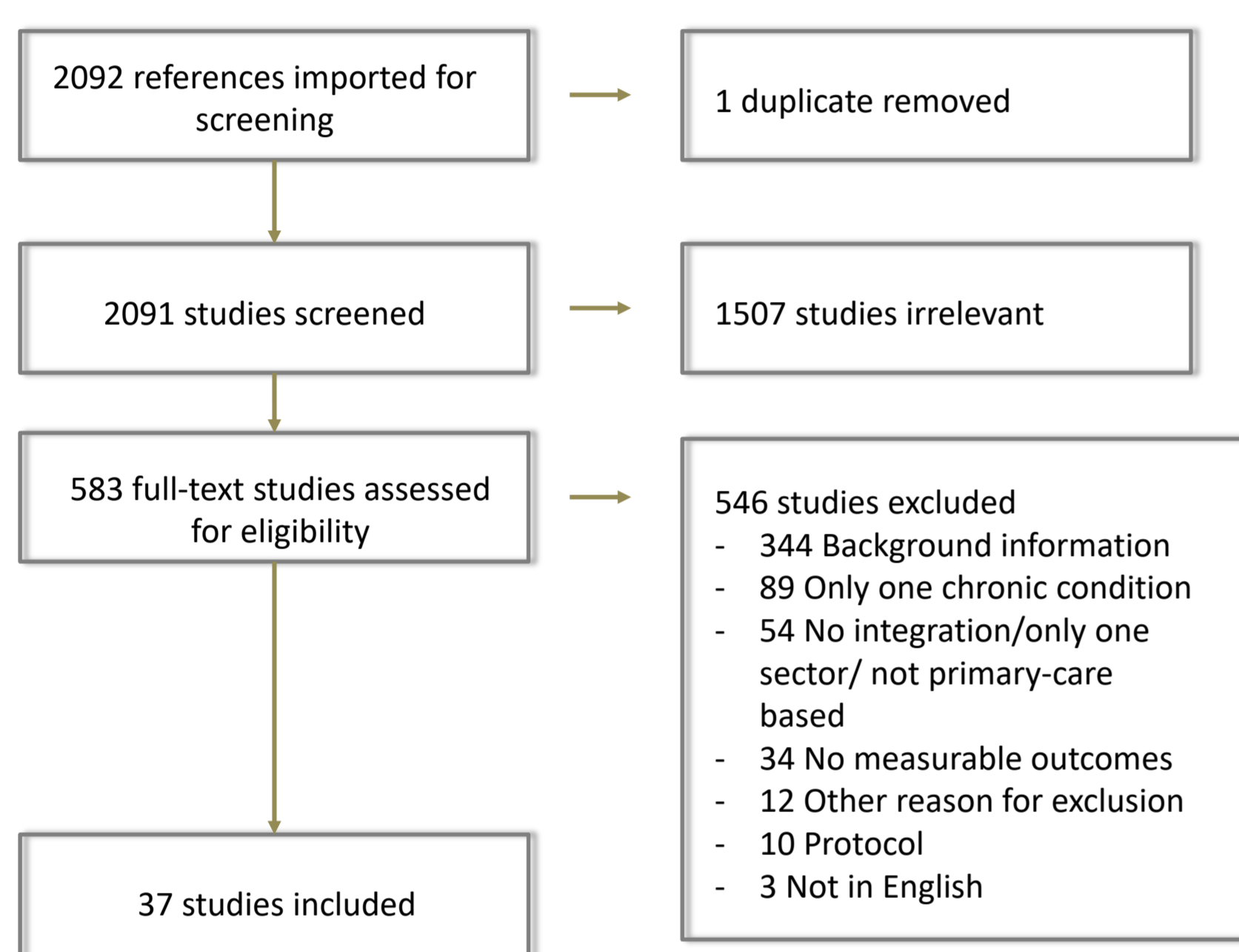


Background: Recent research supports positive associations between system integration strategies and quality care of patients with complex health care needs. However, the evidence describing the key attributes of successful system integration strategies associated with optimal health and clinical outcomes for patients has not been adequately synthesized, nor has the quality of the evidence been assessed. In the absence of synthesized evidence, informed decision-making regarding the critical attributes to implement and support integration in practice and within selected populations becomes difficult. Thus, the overall aim of the project is to conduct a systematic review to determine the critical organizational attributes of primary care based integration strategies associated with optimal patient outcomes for adult patients with chronic health conditions.

Objectives: The objectives of this systematic review were to: (1) identify and assess the quality of the evidence regarding primary care based integration strategies and their impact on patient outcomes for adults with complex health needs; and (2) identify and synthesize common organizational components of effective integration strategies.

Approach: We conducted a systematic review, following Cochrane methods utilized by the Cochrane Public Health Group (CPHG). The primary outcome was clinical effectiveness, as determined through clinical and self-reported patient outcomes. Secondly, we examined the impact on health utilization and costs. The independent variables were primary care based organizational strategies that included integration of services across a minimum of 2 practice sectors for individuals with at least 2 chronic conditions.

