the new regulations.

In Mexico, COFEPRIS, the national agency responsible for managing access to controlled substances, maintained out-dated policies that included the use of bar-coded, paper prescription pads available only in large cities and in small numbers. Physicians who were willing to prescribe controlled medicines were forced to travel regularly to obtain the pads and had to provide their home addresses. Sustained advocacy campaigns by a group of national non-governmental organisations, clinicians, and regional and global civil society organisations including Human Rights Watch, successfully informed leading policy makers, resulting in a major policy and regulatory shift to electronic prescribing in 2015.^{298–300}

Governments must have policies in place to assure rational and balanced use of all formulations of opioid medications in the essential and augmented packages based on national estimates submitted to the INCB. This estimate should be done with consideration to the need, the system capacity to ensure the safety of the supply channel, and a cost-effectiveness analysis for priority setting in choosing which medicines and which formulations of such medicines are affordable and best suited to the country, always prioritising access to off-patent medicines.

By monitoring national supply of opioids, countries can assess whether their need for pain treatment medicines are being met and provide early warning of over-supply or unbalanced use, or both. We also recommend that countries monitor the supply and marketing of opioids and, on the basis of lessons learned in Canada and the USA (panel 4), create strong conflict-of-interest policies that restrict undue influence of all for-profit entities in the tendering, procurement, and

marketing of opioids, limit their involvement in setting indications and guidelines for use and prescription of opioid medications, and prevent any advertisement directly to health professionals or the public.

Strong, national regulatory agencies must be established and must maintain complete (ideally electronic) prescription records of controlled substances, monitor doctor-specific prescribing patterns and other points in the supply chain, and follow up with strong control and sanctions for any non-medical use and diversion by medical professionals. A safe environment is one that avoids over-use and reliance on opioids by incentivising and enabling medical professionals to safely apply palliative care and other interventions to their fullest potential. In environments where adequate control systems are not yet in place to ensure safe distribution, storage, and dispensing to community pharmacies, opioids should be managed centrally, patients might need to be temporarily admitted to hospital if they need morphine, and families will need travel support to obtain access.

Monitoring and evaluation of interventions and programmes should be developed, with measurements undertaken periodically and findings made publicly available. Frameworks should include an explicit outcomes scale, with benchmarks and impact indicators measuring not only coverage but also the reduction of pain and suffering. Guidelines have been developed,⁷⁰ and a set of indicators has been proposed for Latin America³⁰¹ that can be adapted for use elsewhere. Recent reports on palliative care for cancer include a proposed list of indicators for developing and monitoring national plans.^{302,303}

Governments have the primary responsibility for monitoring and evaluation. However, civil society organisations, clinician groups, and academics can be engaged in monitoring and reporting progress and assessing performance, and governments should encourage and facilitate this engagement and provide open fora for discussion. The role of the NGO Pallium India in monitoring government implementation of Kerala's palliative care policy is a good example of successful stewardship through the participation of civil society.²⁸⁹

Good stewardship of palliative care and pain relief also relies on convening, coordinating, regulating, and monitoring all relevant actors and entities through the ultimate health authority—typically, the ministry of health. The health and non-health actors include the legislative and judicial entities, governmental actors at all levels, international entities, civil society and patient engagement groups, human rights advocates and organisations, and all types of for-profit and not-for-profit providers of medical care and products, including the pharmaceutical industry. Children have specific barriers to accessing adequate and appropriate palliative care and pain relief, so special efforts are needed to ensure their needs are met by including relevant actors who focus on children's rights.

Financing

The organisation of public financing to cover palliative care and pain relief is crucial, and the package of covered services and medicines must be integrated into all national insurance and social security programmes, spanning not only tertiary providers but also covering the cost of the Essential Package at district hospitals, primary care clinics, and some services at the household level. In Mexico's Seguro Popular, for example, this meant augmenting the package in the Fund for Personal Health Services, which covers care in general hospitals and clinics, although delivery and human resource capacity are lagging behind (panel 21). Chile, in its most recent reform, included palliative care in the package of Explicit Health Guarantees, the core component of the Acceso Universal con Garantías Explícitas Plan, which includes an explicit set of health benefits with a maximum copayment.³⁰⁷ In Turkey, as of the 2014 legislative changes, palliative care is fully incorporated into the benefits package.³⁰⁸

Governments must also allocate sufficient public or publicly mandated resources to cover the package of explicitly defined palliative care interventions, including compensation for the dedicated time of health-care professionals at all levels of care, and to include surgery, radiotherapy, and chemotherapy in an expanded package of covered services.

Applying the novel concept of clinical overhead can assist in developing an appropriate financing model for palliative care, especially for pain relief. Clinical overhead finances three services that together are costly and should be offered to all patients irrespective of their specific health issue: stabilising severe symptoms, providing information and ideally a diagnosis, and giving a referral if appropriate.^{309–311} The relief of severe pain should be included in clinical overhead because it is one of the most basic requests a patient makes of any health system and is central to guaranteeing quality, responsiveness, and security.

Well designed and appropriately financed palliative care relieves pressures on other parts of the health system and reduces overall costs. Palliative care networks that include hospice and home care not only can improve quality of life, but also enable patients to remain at home or in the community, thereby reducing unnecessary hospital admissions for symptom control and relief, particularly near the end of life. Hence, palliative care can reduce hospital overcrowding and costs for overburdened health systems and provide financial risk protection for patients and their families.^{19,22,121,260,312–322}

Mr J arrived at the not-for-profit foundation in Cali, Colombia, unable to communicate verbally, illiterate and living alone in extreme poverty.

He had been diagnosed with laryngeal carcinoma seven years before and had a radical laryngectomy and a permanent tracheostomy. Six months before arriving at the hospice, he began to experience pain every time he

Panel 21: Kerala: a community-based palliative care model

The development of palliative care in Kerala serves as a unique and noteworthy example of expanding access to palliative care within India. Of the 29 states, only Kerala, Maharashtra, and Karnataka have a palliative care policy.³⁰⁴ Kerala was the first to adopt state-wide policy in 2008 and is the furthest along in integrating palliative care into health-care delivery. With 841 of India's 908 palliative care sites, Kerala has one of the largest networks of palliative care in the world.^{305,306} As of 2014, 170 institutions stocked and dispensed oral morphine.

In 1993, only two clinics in Kerala, both attached to cancer hospitals, had oral morphine. The Pain and Palliative Care Society at Government Medical College in the government hospital at Kozhikode was established through the efforts of local champions alongside a clinical service and included community representation. However, the clinic operated without access to oral morphine, which is managed by stringent state-level rules that follow the 1985 Narcotic Drugs and Psychotropic Substances Act of India. Multiple barriers hindered access to oral morphine, including administrative processes across various government agencies to get necessary approvals and licenses, fear of non-medical use of opioids among policy makers, interrupted supply due to strict import regulations from the commercial manufacturer in Gujarat and there being no manufacturer in Kerala; and limited numbers of trained professionals to administer morphine.

Efforts to mainstream palliative care in Kerala began through sustained, targeted civil society advocacy, efforts by the community hospice organisations fostered by The Pain and Palliative Care Society, and support from international

academic groups such as The Pain & Policy Studies Group at the University of Wisconsin. Public discourse and community pressure were important to prioritise palliative care within the Directorate of Health Services of the Government of Kerala. Familiarity with the laws and regulations governing opioid procurement and prescribing in Kerala made it possible to identify and sensitise government officials. This resulted in oral immediate-release morphine becoming widely accessible to treat pain in Kerala. 20 years later, locally produced oral immediate-release morphine is accessible in all 167 recognised medical institutions in Kerala State. No evidence of opioid diversion has been found.⁹⁶

Pallium India was launched in 2003 and became responsible for submitting a proposal to the Government of Kerala to formulate a state policy on palliative care that was adopted in 2008. Pallium India has effectively functioned as an observatory to monitor implementation of the state policy and has worked on its mandate to expand palliative care nationally, helping establish palliative care centres in 11 states.

