Review Article

Improving Primary Health Care: A Systematic Review

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Abstract

Primary health care is the key to build a strong healthcare system. Despite the advances already achieved, the development of approaches to improve the services and practices to respond to challenges are required. This review aims to show approaches or strategies to improve primary health care. Searches were conducted in CINAHL, MEDLINE and SCIELO to identify literature from 2011 to 2015. The inclusion criteria was empirical studies addressed to relevant strategies related to primary health care attributes. The major articles were related to support of care, programs or models to manage the practices, and technology tools. Fourteen articles were related to strategies to improve chronic illnesses care. Seventeen articles aimed to improve coordination of care or comprehensiveness. The intervention strategies related to support of care through mobile or email communication in general were effective in the control of cardiovascular risk factors or chronic conditions. Technology tools showed potential for directly engaging patients in their care and improving the feasibility of collecting aggregate data from independent practices. Sharing experiences and effective practices is an important tool to develop primary health care, and this review may be a relevant mechanism to identify challenges and possible solutions to overcome obstacles and achieve better health outcomes.

INTRODUCTION

The contribution of primary health care (PHC) to improvements in public health has been widely recognized by the international community. There is no longer any doubt of the importance of PHC as the key to building a strong healthcare system that ensures effectiveness, efficiency, and health equity. This importance was first demonstrated in "The International Conference on Primary Health Care", in Alma-Ata in 1978. The international conference called for urgent and effective national and international action to develop and implement PHC throughout the world and particularly in developing countries [1]. According to the Alma-Ata Declaration, the World Health Organization (WHO) proposed a global goal of achieving universal PHC in the six domains: first contact, longitudinality or ongoing care, comprehensiveness, coordination, person or family-centeredness, and community orientation. These six attributes, agreed upon internationally, have proven effective in identifying breadth and scope of PHC services and monitoring quality outcomes [2].

Interest in PHC development goes well beyond exploring what the system can implement at the governmental, societal, and institutional level to promote service delivery, but improving the services, according to the core principles of PHC, to reach the best outcomes in quality and effectiveness. Numerous studies have disclosed various practices to improve PHC outcomes worldwide. Exchanging experiences across countries and distinct cultures are important to show unique resources that are available to achieve better results. Sharing challenges and opportunities to develop healthcare systems may contribute to the triple aim of better individual care, better population health, and lower costs. This review of literature aims to show approaches or strategies to improve PHC around the world in the last five years. Thus, we intend to demonstrate how different places have developed their health services to strengthen the PHC attributes.

BACKGROUND

Primary health care was placed at the center of the international health agenda in 1978 through the Declaration of Alma-Ata, which was accepted at an International Conference on Primary Health Care. The Declaration of Alma-Ata states that "Primary health care is essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination. It forms an integral part of both the country's
health system of which it is the central function and the main focus of the overall social and economic development of the community” [1].

Thirty years after Alma-Ata, there was renewed dialogue about the role of PHC in the international health agenda. In 2008, the WHO published the World Health Report “Primary Health Care- Now More Than Ever” [3], which revisited the ambitious vision of PHC as a set of values and principles for guiding the development of health systems. This report represented an important opportunity to draw on the lessons of the past, consider the challenges that lie ahead, and identify major ways for health systems to narrow the intolerable gaps in access between aspiration and implementation.

**Primary health care attributes**

Starfield [4], defined PHC as the first level of assistance within the health system, characterized mainly by the continuity and completeness of the attention, in addition to the coordination of assistance within the system itself, family-centered care, guidance and community participation and the cultural competence of professionals. Following this definition, the four essential PHC attributes were established: access/first-contact care, ongoing care, comprehensiveness and coordination of care. In addition to the four essential PHC attributes, three other derivative attributes (family centeredness, community orientation, and cultural competence) were included [5]. These attributes can be assessed separately, despite being closely interrelated in practice. The empirical identification of such attributes allows determining the association between these attributes and the outcomes of the delivered care on the targeted population’s health [6].

