



# Mechanisms of Intersectoral Collaboration in the Health System: A Scoping Review

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## Abstract

**Background:** The implementation of health interventions requires the collaboration of various sectors outside health due to the multidimensional nature of healthcare. Building effective partnerships demands the use of intersectoral mechanisms that facilitate the leadership and implementation of these programs. In this review, the mechanisms of intersectoral collaboration (ISC) and their results were identified.

**Methods:** This scoping review was conducted in 2020. Using relevant keywords, all documents related to ISC in the health system were identified by searching four databases (PubMed, Scopus, Science Direct, and Web of Science), Google, and Google scholar search engines. In the initial search, 2911 documents were extracted. Based on the selection criteria 52 documents were selected for content analysis.

**Results:** Five areas of ISC were identified, including funding (collection, pooling, and distribution of funds), governance and leadership (political commitment, rules and regulations, control and evaluation, and stakeholder engagement), structural mechanisms (interorganizational, government-based, and program-based structures), process tools (information tools, support tools, and resource and service sharing), and models and frameworks (general, national, and program-specific models).

**Conclusion:** An intersectoral framework or model be developed that considers the financial, structural, and leadership aspects as well as the necessary process tools required for each program. Moreover, it should be considered communication and human resources empowerment in each intervention.

**Keywords:** Intersectoral; Collaboration; Action; Coordination; Policy; Mechanism; Outcomes; Health system

## Introduction

The international community has come to recognize the critical importance of strengthening health systems as a whole to the achievement of major global health goals (1). The governance of the health system is the duty of government; Policy-making and intersectoral communication are the most important of governance duties (2).

Although providing, promoting, and maintaining the health of the people is the main task of the Ministry of Health, only 20% of people's health is related to clinical services (3). Therefore, the other sectors have a significant impact on achieving these goals (4). Collaboration between this sectors or Intersectoral collaboration (ISC) combines resources and knowledge between partners



(5, 6). It is a key strategy for implementing health programs (7-14).

At the 1997 International Conference, WHO defined ISC as “a recognized relationship between part, or parts of the health sector with parts of another sector that has been formed to take action on an issue so as to achieve health outcomes (or intermediate health outcomes) in a more effective, efficient or sustainable way than could be achieved by the health sector acting alone” (15).

Implementation of ISC takes place at different levels of integration, including awareness (the lowest level); communication (sharing of information); partnership (not only information but also ideas are shared); collaboration (both information and ideas are shared and departments jointly plan and change service delivery based on mutual consent); and integration (highest level) (16, 17). Intersectoral initiatives may sometimes be designed to achieve health benefits and sometimes to achieve economic and social goals (18). Building effective relationships requires attention to the organizational differences between the sectors involved, the complexity and variability of contexts (19), and the core elements of partnership processes, including effective leadership and trust among partners (20).

There have been many studies on the reasons for the success or failure of ISC. Existing challenges are the result of poor coordination and leadership (21-24), lack of political commitment and support, (25, 26) lack of appropriate structure for coordinating and guiding partners (25), and financial problems (27). Given these challenges, presence of knowledge and experience are essential for creating effective collaboration (28).

In general, due to the different goals of each sector, ISC is inherently complex and it is very difficult to bring these sectors together. Thus, it is necessary to identify and develop specific mechanisms to overcome these challenges (29). Various studies have cited the development of intersectoral structures and the formulation of rules and regulations as the most common mechanisms (30, 31). However, some studies have highlighted the lack or superficiality of evidence in this field (32, 33). Although majority of publications sug-

gested that collaboration was used as a strategy to address intersectoral public policy issues, failed to report how the process of collaboration was unfolded (34).

Given these challenges facing and lack of evidence in this area, the purpose of this study was to identify the existing mechanisms of ISC and their outcomes using a scoping review and provide evidence for policy makers that would guide their efforts to develop mechanisms of ISC and address the challenges of implementing health interventions.