Several innovations explain the success of the Pallium India model. The community-based nature of palliative care in Kerala, with the creation of Neighbourhood Networks in Palliative Care, has been at the core of its success to date and of ongoing, statewide scale-up efforts. Trained volunteers are at the centre of the care networks. They organise and manage palliative care services, provide education to families, and build public awareness.³⁰⁵ International collaborations with WHO, universities, and non-governmental organisations bolster the movement to improve access to palliative care in Kerala.

moved his head. Whenever the pain became unbearable, J went to the emergency room at the state university hospital, where he was given weak analgesics, sent home, and told that nothing else could be done for him.

When admitted to the hospice, he was in severe pain, had very poor hygiene, and the skin around the trach tube was red, swollen, and draining pus. He was assigned a bed in the ward, and given medications including a weak opioid for pain. Although he continued to have difficulty walking, sitting and swallowing, J refused to complain because he was afraid of being discharged from the hospice in the same way he was discharged from the hospital. We started liquid oral morphine in regular doses and lidocaine before each meal and reassured him that he would continue to be under the care of the palliative care team. Two days later, he was able to walk and feed himself and was discharged with weekly follow-up visits. J continued to deteriorate, and was eventually readmitted to the hospice. The pain and symptoms were kept under control until he died, 3 months later.

The government did not cover palliative care services, so the cost of his care was paid by a charity created for patients like J, who could not afford to pay.

Liliana De Lima, IAHPIC Executive Director

Health service delivery

Health systems in LMICs should guarantee access to effective and responsive palliative care at all levels of care, from households to highly specialised hospitals. However, delivery of palliative care in both urban and rural settings requires appropriate equipment and medicines, health personnel trained in palliative care and pain management, and efficient referral mechanisms. Other than for opioids, the delivery of interventions included in the Essential Package do not rely on special managerial arrangements.

Effective and responsible delivery of opioids will rely on secure supply chains and up-to-date technology for strong monitoring and management systems. Research and exchanges of lessons learned across countries is key. The case study of Kerala, where 170 recognised medical institutions stock and dispense oral morphine,³⁰⁵ and of Uganda, where an NGO hospice now supplies the national public health-care system, are worthy of study (panel 15).²⁷¹

All health workers should have training both in technical procedures related to palliative care and pain relief and in interpersonal quality of care, a component

Panel 22: Medical and nursing education in Mexico: need for capacity building

A Mexican law enacted in 2009 mandates that all terminally ill Mexicans have the right to publicly provided and financed palliative care. To make this possible, normative frameworks allow for general practitioners to provide palliative care and prescribe controlled medicines, including morphine.

Primary care providers must be empowered and trained to provide essential palliative care services and medicines at clinics throughout the country. Roll-out of training programmes, managed by the Mexican Ministry of Health, is underway across Mexico for primary care doctors. Future initiatives should also cover other primary care personnel, including nurses, social workers, and professional health promoters.

One of the most effective avenues is to integrate basic palliative care training into university curricula. Nevertheless, as of 2016, few of the many excellent universities in Mexico include even optional courses in palliative care. Results of a data review from all 111 government-certified doctor training programmes in the country revealed that only 17 programmes offered compulsory courses in palliative care as part of first-degree medical education, and only two programmes offered optional courses in palliative care. In our review of 99 of the 103 certified nursing schools, we found that only 12 schools offered a compulsory palliative care course, and only five schools offered an optional course on palliative care.

In many low-income and middle-income countries, students of medicine and nursing are required to do up to 1 year of social service, often in remote clinics. Students are forced to receive patients with severe serious health-related suffering and at end of life, yet they are not given the training or inputs to treat these patients. Testimony from Mexican students alludes to heroic efforts to respond by purchasing opioids at private pharmacies and reaching out to colleagues to guide them in administering these medicines.

In Mexico and in the rest of the world, ministries of health and education should seek to ensure that accredited medical and nursing training programmes include at least one compulsory course in palliative care. This would enable much more rapid advance towards universal coverage of palliative care services and ensure that care is provided in a more responsible and informed manner, particularly with respect to prescribing opioids.

Panel 23: Training of clergy and faith-based personnel

Many patients and families turn to religion and faith in times of severe pain, distress, and suffering, especially at end of life and in moments of bereavement. Members of the clergy of their faith are asked to provide consolation and support as part of palliative care. Thus, faith and religious professionals need formal training in palliative care to protect and effectively care for the patients and families who seek their support and for themselves, given the risk of burnout.

We reviewed university and graduate training programmes for rabbis, Christian priests and ministers, and imams in the USA and the UK. Rabbis must have training in counselling and bereavement as part of their obligatory courses. For priests, some Master of Divinity programmes offer formal courses in counselling (including bereavement), but they are not always obligatory. Information on the formal training for imams is difficult to obtain, but it is included in programmes at several schools. All schools require training in settings such as hospitals or prisons.

Integration of religious professionals and practitioners into palliative care teams is common practice. Yet the interaction between mental care professionals and other health professionals and spiritual leaders can be complex and is poorly understood.³²⁵ Integration of religious professionals and practitioners into palliative care teams is common practice. This aspect of palliative care teamwork deserves more formal review, and capacity-building programmes should be fully integrated and obligatory in certifying providers of spiritual care.

of palliative care that is of paramount importance when dealing with patients with SHS who need close attention. Up-to-date clinical guidelines specifically designed for palliative care and pain relief interventions should be available at all levels of the health system.

Referral mechanisms are necessary, since continuity of care is essential. Community workers and primary care doctors and nurses should have regular communication with patients and should be able to efficiently refer them to other levels of care when necessary. Communication technologies, most notably mobile phones, enable primary care units and community health workers to link to specialty care relatively easily; for example, communication technology has been instrumental in expanding access to paediatric cancer care worldwide.^{17,323} For palliative care, and in view of the difficulties patients have when travelling to high-level care facilities, communication technologies must be harnessed to expand effective access.³²⁴

The Commission reviewed palliative care delivery models and innovations around the world based on personal experience, unpublished materials, and site visits to Albania, India (panel 21), Jamaica, Malawi, Mongolia, Nepal, Uganda, the USA, and Vietnam. We identified several models and innovations in LMICs that have improved access or appear promising in terms of sustainability, scalability, and reproducibility in other settings. These innovative projects provide important lessons, but they must be rigorously assessed (panel 18). Rigorous quantitative or qualitative performance evaluation that would enable scale-up is lacking and should be a priority for research and international funding. Scaling up projects to the national level is challenging for even the most successful programmes. Even the Kerala palliative care programme, which has made tremendous progress in expanding within the state (panel 21), has yet to be integrated into nationwide health system planning and delivery.

Resource generation

National and local governments should undertake programmes with a focus on health education and awareness building to reduce barriers, guarantee appropriate use of opioids, and encourage acceptance of palliative care as a core component of disease management.

To provide palliative care services universally, countries need palliative care specialists in both multispecialty and single-specialty tertiary care units. Palliative care must be a recognised, licensed medical and nursing specialty or subspecialty in all countries so that doctors and nurses can be certified as specialists and practice as such. Each medical school and training institution should recognise palliative care as a specialty by establishing work units or job categories.