**Health outcomes**

The current health setting shows improvements worldwide, and PHC has been extremely important in strengthening it. Positive outcomes are described in the Millennium Development Goals Report 2015. This report showed that the global under-five mortality rate has declined by more than half, dropping from 90 to 43 deaths per 1,000 live births between 1990 and 2015. Since 1990, the maternal mortality ratio has declined by 45 percent worldwide; skilled health personnel assisted more than 71 percent of births globally in 2014, an increase from 59 percent. New HIV (Human Immunodeficiency Virus) infections fell by approximately 40 percent between 2000 and 2013. The global malaria incidence rate has fallen by an estimated 37 percent and the mortality rate by 58 percent. The tuberculosis mortality rate fell by 45 percent and the prevalence rate by 41 percent between 1990 and 2013 [7].

The investments in health improved as well, the total expenditure on health as percentage of gross domestic product (GDP) increased from 7.7 in 2000 to 8.6 in 2012 [8]. In both developed and developing countries, PHC has been demonstrated to be associated with enhanced access to healthcare services, better health outcomes, and a decrease in hospitalization and use of emergency department visits [2].

**Improving primary health care**

The international literature has identified different pathways through which PHC has a positive impact on population health, which include increasing access to needed services, improvements in quality of care, emphasis on health promotion and preventive care, early management of disease, and reduction of unnecessary or even deleterious care. These results have been most frequently associated with integrated PHC, understood as services that are community-oriented, provide continuity of care, and offer appropriate mechanisms for referrals and counter-referrals to higher levels of care, as needed [9].

The technological revolution has enormous potential to improve PHC in the areas of medical records, information sharing among healthcare providers, and rapid access to reliable medical information for both physicians and patients. Use of technology is associated with improvements in coordination of the care and ongoing care. Before 2000, Australia and England had already implemented highly successful national programs to promote the use of electronic medical records in PHC. Other countries, including New Zealand and the Netherlands, had also achieved substantial success [10]. Moreover, models to improve access to PHC through telephone have been used for a long time. In 1998, a study developed in England showed that telephone consultation allowed faster access to health information and advice [11].

Despite the advances achieved in the last decades, expectations of health authorities and citizens grow for better performance to respond to new health challenges of a changing world. The development of approaches to improve the quality and effectiveness of PHC services and practices, strengthening its attributes, are required. The literature reviewed here about international PHC experiences illustrates the assorted strategies implemented or updated in different countries to achieve better health outcomes.

**METHODS**

Searches were conducted in CINAHL, MEDLINE and SCIELO to identify literature from 2011 to 2015 in order to build upon prior reviews of international experiences to improve PHC. Keywords included “primary health care”, “advances”, “improvement” and “innovation” in English, Portuguese and Spanish. Additional important articles were subsequently located by examining the reference lists. The inclusion criterion was empirical studies that addressed relevant approaches or strategies related to PHC attributes. Searches were limited to journal articles, therefore dissertations, conference proceedings, and editorial pieces were excluded. Articles focusing on clinical procedures related to treatment of specific disease were excluded as well.

**RESULTS**

This search yielded approximately 580 articles with 106 meeting the major inclusion criterion of being research-based. Upon closer examination and critique, 15 articles were empirical in nature and addressed relevant and innovative approaches or strategies related to essential or derivative attributes of PHC. Seven more articles were added after examining the reference lists, resulting in 22 articles (Table 1).

**MAJOR STUDY CHARACTERISTICS**

**Language and country**

Of the 22 articles reviewed, 16 were written in English, 3 in Portuguese and 3 in Spanish. Ten of these were from the United States, 5 each from Europe, and 1 each from Africa, Asia, and South America.
## Table 1: Studies of international experiences to improve primary health care.

