

Opinion

Life support to prolong the process of dying – a case of inappropriate diffusion of technology

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Abstract

Diffusion of technology from the developed to the developing world has its own merits and demerits. While technological breakthrough has immensely helped in primary preventative healthcare, the use of high-technology life support systems in tertiary healthcare has many distinct disadvantages. This article makes a case for the inappropriate use of life support systems to prolong the process of death in the Caribbean countries and argues that such diffusion of technology is wasteful in many dimensions.

Introduction

In modern times, all branches of medicine have grown exponentially. Most notably, intensive care medicine has developed beyond one's imagination, heralded by the availability of high-technology support systems for every failing organ of the human body. In fact, there has been a cultural change and people have started thinking that death is preventable with the help of technology[11]. Because of this 'death denying' notion of the society, intensive care unit (ICU) admissions have increased over time and dying on a ventilator has become common in most countries. The Time magazine in 2000 reported that while 70% of Americans wanted to die at home, 75% died in hospitals and at least 30% died in the ICU[6]. In Canada, a survey showed that approximately 70% of the population dies in the hospital and 50% of deaths occur in the ICU[12]. The Study to Understand Prognoses and Preferences for Outcomes and Risks of Treatments (SUPPORT) trial showed that people do not want to die in a medical institution but if this happens, the relatives face immense financial hardships[24]. There have been widespread myths and misconceptions about the value of cardiopulmonary resuscitation, which are especially hyped by the television[8]. In fact, in the United States of America, elderly people living in the nursing homes were explained about the stark reality of the outcomes following cardiopulmonary resuscitation in order to dissuade them from getting into an ICU[19]. This is because potentially every death could be intervened and life support systems could be used to prolong death, which is ultimately inevitable. In other words, in the modern medical age, death has become more of a 'process' rather than an 'event'. In this context, it may be worthwhile evaluating the application of the high-technology life support systems in end-of-life care. This is especially because, in this type of care, there are a considerable number of interventions which are of questionable benefit.

Curative medicine or standards of living?

Four decades ago, Thomas McKeown put forward a highly disputed theory in social demography. He regarded the claims

of curative medicine in decreasing the human mortality as exaggerated[18]. He emphasized that the primary factors responsible for most health-improvements in developed nations were economic growth, rising living standards, and improved nutrition[17]. Subsequent body of research discredited his view and clearly established the value of curative medicine[14,22,23,26]. Although some authors have called for the burial of the McKeown debate[10], there is still a considerable influence of his theory as an underlying premise on which health policies are decided, especially with respect to long-term health improvements of the society[1,16,20]. There has been an enduring influence of his theories causing a continuing resonance, at least in the arena of public health and health policies[7]. In the present context of using high-technology systems to prolong life, it may be worth revisiting the inquiries of McKeown. McKeown's question may be modified to see whether intensive care medicine has contributed to the overall improvement in the mortality when compared to the improvement afforded by well functioning preventative healthcare strategies. Although intuitively one may be inclined to think that the value of primary healthcare intervention and preventative care should be better than tertiary care high-technology life prolonging interventions, there is little concrete data and studies to support this theory.

What is the reality of end-of-life care?

Beyond a certain level, physicians lack perfect and definitive information of application of high-technology healthcare in many illnesses, and this type of care is offered just because it is available as an option[3]. For example, let us consider an elderly patient with uncontrolled diabetes and hypertension who developed sepsis and multiorgan system failure, had a cardiac arrest in the Emergency Room and was resuscitated. Organ support for this patient is readily offered by high-technology medicine. According to the existing standards of practice, in most countries where ICU facilities are easily available, the patient will be invariably admitted to the ICU for providing organ support. But, most clinicians will agree that the overall prognosis of the patient is extremely poor and death is most likely the outcome. This is a clear situation where high-technology healthcare will not improve the outcome but consume a vast quantity of resources to provide support to the patient until the inevitable happens. In other words, new technologies may not 'decrease mortality' as many of the studies would have us to believe, they would rather delay it[9]. In the aforementioned example, it is quite obvious that if there are effective resources to diagnose, monitor and address the original conditions at a primary healthcare level, the chances that the patient requiring a high-technology support becomes minimal.