## **Methods**

Exploration of a large body of literature about ISC mechanisms and their outcomes was the objective of this study. Therefore, we conducted a scoping review. One of the most common reasons for these reviews is to identify gaps in the literature and providing a picture of the current state of research (35).

### **Research Design**

This study was conducted in 2020 using Arksey and O'Malley methodological framework (36). There are 6 steps: 1. Research questions, 2. Identification of related studies, 3. Study Selection, 4. Charting the Data, 5. Reporting the results, and 6. Optional consultation with experts (due to the optionality of this step, it was not done in this research).

### **Research questions**

The first stage involved identifying the research question as follows:

“What mechanisms are used for intersectoral collaboration in the health sector?”, “What is the outcomes of these mechanism?”

### **Identification of related studies**

Search Strategy: The second stage involved searching for relevant studies using the appropriate keywords. The initial keywords were determined based on the opinions of a panel of experts, and subsequently, the relevant free texts

were extracted from PubMed. The final combination of terms included: “intersectoral or intrasectoral, multisectoral, cross-sectoral” AND “collaboration, partnership, action, policy, cooperation” AND “health, health sector, healthcare” that were searched in four databases, i.e., PubMed, Scopus, Science Direct, and Web of Science, as well as Google and Google Scholar search engines. In order to identify the relevant articles, database searches were conducted without any time limit up to May 31, 2020.

Selection criteria: The selection criteria for this study were included:

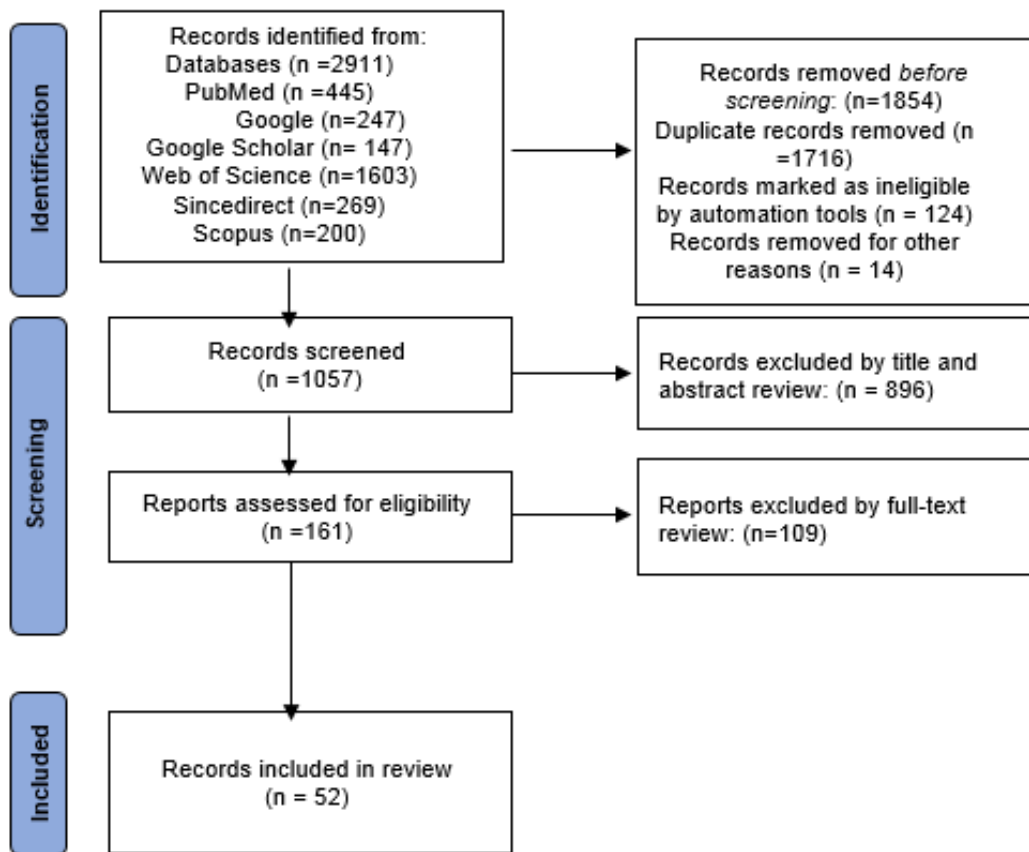
1. English language
2. Available full text
3. Not Duplicates

4. Any kind of studies
5. Addressing research questions

### *Study Selection*

The screening of titles and abstracts and the selection of articles were conducted by two reviewers (MN and MM) using the selection criteria described above. Discrepancies being resolved by referral to a third reviewer (MA).