<table>
<thead>
<tr>
<th>Author/Date</th>
<th>Country</th>
<th>Strategy or approach</th>
<th>Purpose</th>
<th>PHC Attribute/Health condition</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Almeida et al, 2011 [18].</td>
<td>Brazil</td>
<td>Strategy or approach: Embrace; Matrix support; expanding access to diagnostic support (laboratory network) and therapeutic (expanded pharmaceutical care).</td>
<td>To describe and analyze actions taken in four urban centers to strengthen the Family Health Strategy.</td>
<td>PHC attribute: Coordination of care Health condition: General health care</td>
<td>1. Increasing the number of services offered at the PHC level; 2. Enhancing problem-solving capacity (diagnostic and therapeutic support and networking between health units to organize the work process, training, and supervision); 3. Improving articulation between surveillance and care actions.</td>
</tr>
<tr>
<td>Dirocco et al, 2011 [26].</td>
<td>United States</td>
<td>Strategy or approach: Touch screen kiosk technology.</td>
<td>To determine the feasibility of collecting feedback from patients using touch screen kiosk technology.</td>
<td>PHC attribute: Coordination of care Health condition: General health care</td>
<td>1. Important advance in their ability to capture the patient's opinion regarding quality and practice improvement initiatives; 2. Potential for directly engaging patients in their care.</td>
</tr>
<tr>
<td>Tenforde et al, 2011 [24].</td>
<td>United States</td>
<td>Strategy or approach: Electronic personal health record (PHR).</td>
<td>To measure the association between use of an advanced electronic medical record-linked PHR and diabetes quality measures.</td>
<td>PHC attribute: Coordination of care Health condition: Diabetes Mellitus</td>
<td>1. PHR use, but not intensity of use, was associated with improved diabetes quality measure profiles. 2. PHR use was infrequent.</td>
</tr>
<tr>
<td>Hacihasanoğlu et al, 2011 [16].</td>
<td>Turkey</td>
<td>Strategy or approach: Education on healthy lifestyle behaviors and medication adherence.</td>
<td>To determine the effect of anti-hypertensive patient-oriented education and in-home monitoring for medication adherence and management of hypertension.</td>
<td>PHC attribute: Comprehensiveness Health condition: Hypertension</td>
<td>1. Healthy lifestyle behaviors and perception of self-efficacy regarding medication adherence showed improvement after education sessions. 2. Systolic and diastolic blood pressures of subjects showed a significant decrease compared with those of the control group; 3. The blood pressure decrease was greater in the group which received education about healthy lifestyle behaviors.</td>
</tr>
<tr>
<td>Onocko-Campos et al, 2012 [29].</td>
<td>Brazil</td>
<td>Strategy or approach: Presence of a mental health team at the primary care units; matrix support; Singular Therapeutic Project.</td>
<td>To compare the performance of Primary Care Units according to the implementation of new arrangements and strategies in primary care and mental health.</td>
<td>PHC attribute: Coordination of care Health condition: Mental health care</td>
<td>1. Positive advances were identified in the group with higher implementation of innovative strategies in relation to better integration of the community agents in the Units’ teams; to the facility for referrals and assistance of mental health cases. 2. The difficulties identified were: communication among the levels of care and within the teams, in the implementation of matrix support, and incipient health promotion actions.</td>
</tr>
<tr>
<td>Orueta Sánchez et al, 2012 [19].</td>
<td>Spain</td>
<td>Strategy or approach: Home care facilitation program.</td>
<td>To assess the impact of enrolling in a home care program for chronically dependent elderly people and satisfaction with care.</td>
<td>PHC attribute: Ongoing care Health condition: General chronic conditions</td>
<td>1. Improvement specifically in emotional quality of life and in social relationships. 2. Number of visits decreased, as well as percentage of frequent visitors. 3. Significant improvement in satisfaction with overall care received, and with medical and nursing care.</td>
</tr>
<tr>
<td>Laferriere et al, 2012 [31].</td>
<td>Canada</td>
<td>Strategy or approach: Outreach facilitation program.</td>
<td>To describe outreach facilitation as an effective method of assisting and supporting primary care practices to improve processes and delivery of care.</td>
<td>PHC attribute: Coordination of care Health condition: Cardiovascular risk</td>
<td>1. The primary care group implemented changes in processes to identify patients, to monitor blood pressure every visit, and to record every blood pressure in the electronic medical records. 2. The group decided to set up a diabetes group comprising the diabetes team, clinical, and administrative staff, with the clinical coordinator as the leader.</td>
</tr>
</tbody>
</table>
| Crosson et al, 2012 [25]. | United States | **Strategy or approach:** Electronic health record (EHR).  
**Purpose:** To examine the relationship between EHR use and the quality of chronic illness care in primary care settings. | **PHC attribute:** Coordination of care  
**Health condition:** Diabetes | 1. EHR use was not associated with better adherence to care guidelines or a more rapid improvement in adherence.  
2. The quality of care improved across all practices, rates of improvement did not differ between the EHR use and paper record use. |