‘Diffusion’ or ‘imposition’ of technology?

Although euphemistically termed as ‘diffusion of technology’, the paradigm of tertiary care high-technology life prolonging interventions are predominantly an imposition of technology from the developed to the developing world.

According to Weisbrod, a health economist, technology should be addressed on three levels, depending on what it achieves[25]:

1. “Non-technology” helps prevent disease and is relatively inexpensive
2. “Half-way” technology is supportive, but it does not cure the disease and is expensive
3. “High-technology” addresses the disease directly and is also expensive

Non-technology interventions such as preventive measures, e.g., vaccinations are well established to be beneficial for the societal improvement. Half-way technology such as haemodialysis does not cure a disease but may keep the patients alive consuming vast resources. High-technology such as intensive care medicine may attempt to address the cause of the disease and also consume a huge amount of resources. However, it is unclear if the potential of the high-technology to address the disease has exponentially improved the overall outcomes in relation to the expenditure incurred by it[4,5]. In fact, according to the production curve of Kindig, the investment in high-technology health care plateaus at a certain level and further expenditure only leads to decline in outcomes[15].

The health expenditure for less than 1 billion people living in the world’s developed countries (US\$ 2736 per capita) is 130 times the 2.5 billion people living in the under-developed countries (US \$21 per capita)[28]. The average cost of one high-technological medical intervention is much higher than the annual per capita health expenditure in many developing countries[28]. Although a ‘vitalistic’ perspective may favour an opinion that anything should be done to ‘save’ life, prolonging such a ‘life’ by a high-technological medical intervention will not achieve the desired form of life.

Although it is clear that only technology which has been clearly established to be useful and cost-effective should be transferred to other countries, ‘utility’ and ‘cost effectiveness’ in one country may not be pertinent to another country. But due to marketing strategies and goals of short-term profits there is a probable ‘imposition’ of technology from the ‘developed’ to the ‘developing’ world. Many developing countries in Latin America and the Caribbean do not have clear statutory requirements of local healthcare technology assessment (HTA)[2]. Even in countries where HTA is a requirement, ethical dimensions have not been routinely incorporated into this exercise[13]. Hence, there is a possibility that many technologies are locally adopted either by industry push and/or whims of the healthcare provider.

The author’s previous research and personal observations have shown that in countries such as Barbados and Trinidad, life-prolonging high-technology interventions are continued until the inevitable happens[11]. Most medical professionals in these countries are trained elsewhere (especially in the developed world) and there is often misconception and confusion in application of technology during end-of-life care.

How to address this issue?

Education of the society is utmost important in this issue. A patient’s right to refuse treatment is often confused with the right to demand it. Refusal to undergo treatment is a well-defined constitutional right. By the same token, a patient cannot demand a specific intervention just because it is available[27]. It is always the physician’s prerogative to select the appropriate management for an individual patient, although the patient has the right to either refuse or choose from the different modalities of treatment put forward by the physician. Physicians cannot do what nature does not allow, should not do what professional integrity does not allow and cannot hope for miracles to happen[21].

Currently, in many countries of the English-speaking Caribbean, except Trinidad and Tobago, there is no statute that makes provision for discontinuation of life-support measures even if the patient is clinically pronounced to be brain-dead. There is no law for the recognition of Living Wills or ‘Do-Not-Resuscitate’ instructions given by a patient. Although these measures can be defended in a court because they are recognized by the common law, many healthcare practitioners do not wish to get entangled in legal proceedings. This most often results in continuation of the life-support until the patient eventually dies[11]. Trinidad and Tobago does have a statute in place that would allow the transplantation of organs from ‘heart-beating donors’; but still many healthcare providers are unaware of this and some do not wish to take any chance.

There should be change in the perspectives of the society regarding the utility of intensive care units during end-of-life care. The healthcare providers should be well informed regarding the ethical and legal issues of such care, especially contextualized to the local and/or regional perspectives. The Governments should formulate legal statutes to assist healthcare providers taking firm decisions. Many hospitals in the Caribbean do not have established “Ethics Committees” which needs to be addressed.

In summary, the application of life-support technology application to prolong the process of death in the ICU is inappropriate by many dimensions and should be strongly desisted.

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