All medical professionals ought to have general competencies in palliative care and indeed, this is crucial

	WHO, UNICEF, and other UN agencies	World Bank and other development banks	Bilateral agencies	Trusts or foundations	Global and regional not-for-profit organisations	Academic institutions and think tanks	For-profit and corporate multinational and transnational entities
Stewardship							
Consensus building around the importance of palliative care	+++	++	+++	+	+++	+	
Strengthening the position on global and local agendas	+++	++	+++	+	+++	+	
Monitoring and evaluation of initiatives and accountability frameworks	+++		+	++	+++	+++	
Cross-sector advocacy	+++	+++	+	+	++	+	
Interinstitutional partnerships	++	++	++	++	++	++	+
Production of global public goods							
Basic, clinical, health-systems, and ethics research	++		++	+++	++	+++	
Information and databases	+++	+++	++	+	++	+++	
Development and update of guidelines and standards for national and international regulation	+++		+++		+++	+++	
Design of training materials for countries			++		++	+++	+++
Comparative evidence and analysis of initiatives and best practices	+++	++	++	++	++	+++	
Update the WHO Model List of Essential Medicines	+++				++	++	
Management of externalities							
Guidelines to avoid cross-border use of controlled medicines and ensure safe and effective prescribing	+++				++	++	
Global solidarity							
Expansion of global financial resources	+	+++	++	++			
Humanitarian assistance	+++	++	++	+++	+++		
Technical cooperation and training	+++	+	+++	++	+++	+++	+++
The symbols denote various levels of engagement by actor in the global health system, such that + denotes minimal engagement, ++ denotes moderate engagement, and +++ denotes strong engagement.							

Table 8: Actors and services to expand access to palliative care, by global health system function

for achieving universal access to the Essential Package. General, prespecialisation medical and nursing curricula and training must include at least one mandatory course in palliative care and pain management as a prerequisite for licensing (panel 22). All other professionals who provide aspects of palliative care, including social workers and clergy (panel 23), should also have some formal training.³²⁶

Countries without local palliative care expertise need external technical assistance. Global curricula should be made freely available so that all countries can use this resource for basic training in palliative care principles and build on it to adapt to local needs and circumstances. In Nepal, for example, palliative care training for doctors was provided in India with support from a foreign NGO. Since 2013, a visiting professor of palliative care has been in residence at one of Nepal's leading medical schools. With palliative care expertise available in the country, this medical school collaborated with the new Nepal Association of Palliative Care to create a 4 week

course that has been approved by the Nepalese Government.²⁹⁷ Professional training and access to oral, immediate-release morphine was facilitated with support from international groups such as the International Pain Policy Fellowship, organised by the Wisconsin Pain & Policy Studies Group.³²⁷ Hospice Africa Uganda, a regional model (panel 15), now offers training and experiences for clinicians from sub-Saharan Africa and elsewhere in Africa.

Effective management of each of the health-systems functions relies on timely and reliable information about palliative care and pain relief. The results of the Commission's studies provide guidance on the development of strong data embedded in overall health-information systems, including cancer registries. There are three important considerations when developing national health-information systems with palliative care integration. The first consideration is the recognition of the need for palliative care and pain relief, based on the conceptual framework developed in section 1. The second

consideration is the development and provision of timely information on access to the Essential Package and other interventions, with strengthened data on opioid availability and consumption. Finally, the third consideration is research on palliative care and pain relief needs, effective interventions, access, and health-system responses. Since many of the necessary medications and devices in the Essential Package are low cost and hence have a low profit margin, little funding is available for innovations to improve access, despite the huge potential market. Limited information on successful projects, implementation, or delivery in resource-poor settings has been published.

Research should be incentivised by ensuring that governmental entities that fund research include explicit and specific budget lines for palliative care and pain relief, including implementation research. Governments should also fund and promote data collection and make these data publicly accessible to facilitate research and knowledge exchange. In Mexico, for example, national survey data collected from palliative care providers can benefit the research community once it is made public and only if it is open access.³²⁸

Governments should work with researchers to establish research priorities. In Lebanon, the National Committee for Pain Relief and Palliative Care identified priority research areas as part of national planning. In response to the efforts of palliative care advocates, the Lebanese Ministry of Public Health established the National Committee for Pain Relief and Palliative Care in 2011, charged with developing a national plan that included research. The suggested research priorities included identification of gaps in palliative care services, education, and policy as well as ways to close the gaps. However, implementation of these national palliative care research priorities has been hampered by inadequate funding exacerbated by the economic strain of the war in neighbouring Syria and the resultant refugee crisis.

Research is a global public good and should be supported by global institutions and guided by regional priorities where possible. A research agenda on palliative care has been developed for Africa³²⁹ with notable publications that have benefited palliative care development in the region, and this should be replicated for other areas. Not all countries have to fund the actual research, but they should all have the capabilities to adapt findings to specific national contexts and apply them (panel 18).²⁷²

Global, collective action to expand access to palliative care and pain relief in LMICs

Universal access to palliative care requires global collective action through the participation of actors whose primary purpose is to improve health—WHO and its regional offices, multilateral development banks, multinational corporations, and international civil

society groups—guided by rules and norms governing their interactions.³³⁰ The scope of action for the global health system should include recommendations, health products, and health-focused activities that can be provided most effectively by global institutions.^{41,331}

The four core functions of the global health system are stewardship, production of global public goods, management of externalities, and mobilisation of global solidarity (table 8).^{294,332} Stewardship, led by ministries of health, includes convening for negotiation and consensus building, setting priorities, evaluating actors and actions to ensure mutual accountability, and advocating for health across sectors. The production of global public goods includes knowledge and technology through research and development and the generation of standards and guidelines, information and databases, and comparative evidence and analysis (as, for example, by the International Agency for Research on Cancer). Management of externalities implies the prevention or mitigation of negative health effects, that is, situations or decisions originating in one country that might affect others, through tools such as surveillance and information sharing and preparedness and response coordination. Finally, the mobilisation of global solidarity is implemented mostly through the provision of overseas assistance in the form of development financing, technical cooperation, and humanitarian support.

Global stewardship

WHO has recently taken steps to include palliative care on the global policy agenda by adopting the 2014 WHA Resolution 67.19, which engages the global health system more actively in palliative care and recognises it as an essential component of comprehensive and universal health care.⁴² The resolution was the result of concerted global collective action that involved not only multilateral agencies led by WHO, but also global NGOs devoted to human rights and palliative care issues (table 8).

Consistent with this resolution was the inclusion of palliative care in WHO's definition of UHC and, hence, in the core of the agenda for strengthening health systems.^{27–29} Palliative care is now included in the services covered by UHC initiatives along with health promotion, disease prevention, curative treatment, and rehabilitation.²¹³ This important step forward in linking palliative care to the UHC agenda must be upheld in all international and national work on UHC.³³³

Despite the resolution and the definition of UHC, most countries have yet to make real progress in integrating palliative care into policies and national health systems. Global collective action around palliative care must be focused on facilitating and assisting countries to achieve this objective. A review of framework conventions and global strategies that have been implemented around other health priorities would provide important insight into how to move forward.