| Morrow et al, 2013 [27]. | United States | **Strategy or approach:** Web-based registry and interactive education.  
**Purpose:** To assess the impact of the registry and continuing education to improve diabetes care and clinical outcomes. | **PHC attribute:** Coordination of care  
**Health condition:** Diabetes | 1. Improvement in patient outcomes, as well as the feasibility of collecting aggregate data from unrelated, independent practices. |

| Michael et al, 2013 [20]. | United States | **Strategy or approach:** Dartmouth Micro system Improvement Curriculum framework and the Plan-Do-Study-Act improvement process.  
**Purpose:** To evaluate increase in the patient satisfaction by minimizing wait times. | **PHC attribute:** First contact - access  
**Health condition:** General health care | 1. Significant reductions in the mean waiting room and exam room wait times along with a significant increase in patient satisfaction with waiting room wait time.  
2. No significant changes in patient satisfaction with exam room wait time or the likelihood of referring friends or family were identified. |

| Enard et al, 2013 [33]. | United States | **Strategy or approach:** Patient navigation program  
**Purpose:** To evaluate a patient navigation program designed to promote appropriate primary care utilization and prevent or reduce primary care–related emergency department (PCR-ED) use. | **PHC attribute:** Community orientation  
**Health condition:** General health care | 1. The intervention was associated with decreased odds of returning to the ED among less frequent PCR-ED users.  
2. Among patients who returned to the ED for PCR reasons, the pre/post-mean visits declined significantly over a 12-month pre/post-observation period but not over a 24-month period.  
3. Savings associated with reduced PCR-ED visits were greater than the cost to implement the navigation program. |

| Bello et al, 2013 [12]. | Nigeria | **Strategy or approach:** Supportive supervision.  
**Purpose:** To evaluate the effect of supportive supervision of primary health care workers in malaria case management. | **PHC attribute:** Coordination of care  
**Health condition:** Malaria care | 1. The mean knowledge scores of malaria within the intervention group increased.  
2. The proportion of respondents who correctly followed malaria management guidelines increased.  
3. Improvement in performance of healthcare workers with each supportive supervisory visit in most of the variables examined. |

| Senesael et al, 2013 [12]. | Belgium | **Strategy or approach:** Encouragement by email or letter.  
**Purpose:** To describe the effectiveness of a quality improvement intervention on cardiovascular risk factors for patients at high risk for cardiovascular disease. | **PHC attribute:** Comprehensiveness  
**Health condition:** Cardiovascular risk | 1. There was a significant decrease of systolic and diastolic blood pressure in both study groups.  
2. Weight, body mass index, waist circumference, and smoking did not improve in either group.  
3. Information on cardiovascular risk factors and encouragement by means of letters or email did not provide additional benefits. |

| Kennedy et al, 2013 [17]. | England | **Strategy or approach:** Self-management support.  
**Purpose:** To determine the effectiveness of an intervention to enhance self-management support for patients with chronic conditions. | **PHC attribute:** Comprehensiveness  
**Health condition:** General chronic conditions | 1. No statistically significant differences were found between patients attending trained practices and those attending control practices on any of the primary or secondary outcomes.  
2. All effect size estimates were well below the pre-specified threshold of clinically important difference. |