Overall, 2911 sources were identified in the initial search. Furthermore, 896 documents were removed after reviewing article titles and abstracts, leaving 161 articles for full text review. After reviewing full text 52 documents were selected (Fig. 1).



**Fig. 1:** Article search and selection process

Data from each article were extracted by one researcher (MN) and checked by another (MM),

with discrepancies being resolved by consensus or recourse to a third researcher (MA).

Bruan and Clarke’s six-step thematic analysis method was used to analyze the data. It includes familiarity with the data, identifying the source code, searching for themes, reviewing themes, defining themes, and reporting (37). Content analysis of the texts was performed using MAXQDA20.

## Results

### Search Results

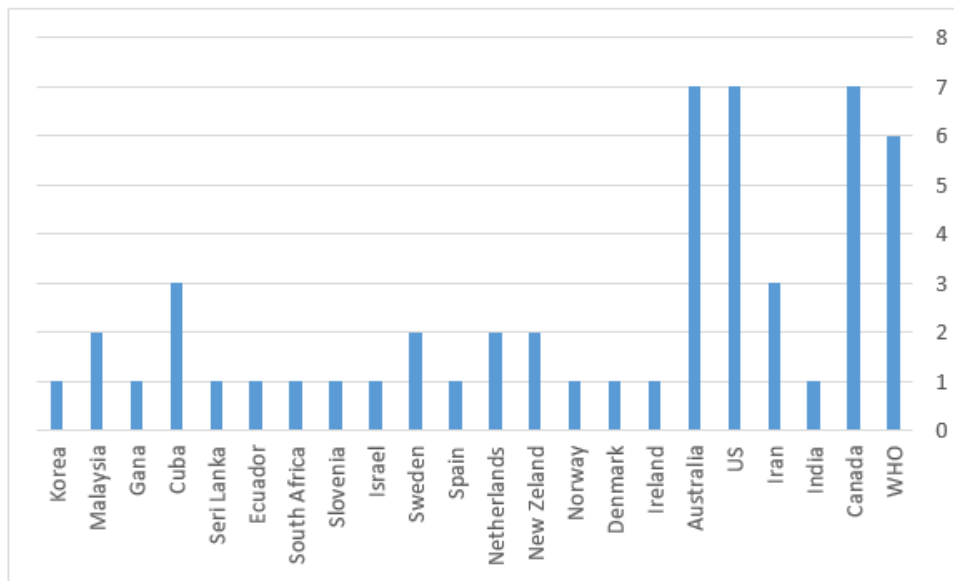
Among 52 selected documents, 32 (63.5%) were articles and 16 (30.8%) were reports. Table 1 shows that reviews studies had the highest frequency with 32.7%.

**Table 1:** Frequency distribution of documents by type

<i>Document Type</i>		<i>Frequency</i>	<i>Percentage</i>
Thesis	Doctoral	2	3.8
	Master	1	1.9
Report	WHO	13	25.0
	National	3	5.8
Article	Qualitative	8	15.4
	Review	17	32.7
	Interpretive	3	5.8
	Other	5	9.6
Guidelines		1	1.9
Total		52	100.0

Figure 2 shows the frequency distribution of documents by research setting. In literature reviews in which the research setting was not specified, the affiliation of the authors’ organization was used for reference, and studies were per-

formed within the WHO offices are called the WHO. The highest frequency was observed for Canada, the US, and Australia with 7 documents, followed by WHO with 6 documents.