For the International Agency
for Research on Cancer see
<https://www.iarc.fr/>

Advocacy by international and regional agencies has been essential to spur change (eg, the adoption of global resolutions). NGOs have also undertaken much of the global policy and health-systems analysis, sometimes working with clinicians and academics.^{113,244,257,262,335}

An important measure driven by collective action of international agencies and NGOs was the adoption by the UN General Assembly Special Session on the World Drug Problem (UNGASS), in 2016, of a document that articulated a strong commitment to “improving access to controlled substances for medical and scientific purposes”.³³⁵ UNGASS called for steps to address barriers related to legislation, regulatory systems, health-care systems, affordability, training of health-care professionals, education, awareness raising, estimates, assessment and reporting, benchmarks for consumption of substances under international control, and increased international cooperation and coordination.

Much of SHS is associated with non-communicable diseases. With the relatively recent addition of non-communicable diseases to the global agenda and related advocacy work, lessons can be learned and transferred to advocating for palliative care and pain treatment. We recommend building bridges between the non-communicable diseases and palliative care advocacy, academic, and policy communities.

Cross-sector advocacy, which involves a range of international institutions, is especially important in relation to opioids and other controlled medicines for which strong and ongoing collaboration between WHO, the INCB, the UNODC, and regional drug-control agencies is necessary to implement a balanced approach.

Promoting and facilitating international and inter-institutional exchange that generates innovation and collaboration platforms, including private-public partnerships, is a stewardship function that has great potential for expanding access to palliative care. Innovation in product development and adapting existing formulations of medicines and equipment for low-resource settings is necessary to reduce the cost and increase the acceptability, especially of the Essential Package.

In the development of their stewardship responsibilities, global health actors should also promote and participate in the assessment of national palliative care interventions, programmes, and policies—a crucial input for shared learning and accountability that does not exist. The evidence and lessons learned through these procedures should guide future palliative care activities and models. Indeed, assessments of national strategies should be a priority for not only global institutions, but also for all WHO regional offices and the regional development banks funding health programmes.

Accountability is a major challenge for palliative care, as it is for the global health system because no institution has been defined that mandates corrective action. Even for treaty-based commitments, such as the Framework

Convention on Tobacco Control, strong accountability mechanisms have been difficult to establish. Notwithstanding this difficulty, we propose a global mechanism with a clear accountability framework to ensure progress on universal coverage of palliative care, and especially access to pain relief. In view of the interinstitutional nature of stewardship in this area and the limitations WHO has in holding member states accountable, a multistakeholder, accountability-focused group is needed to measure and regularly report on the progress of both global and national institutions. The *Lancet* Commission on Essential Medicines put forward similar proposals, and our Commission strongly supports these recommendations and suggests working jointly, at least with respect to access to medicines for pain relief.³³⁶

Production of global public goods

Despite the increasing demand for palliative care and its documented health, social, and economic benefits, a very small proportion of resources for health-care research—just 0·2% of total resources for cancer research in the UK and 1% of the 2010 total appropriation of the US National Cancer Institute—is devoted to palliative care.³³⁷

Basic, clinical, and health-systems research could improve the effectiveness and selection of medicines and interventions involved in palliative care, disseminate generalisable findings, and identify practices and models that could be implemented and scaled up in LMICs.^{185,338} Comparative evidence and analysis of the design, implementation, and effect of palliative care interventions, services, programmes, and policies is crucial for the identification and dissemination of best practices in clinical, organisational, and policy contexts, and we conclude this report with a research agenda.

Research in ethical dimensions of palliative care is essential to address sensitive issues, such as the practical meaning of a dignified death. Palliative care research does encompass important ethical issues, including the patient’s decision-making capacity and willingness to participate.^{339–341}

A system of measures and indicators could provide priority-setting tools for palliative care and for access to pain relief medicines. As this Commission established through its initial work on the global burden of SHS, a new metric that accounts for this burden, using a people-centred approach, is needed. This new measure of the burden of suffering that would complement burden of disease data is essential for monitoring and priority-setting purposes, and it should be used as a priority-setting tool to assess the need for palliative care and guide health-system reform with respect to achieving UHC.

No consensus exists on the indicators and standards to be used for routine data collection and reporting in global health in relation to palliative care. The WHO Global Plan of Action on the Prevention and Control of

Non-Communicable Diseases 2013–2020³⁴² includes one cancer-focused indicator related to palliative care but sets no specific targets, and palliative care is not explicitly included in UHC in the SDGs. Selective indicators should be developed, data collected and harmonised, and results published and disseminated globally. Cancer registries provide key input into these health-information systems, and ongoing efforts to develop registries, led by the International Agency for Research on Cancer, deserve support from the palliative care community.

Global public goods related to palliative care should continue to include the design of clinical guidelines for palliative care. WHO is updating the cancer pain guidelines it first published in 1996, but to date no comprehensive palliative care guidelines for LMICs have been planned, and the Commission recommends that WHO and its partners make that a priority.

Basic competencies in palliative care and pain relief for primary care doctors vary little between countries, so there is an ideal opportunity to implement standardised, global, online curricula that can be easily translated and used internationally to move rapidly forward in training personnel (eg, WHO's Planning and implementing palliative care services: a guide for program managers²¹⁴). Universities and foundations can play an important part in developing curricula and managing online courses.

International policy on controlled substances has been dominated by efforts to limit and control the illicit production, trafficking, and misuse, with little or no attention to the requirement of the UN drug control conventions to ensure adequate access to legally produced and controlled substances for the relief of pain and suffering. In recent years, WHO, the INCB, the Commission on Narcotic Drugs, and the UN Office on Drugs and Crime have taken steps to correct this long-standing imbalance. Breakthroughs include the 2010 publication of national policies on controlled substances⁶ by WHO, aimed at helping countries reduce regulatory and other barriers to availability of these medicines while preventing diversion and misuse. Also in 2010, the UN Commission on Narcotic Drugs initiated a process with the UN Office on Drugs and Crime to revise its Model Drug Laws and address the need to ensure adequate availability for medical use.³⁴³ In 2011, the INCB began establishing cutoff points for inadequate supply of controlled substances.³⁴⁴ Most countries submit estimates to the INCB that are so low that demand for opioid cannot be met, resulting in stockouts and undertreatment. The work of the Commission and recent reviews of INCB data provide key evidence to establish more appropriate cutoffs and processes for monitoring progress.¹¹

In 2013, the WHO Expert Committee on the Selection and Use of Essential Medicines approved an application by the International Association for Hospice and Palliative Care to include an evidence-based list of medicines for pain relief and palliative care in WHO's Essential Medicines List.¹⁵ Based on the approval of this

application, the WHO Committee added a section on pain and palliative care.¹⁷⁹ Global public goods should continue to include a review of WHO's Essential Medicines List and regional efforts to make these medicines available and accessible to countries.