| Alcayaga et al, 2014 [13]. | Chile | **Strategy or approach:** Mobile communication and monitoring model.  
**Purpose:** To demonstrate the process for designing a mobile communication and monitoring model to facilitate timely diagnosis and initiation of treatment for type 2 diabetes. | **PHC attribute:** Coordination of care  
**Health condition:** Diabetes | 1. Successful implementation of COSMOS (consolidated online modulated operating systems), a technological innovation, to support the health care of people with suspected type 2 diabetes in primary healthcare centers. |
<table>
<thead>
<tr>
<th>Authors</th>
<th>Country</th>
<th>Strategy or approach</th>
<th>PHC attribute</th>
<th>Health condition</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rodrigues et al,</td>
<td>Brazil</td>
<td>Strategy or approach: Virtual Environment.</td>
<td>PHC attribute: Cultural</td>
<td>General chronic conditions</td>
<td>1. The environment obtained excellent acceptance by deaf patients and nurses, allowing great interaction between them, even without an interpreter. 2. The time in consultation was reduced to 15 minutes, with the preservation of patient privacy.</td>
</tr>
<tr>
<td>2014 [28].</td>
<td></td>
<td>Purpose: To present a Virtual Environment based on the Protocol of Treatment of Hypertension and Diabetes Mellitus type 2.</td>
<td>competence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wagner et al, 2014</td>
<td>United States</td>
<td>Strategy or approach: Care Coordination Model with Key Activities Checklist.</td>
<td>PHC attribute: Coordination of care</td>
<td>General health care</td>
<td>1. The analysis provides suggestive evidence that activities consistent with the 4 elements of the Care Coordination Model may enable safety net primary care to better coordinate care for its patients, but further study is clearly needed.</td>
</tr>
<tr>
<td>[21].</td>
<td></td>
<td>Purpose: To examine the utility of a newly developed Care Coordination Model in improving care coordination.</td>
<td>Health condition: General health care</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cicolini et al, 2014</td>
<td>Italy</td>
<td>Strategy or approach: Email alerts and phone calls.</td>
<td>PHC attribute: Comprehensiveness</td>
<td>Cardiovascular risk</td>
<td>1. The NRP-e improved a range of cardiovascular risk factors. 2. The program had low costs, required only an average of &lt;20 min per day in addition to normal practice.</td>
</tr>
<tr>
<td>[14].</td>
<td></td>
<td>Purpose: To evaluate the efficacy of a nurse-led reminder program through email (NRP-e) to improve cardiovascular risk factors among hypertensive adults.</td>
<td>Health condition: Cardiovascular risk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Karlin et al, 2014</td>
<td>United States</td>
<td>Strategy or approach: A mental health (MH) provider into each VA home-based primary care (HBPC) team.</td>
<td>PHC attribute: Coordination of care</td>
<td>Mental health care</td>
<td>1. Significant benefit and feasibility associated with the integration of MH care into interdisciplinary, home-based care. 2. As integral members of the interdisciplinary HBPC team, psychologists and psychiatrists can provide direct MH assessment and intervention services to veterans and families as well as collaborate with the team in consultation, training, and support activities.</td>
</tr>
<tr>
<td>[30].</td>
<td></td>
<td>Purpose: To examine the nature and extent to which MH care processes and practices have been integrated into HBPC nationally.</td>
<td>Health condition: Mental health care</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cygan et al, 2014</td>
<td>United States</td>
<td>Strategy or approach: Weight management program.</td>
<td>PHC attribute: family-centeredness</td>
<td>Obesity</td>
<td>1. Statistically significant improvements to clinical guideline adherence were found in the following areas: correct diagnosis, physical examination, lifestyle assessment, use of motivational interviewing, and prevention strategies.</td>
</tr>
<tr>
<td>[22].</td>
<td></td>
<td>Purpose: To evaluate the impact of a weight management program.</td>
<td>Health condition: Obesity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vikhez et al, 2015</td>
<td>Chile</td>
<td>Strategy or approach: Personalized nursing counseling.</td>
<td>PHC attribute: Comprehensiveness</td>
<td>Cardiovascular risk</td>
<td>1. The intervention strategy was effective in the control of cardiovascular risk factors and in improving quality of life related to health. 2. Qualitative intervention was effective in developing an attitude of &quot;living with an expectation of change&quot; and in creating personal interactions to strengthen such attitude.</td>
</tr>
<tr>
<td>[15].</td>
<td></td>
<td>Purpose: To evaluate the effect of an innovative process of personalized nursing counseling including telephone monitoring on cardiovascular risk factors and quality of life indexes.</td>
<td>Health condition: Cardiovascular risk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haley et al, 2015</td>
<td>United States</td>
<td>Strategy or approach: Tools from Renal Physicians Association toolkit.</td>
<td>PHC attribute: Coordination of care</td>
<td>Renal disease</td>
<td>1. PCPs improved processes for CKD identification, referral to nephrologists, communication, and execution of co-management plans. 2. Nephrologists improved referral and co-management processes. 3. PCP increased the awareness of risk factors, the need to track high-risk patients, and the importance of early referral. 4. Final nephrologist interviews revealed heightened attention to communication and co-management with PCPs and increased levels of satisfaction among all parties.</td>
</tr>
<tr>
<td>[23].</td>
<td></td>
<td>Purpose: To assess practice patterns in the identification of patients with chronic kidney disease (CKD), communication between nephrologists and primary care physicians (PCP), and management of patients with CKD.</td>
<td>Health condition: Renal disease</td>
<td></td>
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</tbody>
</table>