**Fig. 2:** Frequency distribution of documents by research setting

Figure 3 illustrated selected documents were published between 1995 and 2020, with the highest frequency observed in 2007 with 11 documents (21.2%). In this year, a conference was held on ISC by the WHO which led to an increase in research activity.

**Areas and Mechanisms of ISC**

Based on the findings of the selected documents, ISC mechanisms were classified into five areas (Fig. 4). The most publications used funding (27.22%), governance and leadership (25.74%), and structural mechanisms (23.96%) (Table 2).

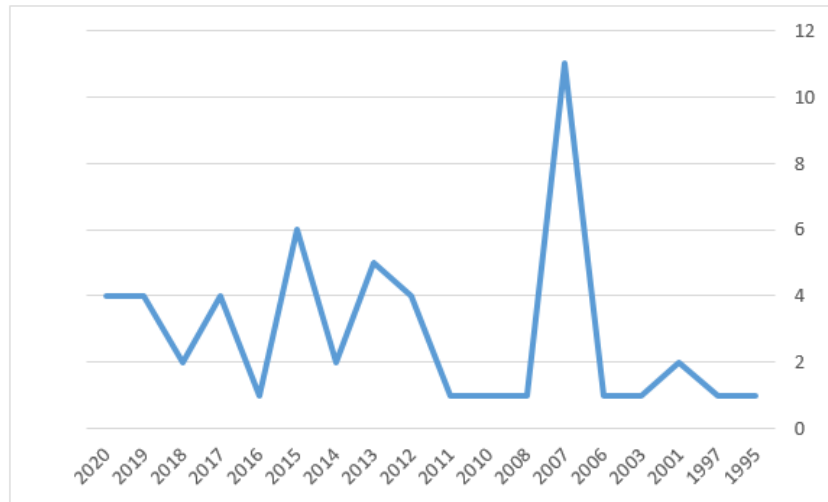


Fig. 3: Frequency distribution of documents by publication year

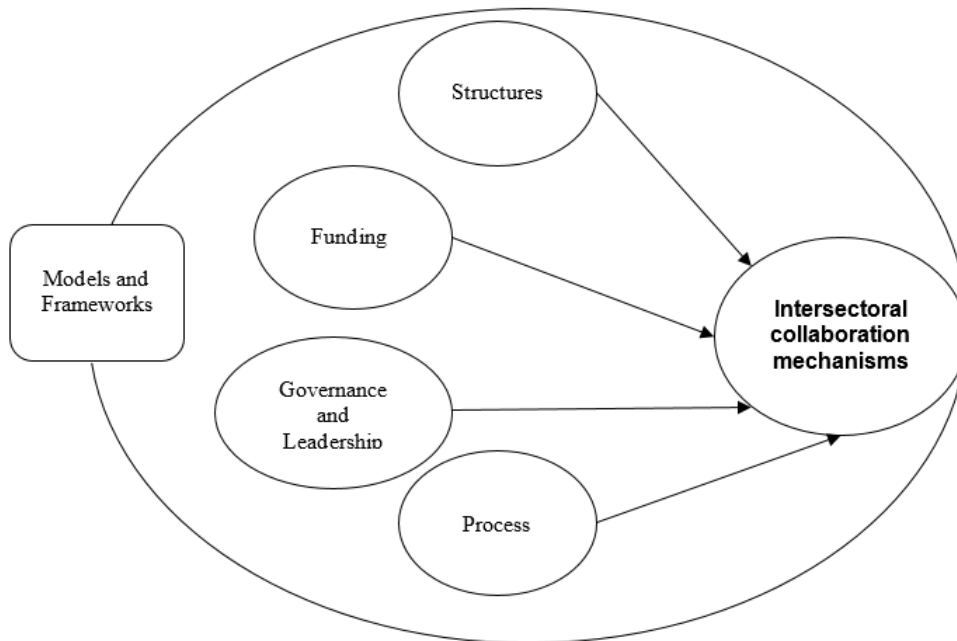


Fig. 4: Conceptual framework of intersectoral collaboration mechanisms

**Table 2:** Classification of areas of ISC in the health system

<i>Mechanism</i>	<i>Type</i>	<i>Frequency</i>	<i>Outcomes</i>
Funding	Collection	92	Supporting collaboration, improving program results
	Pooling	(27.22%)	
	Distribution		
Structures	Interorganizational structures	81	Promoting collaboration (shared responsibility, considering health in policies, supporting collaboration, technical coordination), improving health indicators
	Government-based structures	(23.96%)	
	Program-based structures		
Governance and Leadership	Political commitment	87	Inability to play roles Promoting collaboration, reduces conflict, improving accountability, Legal, political and social legitimacy
	Rules and regulations	(25.74%)	
	Control and evaluation		
	Stakeholder engagement		
Process Tools	Information Sharing	53	Inappropriate communication Involving sectors, flexibility in resource allocation, faster achieving to program goals, better communication
	Implementation support tools	(15.68%)	
Models and Frameworks	Program-specific models	23	Shared value, Strengthening collaboration Insufficient evidence
	National models	(6.80%)	
	General models		

### *Funding Mechanisms*

Funding was the highest mechanism that reported in the selected documents. It is categorized into Collection, pooling, and distribution.

Taxation, specific budget allocations, government subsidies, and national and foreign donations were some examples of collection mechanisms (20, 31, 32, 38-44). Some studies mentioned mechanisms for distribution of funds such as transfer payments or financial rewards to stakeholders (27). In some studies, specific mechanisms were suggested for the pooling of funds, including the District Disaster Management Fund (41) and the Fund for Health (24). There was a certain budget in these funds and the sectors could receive the budget based on the submitted proposal.

Outcome: This mechanism supported collaboration (32), facilitated process (45), and improved program results (27).