Several knowledge inputs can be most readily developed by researchers in educational institutions, and these can be combined with shadow monitoring frameworks effectively designed and disseminated by international NGOs. Some important examples include: the Quality of Death Index²⁷⁸ commissioned by the Lien Foundation (a Singaporean philanthropic organisation) and developed by *The Economist* Intelligence Unit; the series of policy briefs, situational analyses, and recommendation documents by Human Rights Watch, used as policy levers in many countries; the Atlas of Palliative Care in Latin America, developed by the Latin American Association for Palliative Care; the Atlas of Palliative Care in Europe, developed by the European Association for Palliative Care; the Atlas of Palliative Care in Africa, developed by the African Association for Palliative Care; and the collaboration of the Worldwide Hospice and Palliative Care Alliance on the WHO Global Atlas.^{113,285,326}

Management of externalities

There are many reasons to assume that the diversion and non-medical use of drugs is not a function of increasing medical access to morphine in LMICs, but rather a consequence of inadequate safeguards to minimise such diversion in certain high-income countries.^{94,96} First, the drugs most frequently associated with non-medical use are synthetic opioids such as hydrocodone, oxycodone, and fentanyl, not the oral or liquid immediate-release morphine needed in LMICs for the relief of severe pain and palliative care. Second, by contrast with the increasing epidemic of non-medical use of opioids in the USA, other high-income countries such as Austria, Germany, Switzerland, and the UK report high opioid consumption rates for the treatment of severe pain, palliative care, and dependence syndrome and little or no non-medical use.¹⁰¹ Although data are scarce, diversion of morphine and other basic opioid used in palliative care in LMICs appears to be minimal.⁹⁶

The diversion and misuse of opioids in the USA and in other countries should be addressed by the global health system in coordination with other global entities and the respective national governments. To manage this, the INCB has recommended: (1) undertaking studies at the national, regional, and international level to better understand the dynamics underlying the uncontrolled prescription and distribution of these products; (2) the development of guidelines on best practices to deal with these externalities; and (3) the provision of technical assistance to build capacity for the design and enforcement of laws to cope with the problems related to the uncontrolled use of opioids and other similar medicines.³⁴⁵

Global entities and countries must develop balanced strategies to maximise access to morphine for medical uses and minimise the risk of diversion and non-medical use. Lessons learned and best practice should be shared, and countries that report high consumption of opioids and little or no non-medical use can share their experiences with countries where there is over-consumption or underconsumption.

Mobilisation of global solidarity

The convening power of UN agencies and their ability through such interactions to socialise countries and actors into a common position are powerful mechanisms for mobilising global solidarity around palliative care.

Financial barriers to accessing palliative care could be overcome in view of the low cost of an Essential Package. Sustainable financing and expanded financial capacity will stimulate and facilitate universal access to palliative care, especially in low-income countries.

In view of the wide variation in prices for medicines, especially for morphine, countries could save on their cost by establishing global or regional purchasing and procurement funds and platforms that include the medicines in the Essential Package. Financing platforms, established and managed by a global entity such as the World Bank, should be designed to aggregate and expand demand and thereby reduce and stabilise prices. Countries should be offered the opportunity to participate in pooled purchasing by regional organisations, working with a select few mission-driven, not-for-profit medicine suppliers and supply-chain managers. These funds could make the markets for palliative care medicines, especially opioids, more functional so companies that produce the medicines are more likely to offer negotiated prices even if profit margins are slim, as is the case for many palliative care medicines that are required in LMICs. The Pan American Health Organization (PAHO) Strategic Fund is an example of such a financing platform.

A knowledge sharing platform on the prices of medicines would complement these funds. Disseminating data and advocating around access and reduced prices could spur both governments to act and providers to behave more responsibly. Although financing platforms for medicines are important, it is not enough to generate expanded access to the Essential Package. Funding for medicines must be complemented by technical assistance for safe supply chains, monitoring, and building clinical human resources to leverage these medicines, and especially opioids.

Palliative care for children presents special challenges and opportunities. In view of the relatively small number of patients, the cost of the Essential Package and the cost of closing the divide in provision of pain relief is very small. We recommend that the World Bank, as a leading global development financing facility with expertise in innovative financing, spearhead an effort that should include The Global Fund, WHO and its regional offices

(especially PAHO), and UNICEF to finance palliative care for children. The fund should focus on low-income countries and begin with pain relief medicines in appropriate paediatric formulations. There is an important precedence in collaboration between UNICEF and the Global Fund to working in a coordinated way to allow governments and beneficiary communities to implement integrated community case management of childhood illness. However, UNICEF has been largely silent about children's need for palliative care to date (only one major report³⁴⁶ focuses explicitly on the topic), and this is a breach of the spirit and objectives of the SDGs and the global movement to fulfil the rights of children. The palliative care movement is an opportunity to use palliative care for children as the basis to spawn access for other populations, using lessons learned from HIV/AIDS.³⁹

Funding for global advocacy and research for palliative care in LMICs has been, and continues to be, scarce.⁴⁷ With a few notable exceptions, foundations and bilateral funders have not prioritised work on palliative care. To develop the necessary global public knowledge goods, research funding will have to be identified.

Countries are failing to provide or are unable to provide health care, and international actors must step in to meet population health needs, including the need for palliative care. In humanitarian disasters, even the most basic inputs such as morphine are often not available. Global health organisations should also regularly include interventions and experts for palliative care pain relief in humanitarian assistance programmes, whether for natural or man-made disasters.

Finally, the global health community has an important role in training and capacity building in palliative care by providing technical assistance and disseminating knowledge. Training in all aspects of palliative care management, monitoring, research, and implementation should be part of international technical assistance.

Conclusions and recommendations

Alleviation of the burden of SHS from life-threatening or life-limiting health conditions and with the end of life is a global health and equity imperative

Most high-income countries have responded to SHS with effective palliative care interventions, yet the needs of poor people have been neglected, and there is little or no access to pain relief or palliative care in LMICs.

More than 25·5 million people, 45% of the 56·2 million who died in 2015, experienced SHS, and these estimates exceed previous reports¹¹³ by about 25%. Furthermore, our estimates suggest that in 2015, an additional 35·5 million people with life-threatening or life-limiting health conditions experienced SHS, although they did not die. Summing decedents and non-decedents, more than 61 million people experienced SHS in 2015, and 80% of these people lived in LMICs.

For the PAHO Strategic Fund see http://www.paho.org/hq/index.php?option=com_content&view=article&id=12163%3Apaho-strategic-fund&catid=8775%3Aabout&Itemid=42005&lang=en

Summing the duration of all symptoms worldwide provides an upper bound estimate of 21·2 billion days of SHS symptoms for all patients. Using our lower bound indicator, which allows for complete symptom overlap, the estimate of the duration of SHS is still considerable, at more than 6 billion days.

We estimate that more than half of decedent need for palliative care is associated with premature deaths that could have been prevented or for which treatment could have extended the length of healthy life substantially. Most cases are in LMICs, and patients in LMICs account for at least 95% of the need for palliative care associated with HIV disease, premature birth and birth trauma, tuberculosis, and malnutrition. With increasing country income, the proportion of patients with SHS associated with non-communicable diseases, such as malignant neoplasm and dementia, increases.

Children and their families have specific and intensive palliative care needs, yet they can easily be overlooked because the absolute number of paediatric patients is much lower than the number of adult patients.¹¹³ Yet the global inequities are especially poignant for the more than 5·3 million children younger than 15 years who experience SHS. Children face additional barriers to access. Our data show that more than a third of children who die have SHS. More than 98% of the almost 2·5 million children who die with SHS live in LMICs. In high-income countries, children who experience SHS account for less than 1% of all deaths associated with SHS, compared with 12% in LMICs overall and more than 30% in low-income countries. The proportion of child deaths associated with SHS that are preventable is especially high. The Commission stresses that access to paediatric palliative care is imperative everywhere but especially in LMICs.

The extremely limited availability in LMICs of morphine—the most essential of medicines to relieve SHS—is emblematic of the most extreme inequities in the world. The poorest 10% of countries and people of the world have access to only 10 mg morphine-equivalent per patient in need of palliative care. This tiny amount is sufficient to meet less than 2% of estimated palliative care needs for the relief of severe pain and dyspnoea, and it meets an even smaller proportion of total medical need. Countries in the world's wealthiest decile, by contrast, have access to more than 47600 mg per patient with palliative care need. According to INCB registries from 2014,¹ 298·5 metric tonnes of morphine are available for medical use worldwide, and less than 4% is distributed to LMICs. Inequities have increased with time and gaps in access are widening.