**Abbreviations:** PHC: Primary Health Care

States (U.S.), three from Brazil, two from Chile, and one from each of these countries: Canada, Italy, Spain, Belgium, England, Turkey and Nigeria.

**Strategy or approach**

Six of the 22 articles reviewed were related to support of care, such as mobile or email communication [12-15] and health education [16,17] to improve health outcomes. Other six articles described programs or models to manage the practices in PHC and enhance the outcomes [18-23]. Five articles were related to different technology tools, such as electronic health records [24,25], touch screen device for patient feedback [26], web-based
registry and interactive education [27] and virtual environment for deaf patients [28]. Two articles described strategies to improve mental health care, one was related to matrix support [29], and one described the participation of mental health provider in the home care team [30]. Two articles were related to supervision support to improve practices in PHC [31,32]. One article referred the community health worker as the strategy to bridge the gap between the health system and the patient [33].

**Health condition**

Of the 22 articles reviewed, five were related to general improvement of delivery of care, and not targeted to a specific population [18,20,21,26,33]. Two articles described strategies related to mental health patients [29,30]. One was related to malaria care delivery [32]. The remaining 14 articles were related to strategies or approaches to improve chronic illnesses care, such as diabetes [13,24,25,27], hypertension [16], obesity [22], cardiovascular risk [12,14,15,31], renal disease [23], and general chronic conditions [17,19,28].

**Primary health care attributes**

The articles reviewed described strategies related to more than one PHC attribute, because the attributes are closely interrelated in practice. For this review, the articles were classified according to the most prominent attribute displayed. Thus, 12 articles aimed to improve coordination of care [13,18,12,23-27,29-32]. Five articles were related to comprehensiveness [12,14-17]. One article was related to each one of these attributes: first contact – access [20], ongoing care [19], family-centeredness [22], community orientation [33], and cultural competence [28].

**Study findings related to improvement in primary health care**

The intervention strategies related to support of care through mobile, letter or email communication in general were effective in the control of cardiovascular risk factors or chronic conditions and improving quality of life related to these health. These strategies can also have low costs and require only a few minutes per day in addition to normal practice [14]. Two studies did not get additional benefits through encouragement by means of letters or email [12], or using self-management support as health education method [17].

The several programs or models developed to improve coordination of care showed enhancing problem-solving capacity, such as diagnostic and therapeutic support, networking between health units to organize the work process [18], improving referral and co-management processes [23], decreasing number of visits to health units [19], and significant reductions in the mean waiting room and exam room wait times [20]. Improvement in quality of life and in patient satisfaction was reported as well.