Search strategy results



Components and attributes of integration

Components	Attributes
Care coordination using a case management approach	<ul style="list-style-type: none"> Care coordinator Evidence informed guidelines Access to inter-professional team Knowledge and access to community resources Support for self-management (education, monitoring) Provider initiated follow-up Support and engagement of family Support for peer involvement
Physician Involvement	<ul style="list-style-type: none"> Active (funded) Passive
Single point of entry	<ul style="list-style-type: none"> Screening and systematic assessment for risk Systematic notification (i.e. hospitalization or emergency visit)
Informational flow	<ul style="list-style-type: none"> Communication strategy (regular) Electronic
Quality monitoring	<ul style="list-style-type: none"> Systematic monitoring and evaluation and performance reporting

RESULTS

Our search identified 2091 abstracts; 583 full-text articles were reviewed; and 38 articles met the predefined inclusion criteria. Data were extracted and assessed for quality with the CPHG tool. Quality of the evidence ranged from: 7 (18%) strong, 12 (32%) moderate and 19 (50%) weak. Study designs included randomized and controlled trials, cohort studies and interrupted time series studies, and were conducted in the USA (15, 40%), Canada (6, 16%), Australia (4, 11%), Italy (4, 11%), Netherlands (4, 11%), Finland (1, 3%), France (1, 3%), Scotland (1, 3%), Sweden (1, 3%), and United Kingdom (1, 3%). Patient outcomes assessed included clinical indicators, self-reported changes in health and functional status, admission to hospital and home-care, utilization of health services, costs of health services, and survival/mortality.

Figure 1: Proportion of high or moderate quality studies that included selected integration components (n=14)