The inadequate access to morphine for people in LMICs with a medical need is the result of obstacles in demand and supply in countries that have falsely linked local, medical access with national and international non-medical use. Access has been

hampered because of fear of secondary effects instead of relying on strong policy and evidence to even-handedly meet need while simultaneously working to counter diversion.

Universal access to an affordable Essential Package of palliative care can alleviate much of the inequitable and preventable burden of SHS

The Commission developed an Essential Package that is the minimum standard that any health system, no matter how resource-constrained, should make accessible to all patients and families in need. The Essential Package includes medicines and equipment as well as the human resources to manage this effectively and appropriately. The list of medicines in the Essential Package is almost entirely a subset of the 2015 WHO Essential Medicines List¹⁵ and Essential Medicines List for Children.¹⁷⁹ Five medicines in the Essential Package are not included in the section on palliative care in WHO's Essential Medicines List, and we advocate for their inclusion.

The Essential Package must make both oral, immediate-release and injectable morphine preparations available for any patient with moderate or severe pain or terminal dyspnoea that cannot be adequately relieved by other means. Although we advocate for the inclusion of slow-release morphine or transdermal fentanyl in an augmented package, countries should avoid pressure to make these more expensive slow-release opioids available until, and unless, more essential immediate-release oral morphine is universally available for patients in need. Countries should carefully evaluate the cost effectiveness of costly formulations in view of overall health budget restrictions and priority setting.

The Essential Package is lowest cost by design. It includes only off-patent formulations, is based on frugal innovation (panel 13) for necessary equipment, and is anchored in a staffing model based on competencies rather than professions. Tasks often undertaken by specialised medical personnel in high-income countries can be done by general practitioners and nurses or by community health workers empowered with the necessary skills to deliver palliative care and pain treatment, from the hospital to the home.

Our Essential Package is one of the least costly of the components that form the DCP3 Essential Universal Health Coverage Package.²⁵ For low-income countries, the annual cost of the Essential Package is about \$2·16 per capita per year (or 2–3% of the cost of the essential UHC package). The Essential Package cost is also about 3% of the cost of minimum packages of universal primary health care services that have been presented by other international groups.^{263,264}

Although it is not the primary role or financial responsibility of the health-care system to remediate social or spiritual suffering, these essential palliative care interventions are complementary to the health

interventions included in the Essential Package. Social suffering might prevent the delivery of effective palliative care health services, and the Commission recommends delivering and financing these by other social sectors. The alleviation of spiritual suffering is often essential for patients and families; the Essential Package includes appropriate training to ensure that palliative care professionals can be responsive and open to meeting these needs together with other professionals.

Universal access to the Essential Package relies on additional investment, which in low-income countries would be a high proportion of health expenditure, especially with the additional cost of ensuring safe supply chains and training. In view of budget constraints, this means trade-offs against other health-system priorities. To support decision makers, we propose a framework for measuring the value to patients and families of alleviating SHS that would complement existing metrics and enable balanced decision making. We propose mechanisms to further reduce the cost of the Essential Package by reducing the medicine costs with collective action and efficient delivery models. Finally, we encourage countries to incorporate extended cost-effectiveness models that include the full benefits of increased access to palliative care through reduced end-of-life hospital admissions, reduced risk of medical impoverishment, and the diagonal approach.

Prices paid vary for medicines, especially for injectable morphine, varies enormously between countries. For example, the overall cost of the medicines within the Essential Package in Rwanda, using currently reported prices, is nearly three times the cost of using lowest reported international prices, whereas the difference is almost six fold for injectable morphine. Access to best international prices for medicines would reduce overall costs of the Essential Package for low-income countries by about 25%. The retail cost of the unmet palliative care need for oral immediate-release and injectable morphine would be much reduced if LMICs could obtain the same prices as high-income countries: \$600 million at current prices, compared with \$145 million at the prices paid in high-income countries. At best international retail prices, the estimated annual cost of unmet, medical need for opioid analgesics for children in low-income countries is just over \$1 million dollars.

LMICs can improve the welfare of poor people at modest cost by publicly financing the Essential Package of palliative care through full integration into UHC

We call for all countries to ensure universal access to the Essential Package by 2030 with dedicated, public, or publicly mandated funding that spans all relevant health conditions and diseases, for all families at risk of financial catastrophe or impoverishment. For wealthy population groups, and depending on the financing structure of

each country's health system, the Essential Package should be integrated into the social security budget, the national health insurance system, or private insurance to achieve universal coverage of palliative care and pain relief. Incorporating palliative care and pain relief into the public health agenda of countries is essential to achieving SDG Target 3.8 for UHC by 2030.

We emphasise that the Essential Package covers only the most basic of medicines, equipment, and human resources and should not be the ultimate goal of any health system seeking to go beyond essential UHC and to effectively meet palliative care need. The Commission advocates for middle-income countries to move toward universal access to a more comprehensive package of evidence-based palliative care and pain relief interventions, increasing the size of the package as the public sector health budget expands. The augmented package should include palliative surgery, radiotherapy, chemotherapy, and the necessary equipment, as indicated in the palliative care chapter of WHO's List of Priority Medical Devices for Cancer Management, and a slow-release, off-patent morphine formulation.

Detailed recommendations are provided on the key actions that countries should take to expand access to palliative care and pain relief, considering each health-system function. We also share lessons for scale-up and integration of palliative care into UHC from country experiences of programmes and national policies in developing regions. One example is our call to countries to develop systemic national palliative care and pain relief plans. These should not be limited or anchored in specific diseases such as cancer or HIV, but rather take a system-wide and intersectoral approach. To be effective, national plans must include accountability instruments and measure progress in achieving measurable outcomes. Furthermore, even with financial protection, delivery will not occur without the training and human resources at all levels of care.

Human resource training is essential to extending access to the Essential Package, especially because inclusion of morphine will necessitate a balanced approach that ensures safe and appropriate access for patients with medical needs for opioids and minimises diversion. Countries require palliative care specialists to anchor national programmes, and we advocate for all countries to participate in global training, exchange, and telepalliative care programmes, build local capacities, and fill human resources gaps in the short-term and long-term.

Countries must also strive for access to reduced prices for the components of the Essential Package, especially injectable morphine. Individual countries are not likely to access best prices, and producers are not likely to offer best prices, without aggregate, advance-guaranteed markets, and this presents an important opportunity for countries to request and participate in regional and global pooled purchasing platforms. On the basis of

For the WHO List of Priority Medical Devices for Cancer Management see http://www.who.int/medical_devices/priority/ncds/en/

previous experience from other parts of the world, these platforms might also be used to negotiate with a small number of accredited manufacturers who are willing to supply low-cost, off-patent formulations purchased to order. Civil society must be called upon to take governments to task for not purchasing or extending licences for medicines at high prices unless universal coverage of the most basic, off-patent formulations has been achieved. This requires access to information and regional and global platforms should include knowledge exchange of prices paid by countries.

The Commission recommends complementing the Essential Package with key social supports (panel 14) that should be financed over and above the health budget and built into and provided through antipoverty and social welfare programmes. Serious financial barriers prevent patients from accessing palliative care because end-of-life situations and life-threatening disease can debilitate or destroy a family's capacity to generate income. Social supports that go beyond health care can prevent families from sacrificing basic needs in a desperate attempt to care for loved ones.