Innovative technology tools showed potential for directly engaging patients in their care [26] and improving the feasibility of collecting aggregate data from unrelated, independent practices [27]. The virtual environment for deaf patients obtained excellent acceptance, allowing a reduction in the time in consultation with the preservation of patient privacy and great interaction between patients and nurses, even without an interpreter [28]. However, electronic health records did not show great results in two studies, their use was not frequent and not associated with better adherence to care guidelines or a more rapid improvement in adherence [24,25].

Participation of different professionals in PHC settings and developing specific healthcare provider roles were effective strategies to improve health outcomes. The insertion of mental health provider in PHC team showed significant benefit and feasibility [30], and the participation of the community health worker in medical homes team reduced preventable emergency department utilization and costs [33]. The presence of other professionals as an effective method of assisting and supporting PHC practices showed improvement in the performance of healthcare teams, processes and delivery of care [31,32].

**DISCUSSION & CONCLUSION**

**Discussion**

Widespread acceptance of the importance of PHC has led to a variety of efforts to promote enhancements intended to strengthen it. The publications reviewed in the last 5 years demonstrated important progress in PHC settings. Developments of strategies that respond to the needs of communities and overcome the common challenges of health performance have produced better outcomes. Effective results were dependent on specific circumstances, such as the structure of health systems, financial support, and health policies.

Starfield and colleagues [34] quoted some mechanisms, alone and in combination, which may account for the beneficial impact of PHC on population health. They are greater access to needed services, better quality of care, a greater focus on prevention, early management of health problems, and the role of PHC in reducing unnecessary and potentially harmful specialist care. The strategies shown in this review follow Starfield’s definition and present relevant outcomes related to access, quality of care, and health management.

Technology tools, such as electronic health records, virtual environments, web-based registry and interactive education, and email and mobile communication, were some of the strategies described in the international experiences. The adoption of technology for remote diagnosis, monitoring and consultation improve the access to health care. A further benefit of using information and communication technologies in PHC services is the improved quality of care [3].

Although the technology is an effective tool, some studies did not reveal better results, for example, two studies in the U.S., related to use of electronic health records in diabetes management, did not showed better adherence of care or were not associated with improved diabetes quality measure profiles [24,25]. According the authors, these results may show the need for greater engagement of the patients in their treatments and ongoing self-management. Worse outcomes may be still related to providers’ burden. They have the responsibility to negotiating the modalities of the treatment schedule with the patients so as to maximize the chances that it can be completed; keeping registries of clients with chronic conditions; and creating communication channels through home visits, liaison with community workers,
telephonic reminders and text messages to re-establish interrupted continuity [3].

The self-management education was another approach addressed in some articles reviewed, through letter, email or mobile communication, web based directory of local self-management resources, web-based registry and interactive education, counseling including telephone monitoring, health education sessions and guidebooks. Supporting self-management strengthens patient engagement in more healthy behaviors and encourages general attitudes and behavioral change. Furthermore, evidence suggests that supporting people to look after themselves can have benefits for quality of life, clinical symptoms and the use of health resources [35].

Although the majority of the studies revealed positive health outcomes through empowerment of patients, the experience in Belgium [12], with regular encouragement by email or letter for patients at high risk for cardiovascular disease, and the intervention in England [13], to enhance self-management support for patients with chronic conditions, did not provide additional benefits. Evidence suggests that long-term benefits may require an ongoing collaborative process between patients and professionals [36].

Bodenheimer and colleagues [37] led a formulation of the essential elements of PHC, called the 10 building blocks of high performing primary care, which has represented a synthesis of the innovative thinking that is transforming PHC in the U.S. One of these building blocks is the template of the future: a daily schedule that does not rely on the 15-minute in-person clinician visit but offers patients a variety of e-visits, telephone encounters, group appointments, and visits with other team members. Clinicians would have fewer and longer in-person visits and protected time for e-visits and telephone visits. With a team empowered to share the care, clinicians would be able to assume a new role - clinical leader and mentor of the team. Perhaps this new arrangement will be present in the future studies related to improvements in PHC settings around the world.