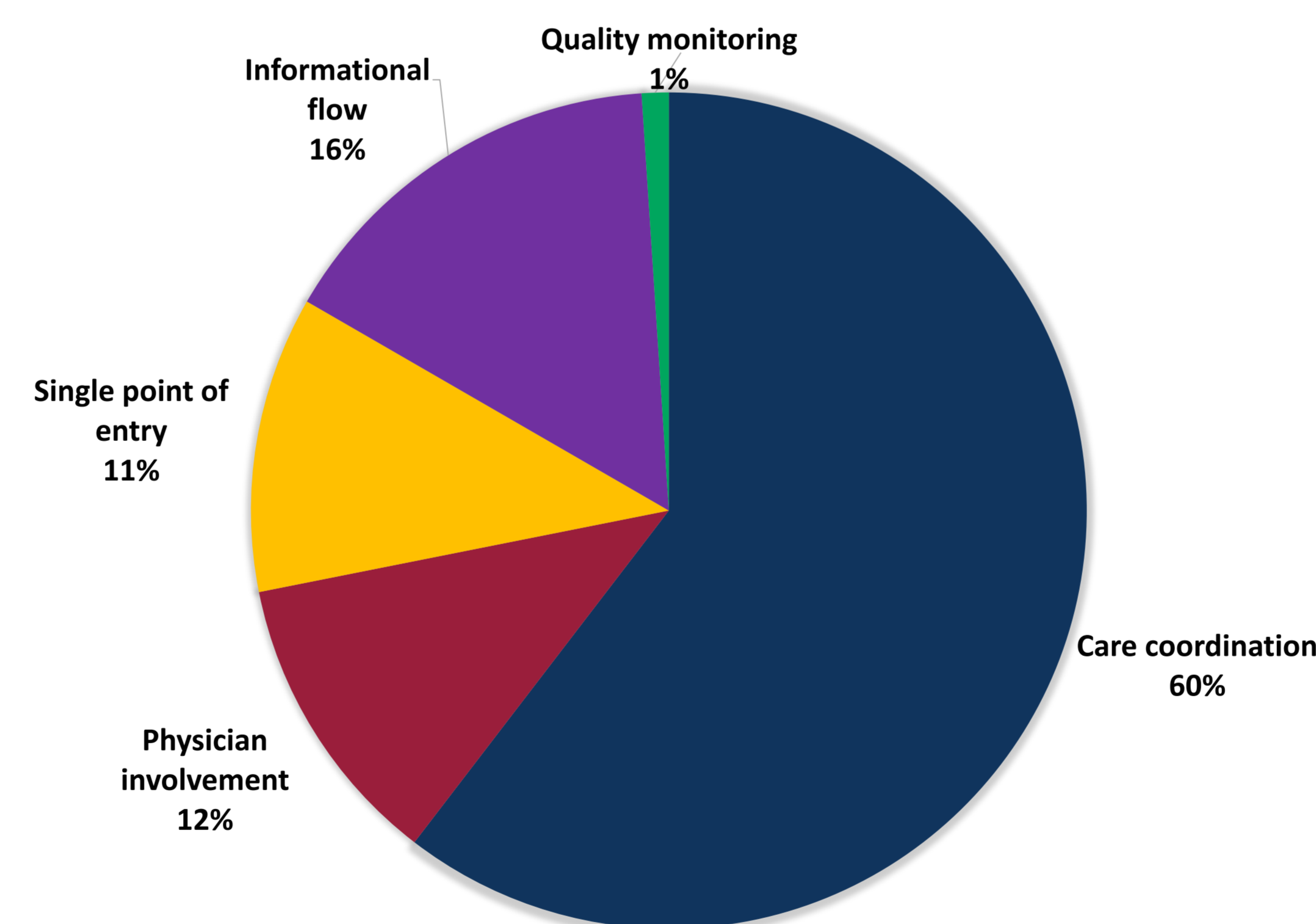
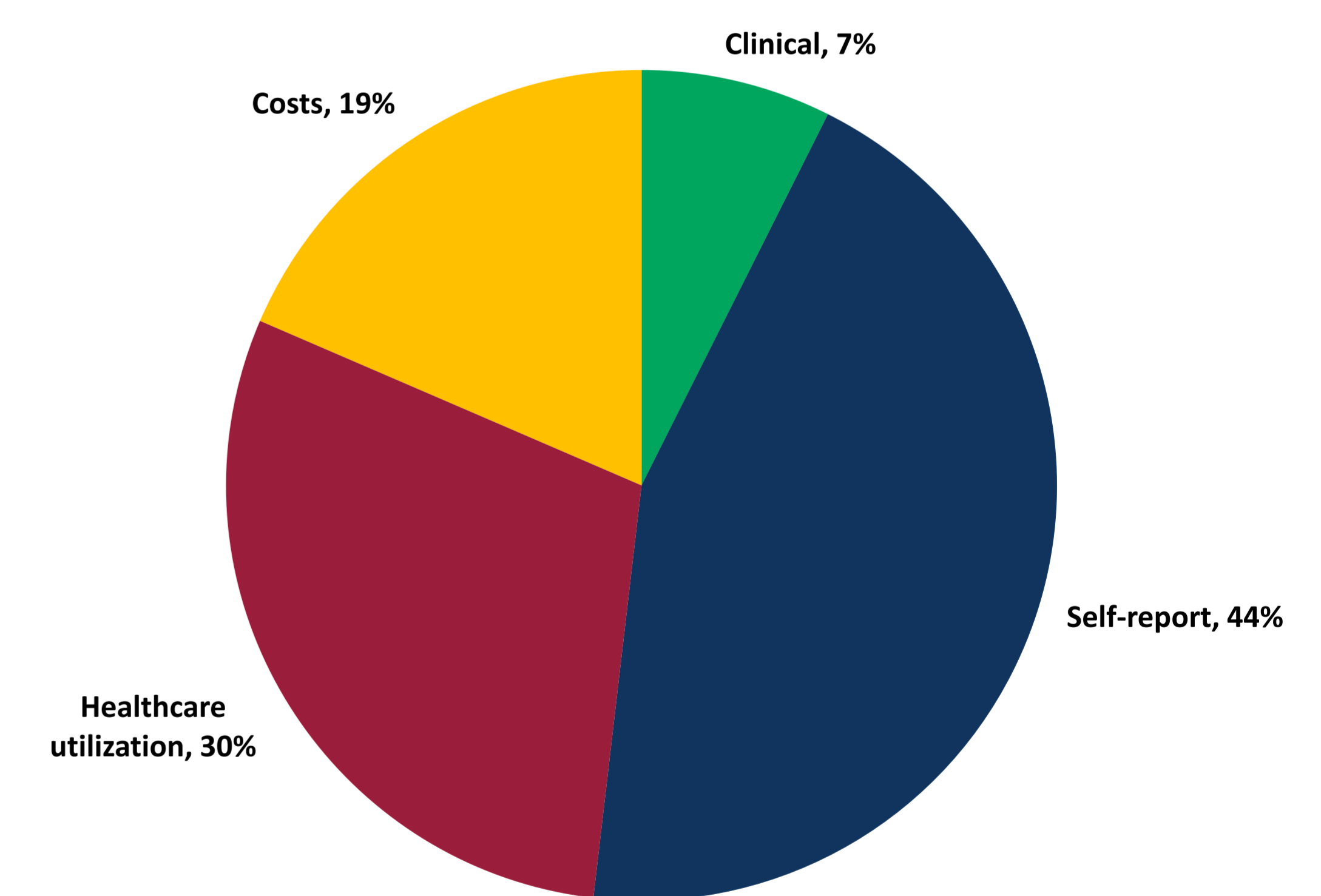


Figure 2: Proportion of high or moderate quality studies that addressed selected outcomes (n=14)



Note: From a total number of 19 high and moderate quality studies, 5 studies were removed after further review by the research team: no measurable outcomes (n = 2); not based in primary care (n= 3).

CONCLUSION

Our interim analysis supports the prevalence of multi-component mechanisms within primary care based integration strategies. Care-coordination is the most prevalent component within system integration. Of the large number of studies reviewed only a few met quality standards, thus it is difficult to determine impact of system integration. However, within the high quality studies, there is a general trend towards positive health outcomes, predominantly assessed by self-report measures or health care utilization. Given the complexity of both integration mechanisms and health system context, we postulate that effective integration occurs when interventions are introduced and sustained with the appropriate component mechanisms within a supportive context, in which the intervention is allowed to evolve and adapt to changing needs. Innovative evaluation strategies are required to determine effectiveness.