Access to opioid analgesics in LMICs should be increased in a stepwise and balanced manner to maximise the benefits of opioids and minimise diversion. Universal coverage must begin with off-patent, inexpensive immediate-release oral and injectable morphine. No slow-release opioid should be licensed for sale unless immediate-release oral morphine is universally accessible by prescription. Second, every country should implement rational, balanced opioid prescribing regulations that account for the medical need for opioids and the risk of diversion, while avoiding impediments that prevent appropriate access to medical care. Third, each country should implement clinical guidelines on appropriate opioid therapy for palliative care and pain relief to help doctors and other approved opioid prescribers. Fourth, expanding medical access to opioids as part of palliative care must be accompanied by training of opioid prescribers and handlers (including community health workers) who can monitor home use of opioids. Pain treatment in palliative care with opioids includes not only careful prescription in medically required amounts, but also regular visits with patients and families. Fifth, safety of the opioids must be ensured by preventing diversion through the procurement and supply distribution channels. Much non-medical use of opioids could be averted by responsible prescription by doctors and pharmacy practice and by intensive, yet balanced monitoring of unlawful or dangerous practice and rapid, appropriate responses by well informed regulatory authorities who have been sensitised to medical need. Overly restrictive legal and regulatory barriers could have a negative effect on opioid accessibility for medical use. Sixth, strong policies against conflict of interest should be implemented to restrict undue influence of all for-profit entities in the

tendering, procurement, and marketing of opioids, in the setting of indications and guidelines for use and prescription of opioids, and in advertisement to health professionals or members of the public. Finally, opioid-use disorders must be recognised as medical problems and not criminalised, and evidence-based treatment for these problems should be made available to all who need them.

We call on countries, through their respective ministries of health, to launch new interinstitutional advisory groups (or to strengthen existing ones) that include palliative care and pain clinicians, civil society, and academics (including health economists and legal experts) to provide official and expert advice on policy related to palliative care and pain relief on a regular basis. In countries where such committees are not in place, we call on civil society to establish and host these groups as an interim step.

International and balanced collective action is essential to achieving universal coverage of palliative care and pain relief by facilitating effective access to essential medicines, while implementing measures to prevent non-medical use

Accountability is a major challenge in palliative care, as it is for the global health system overall, because there is no clearly definable institution to mandate corrective action. We propose a global mechanism with a clear accountability framework to ensure progress on universal coverage of palliative care and pain relief. Given the interinstitutional nature of palliative care stewardship and the limitations of WHO in holding member states accountable, the Commission proposes a multistakeholder, accountability-focused group to measure and regularly report on the progress of both global and national institutions. As a key stakeholder, the private sector is called upon to promote an enabling environment for averting SHS. The *Lancet* Commission on Essential Medicines put forward similar proposals, and we propose working jointly, at least on medicines for pain relief.^{44,336} Accountability through monitoring and evaluation are essential for success, and this requires either separate and independent global and national commissions or a group working alongside institutions dedicated to achieving the SDGs.

The 2014 WHA Resolution is a powerful document, but according to the reports from both WHO³³ and civil society,^{347,348} few countries have made real progress, and the resolution does not include an accountability framework. The Commission calls on WHO to follow on the Resolution with an accountability mechanism that includes specific indicators, associated targets, and recommendations for corrective action. Lessons can be learned from examples such the AIDS response and framework conventions.³⁹ Donor countries should make funds available to fully implement the resolution and to develop the global public knowledge goods that are essential implementation and advocacy tools.

Intersectoral work should ideally be led by WHO, although global, non-for-profit organisations have often filled this vacuum in ways that are laudable but not sustainable or effective in the long term. Although these organisations were catalytic in bringing about the landmark 2014 WHA Resolution on palliative care, WHO and other UN agencies are the forum for implementing the recommendations in the Resolution and the monitoring work outlined in this document.

Potential synergistic linkages exist between the palliative care and non-communicable diseases movements,²⁷⁵ and the integration of policy, planning, and advocacy could lead to progress in both movements. Ageing, long-term care, and palliative care will become increasingly linked as demographic transition proceeds in LMICs. Falsely dichotomising these issues would reduce the opportunities to identify and implement diagonal interventions and joint platforms for action and policy research that can be effective in identifying synergies.

The huge unmet medical need for effective medicines for pain treatment demands a more balanced global policy to ensure that patients have safe and secure access while still preventing non-medical use. The global health system must maximise its potential to add value by taking steps to dismantle unnecessary access barriers to pain treatment and to develop model procedures and legislation that can guide national actors in handling medicines that could be diverted to non-medical use. The Commission also calls on the INCB to include access to opioids for medical need in its annual reporting.

Countries could have large potential savings on the cost of order if they had access to best-case international prices. Global collective action has an important opportunity to aggregate demand and support LMICs with information and negotiating capacity to secure low and stable prices, especially for injectable morphine. The Commission recommends that regional or global pooled purchasing facilities be established and led by a global financing entity such as the World Bank and that these be integrated into existing global and regional funds, WHO offices, and development banks.

Innovative product development and adaptation of existing formulations of medicines and equipment for low-resource settings will reduce cost and facilitate delivery, which will be necessary to achieve universal access to palliative care and pain relief. The Commission recommends a focus on promoting and facilitating international and interinstitutional exchange, including public-private partnerships, that generates frugal innovation and collaboration platforms.

Palliative care is almost never prioritised in emergency situations. The Commission calls on all international agencies to ensure that palliative care becomes an essential component of any response to humanitarian emergencies, natural disasters, and refugee crises.

Children continue to be an at-risk and neglected group, despite regional and global advocacy efforts to include

them in the palliative care agenda.¹¹⁴ To remedy this, the Commission puts forward several child-focused recommendations. We call on the World Bank, working with UNICEF, to spearhead an interinstitutional initiative to establish a special fund for children in low-income countries who are in need of palliative care and pain relief. A fund should include for all countries, and especially for LMICs, technical support for safe delivery and management of medicines and support for efforts to expand access to essential palliative care interventions, beginning with health. The cost of closing the pain divide for children is a pittance, and continuing to ignore this need violates the spirit, content, and aspirations of the SDGs. Furthermore, such a fund can provide a financing platform to catalyse provision of other medicines for treatment of chronic and non-communicable diseases for adults and children.

Better evidence and priority setting tools must be generated to adequately measure the global need for palliative care, implement policies and programmes, and monitor progress towards alleviating the burden of pain and other types of SHS

The Commission's work suggests the imperative of implementing a rigorous, vigorous, and substantive research agenda that provides the key knowledge inputs for closing the access abyss in palliative care and pain relief and the tools to both set and monitor global and national priorities and progress.

First we recommend the development of a strong set of metrics for priority setting in palliative care and pain relief. SHS has not been adequately measured or included in datasets, making the need for palliative care and pain relief largely invisible to policy makers and preventing health leaders from identifying effective responses that would integrate palliative care into UHC. The framework proposed by the Commission is a first step, and we recommend that a major research endeavour be mounted to develop the metrics and data to more effectively estimate the burden of SHS, to identify the associated need for palliative care and pain relief, and to measure the effect and effectiveness of future policies and programmes. This data collection strategy should incorporate social, spiritual, and caregiver needs in the need for palliative care.

We propose a measure of suffering intensity-adjusted life-years (SALYs), against which the efficacy of interventions could be judged in terms of SHS averted. SALYs should first be explored as an adaptation of existing measures of burden of ill health (QALYs and DALYs) to develop a comprehensive measure for economic evaluations of resources allocated across prevention, treatment, and palliation. By summing the benefits of financial protection and the diagonal benefits that accrue to other parts of the health and social system, such a measure would account for the value of alleviating SHS to the patient, the family, the health system, and the

economy. Comparing these benefits with the cost of the Essential Package and augmented packages through extended cost-effectiveness analysis would provide key information for choices around public finance.