It is important to highlight that patients with chronic diseases were the most targeted population in the articles reviewed. The chronic conditions are increasingly the primary concern of healthcare systems, because they are the leading causes of death and disability worldwide and will cause over three quarters of all deaths in 2030 [38]. Moreover, the burden of chronic disease has major adverse effects on the quality of life of affected individuals and creates large adverse economic effects on families, communities and societies in general [39]. In addition, the elevated cost with chronic conditions and the need of health structure to deliver effective and efficient care, have led the health systems to invest in many strategies to get better outcomes for this population. The lack of benefits related to chronic illness experiences may be associated with many factors; one of these may be the time required for the intervention. The effective control of chronic conditions requires long-term investments in the infrastructure for care [36].

Mental health care is also considered a chronic condition, but it was separated in this review for didactic issues. Approaches developed to improve mental health care, such as matrix support and inclusion of mental health providers in the team, are great relevance because they are affordable and cost effective. Primary health care services for mental health are less expensive than psychiatric hospitals, for patients, communities and governments alike [39].

One of the articles reviewed showed significant benefit and feasibility associated with the integration of mental health care into home based care, and inclusion of psychologists and psychiatrists as integral members of the interdisciplinary home based primary care team, collaborating with the team in consultation, training, and support activities. Collaborative or shared care models, in which joint consultations and interventions are held between primary care workers and mental health specialists, are an especially promising way of providing ongoing training and support [39].

Regarding PHC attributes observed in the articles reviewed, the majority of approaches were mainly related to coordination of care, although it is possible to identify more than one attribute in each study. Coordination of care is identified as a key strategy that has the potential to improve the effectiveness, safety, and efficiency of health care systems. The coordination function provides the institutional framework for mobilizing across sectors to secure the health of communities [3].

Comprehensiveness also was an attribute of PHC present in many approaches; it makes managerial and operational sense and adds value. This may be because having a broad range of services in PHC helps in early diagnosis, treatment, and follow-up care, while also reducing dependence on hospital care [40]. Moreover, it maximizes opportunities for preventive care and health promotion [3].

Health promotion is an important strategy to improve PHC outcomes. It seeks a change of health-related behavior, addressed to the major risk factors of diseases. Risk factor reduction can lead to surprisingly rapid health gains, at both population and individual levels. For example, in interventions for tobacco control, the implementation of tobacco-free policies leads to quick decreases in tobacco use, rates of cardiovascular disease, and hospitalizations from myocardial infarction. Improving diet and physical activity can prevent type 2 diabetes among those at high risk in a very short space of time [41]. Some studies showed that participants who significantly improved their diet and/or physical activity had improved levels of blood pressure, blood glucose, cholesterol and triglycerides as quickly as one year after starting a program [41].

Although health promotion is a relevant dimension of PHC primarily in the prevention of chronic diseases, strategies for health promotion to improve PHC were not observed in the selected articles of this review. This study limitation may be related to the broad keywords. The use of specific terms could reveal interesting approaches in this context.

Other study limitations were also observed. First, the number of articles developed in U.S. was higher than other countries (10 of the 22 articles). This fact may be related the database chosen for this review. More European, Asian and African references would be important to offer different experiences of distinct contexts and health systems. Second, the keywords utilized may have
also limited the results, because important articles were found through reference lists. Perhaps the exploration of keywords related directly PHC attributes could have achieved results that are more specific and targeted to the goals.

CONCLUSION

This systematic review showed a variety of current approaches and strategies from different countries and health systems, such as technology tools, health education and supportive supervision, related to mainly coordination of care and chronic diseases management. The results provide additional support to improve delivery of care and practice performance. Undoubtedly, sharing experiences and effective practices is an important tool to develop PHC, and this review may be a relevant mechanism to identify challenges and possible solutions to overcome obstacles and achieve better health outcomes.

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REFERENCES


35. Ferrer L. Engaging patients, carers and communities for the provision of coordinated/integrated health services: strategies and tools. World Health Organization - Regional Office for Europe; 2015.