These powerful priority-setting tools must translate into effective policies and programmes for countries seeking efficient and equitable health care and UHC. Implementation research and rigorous evaluation of both small-scale and large-scale palliative care activities, and their integration into UHC, are key to identifying replicable and scalable models and to measuring potential for reducing SHS and for cost savings. Documenting and disseminating successful country experiences and programmes to monitor and prevent non-medical use of opioids and research that evaluates outcomes in areas where access has been increased can provide further proof of concept for applying a balanced approach.

The Commission recommends that high priority be given to developing augmented palliative care packages with tools for choosing cost-effective interventions. This work should examine and assess human resource models with training based on competencies and with the incorporation of community health workers, nurses, and other health personnel. The needs for social support should be met through antipoverty and social welfare programmes, whereas research is needed to develop and evaluate intersectoral models that integrate health and other key interventions. Finally, the many opportunities for frugal innovation and for the use of innovative technology to extend the Essential Package and coverage should be reviewed in future research (panel 13).

The stark differences between countries in the prices paid for medicines in the Essential Package, especially for morphine, merits future research. First, complete price data should be gathered and the cost of improving supply chains analysed. Second, the role of the supply side and market organisation in generating these price differences should be analysed. Finally, consideration of the various models for price negotiation and aggregating demand, such as those used by the Clinton Health Access Initiative, PAHO, and the Global Fund, could provide relevant lessons for price stabilisation.

Detailed analysis of country-specific health systems as case examples can serve as a global public good for knowledge exchange and systems strengthening. Effective and efficient translation of policy to practise relies on explicit research on service planning at national and global level across the delivery chain. Country-specific analysis should be undertaken to map health services and points for palliative care integration and to identify potential systems levers for strengthening delivery. Integration of palliative care and UHC in LMICs could be accelerated by research on existing models.

Palliative care and pain relief interventions and policies are highly intersectoral. A complete and

periodically updated political mapping exercise should be undertaken by WHO to strengthen global stewardship. Countries would benefit from a similar political mapping exercise.

Women carry a disproportionate burden of caregiving, so expanding palliative care will have collateral effects on the health, education, empowerment, and earnings capacity of women and girls. Future research should pinpoint these risks and identify effective gender proactive strategies and policies that value the contributions of women and caregiving. We recommend that national governments, based on this evidence, develop and implement gender-proactive and health-enhancing labour market policies that allow men and women to provide safe and supportive caregiving as a complement to palliative care.¹²⁵

Palliative care has been marginalised within global health, but as the issue gains traction, it is becoming evident that there are specific population groups and diseases that are marginalised even within palliative care. Their needs must be identified through research. Little is known about gender inequity in access to palliative care, and this factor should be built into efforts to integrate palliative care into UHC. Malignant neoplasms and HIV disease have received the most attention in clinical, academic, and advocacy work on palliative care and pain relief. Certain cancers have been ignored because of the nature of the symptoms or the poverty of the affected groups. Similarly, certain groups of patients who live with HIV disease are at particular risk of stigma and exclusion.³⁹ Most other diseases that generate SHS, several of which are described in this Report, have been largely ignored in palliative care research and service provision, and this needs to be addressed through research and policy.

Vulnerable population groups such as children, elderly people, refugees, internally displaced persons and migrants, individuals affected by natural disasters and complex emergencies, and individuals in extreme poverty, have special needs and face additional barriers to accessing and using palliative care and pain relief. Innovative programmes are needed, and we call for future *Lancet* Commissions to focus on these groups, beginning with children and humanitarian emergencies.

We call on academia to promote and incorporate this agenda in its own research agenda and in research training and fundraising across all disciplines, including medicine, nursing, and the social sciences. International organisations, national governments, and civil society have an important role in monitoring scientific outputs, identifying gaps, and guiding resources for data collection and research on the neglected topic of palliative care and pain relief in LMICs. To support the research streams, non-governmental and governmental research funding agencies and foundations should incorporate palliative care and pain relief in their health and social development priorities.

Contributors

FMK was Chair of the Commission and PEF was co-Chair of the Commission. FMK, PEF, JF, ELK, LDL, and ABh developed the original idea for the Commission. PEF, RA, KMF, JF, DTJ, and MRR with FMK, EK, LDL, and ABh guided the structure and substantive focus of the report. FMK developed the scope and work plan of the Commission, participated in all working groups with the chairs, chaired the Commission meetings, led the Secretariat, led the data analysis, wrote all drafts of the report with editing and revision input from PEF, ELK, LDL, GAOA, SRC, DJH, DL, LR, and MdRSM, and secured and then managed the funding for the Secretariat and the Commission with support from KF, JS, RA, and ABh. LDL, ELK, and MRR co-chaired the Models and Innovations Working Group. DTJ and SV co-chaired the Economic Evaluation and Measurement Working Group. RA chaired the Universal Health Coverage, Health Systems, and Palliative Care Working Group. Chairs of the three working groups developed the substantive focus, guided and analysed inputs produced by their respective groups. The working groups dedicated time and thought to capturing country-specific lessons and did the epidemiological, economic, and health-systems analysis. ELK led the Clinical Expert Group, which included LR, MRR, KMF, JFC, SA, CRN, PEP-C, MC, DS, and MG; developed the dataset on SHS, the Essential Package, and the costing analysis together with the Economic Evaluation and Measurement Group and Clinical Expert Group; collected the data on SHS, and compiled the dataset with XJK; provided text inputs for the report; and worked with the data analysis team to interpret all findings. LDL managed and developed the plan of the follow-up to the Commission and engagement of civil society and regional networks, with input from MRR, FMK, JD, SC, CG, EL, DS, EK, KF, and LR; provided text inputs for the report; developed conclusions and recommendations; managed and wrote testimonials; and wrote a case on Colombia. FMK and ABh led the core writing team, which included XJK, HA-O, OG-D, and NMR. FMK led the data analysis team, which included XJK, HA-O, ABh, NMR, and OMC, with contributions from CRN, QTK, PEP-C, and MdRSM. JF served as health systems and global health lead, working with OG-D. All Commissioners provided input into the formative discussions that generated the scope and work plan of the Commission and contributed ideas and substantive comments throughout the Commission process that shaped the content, findings, key messages, and conclusions of the Report. All Scientific Advisory Committee members contributed to sections related to their topic, country, and region expertise and provided core inputs in the form of quantitative, qualitative or health-systems data, and data analysis. DC wrote the panel on the history of palliative care. ME wrote the panel on training of clergy. NB wrote the panel on complex emergencies and provided guidance on the analysis of infectious diseases and emerging pathogens. The core country cases were led by JJ with PEP-C (Chile), LDL with NMR (Colombia), RS (Costa Rica), ABh and MRR (India), DS (Jamaica), HA-SH (Lebanon), EK with EW (Malawi), FMK (Mexico), BP (Nepal), ABi (Rwanda), LG (South Africa), EBKL (Uganda), SRC (USA), and ELK (Vietnam). JDD provided core input into the work on children's palliative care, and CZ provided core input to the work on early initiation of palliative care and both provided extensive comments and text inputs, initially as reviewers. All by-line authors and members of the study group contributed to the ideas and recommendations and to the structure of the report. All authors approved the final submitted version of the report. The report was prepared under the general direction of FMK. The authors alone are responsible for the views expressed in this Report, and they do not necessarily represent the views, decisions, or policies of the institutions with which they are affiliated.

Lancet Commission on Palliative Care and Pain Relief Study Group

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