### *Structural Mechanisms*

Structural mechanisms are divided into three categories: intersectoral structures, government-based structures, and program-based structures.

Intersectoral structures included written agreements (9, 26, 46-48) and intersectoral/ interministerial structures and committees (47, 49, 50). Some structures were described in terms of different levels of government, including international (28), national (councils, committees, commissions, and secretariats) (30, 42, 51), provincial, regional (41, 45, 51, 52), and local structures (26). Moreover, project groups (24), associations (45), and other program-specific structures were among the structures developed for ISC. For example, intersectoral committees are made up of representatives of various stakeholders who work in regular meetings to achieve a goal. The project team may be a temporary structure and change nature after the project is completed and completed (26, 41).

Outcomes: Both negative and positive results were reported; Positive results are improved health collaboration and outcomes by supporting process (26, 32) and sharing responsibility (52, 53), getting more attention to health in policies (50). Inability of departments to play their role due to insufficient training (31) classified as a negative outcomes.



### ***Governance and Leadership Mechanisms***

These mechanisms were broadly divided into four categories: political commitment, rules and regulations, control and evaluation, and stakeholder engagement.

Political commitment is reflected in the prioritization of health in the formulation of policies and political programs (41, 53-56). Other governance mechanisms include rules and regulations (31, 44, 57-59) that have been passed to support ISC in many countries. A change of government cabinet and political instability could halt programs. It is useful to arrange for gaining lasting political support, such as legislation.

Leadership can be effective by bringing together the right combination of stakeholders involved in ISC and defining the roles and responsibilities of each sector in the development of conventional health programs (44, 26, 47, 53, 55, 60). Training and empowerment of staff (44, 47, 60) and the public (42) by holding workshops for volunteer groups and NGOs (41) and creating a network of community partners (61) have been highlighted as effective leadership mechanisms for ISC.

Some studies have also developed tools for control and evaluation (30, 32, 41, 44, 55, 62). There is also the ISC Assessment Checklist that evaluates various domains such as the need for partnership, mission, context, partners' profiles, availability of resources, leadership, roles, structures, communication, and partnership functioning (63).

Outcomes: Promoting collaboration (32, 41, 55), reducing conflict by defining stakeholder roles (51) and sharing resources (64) improving accountability (52), social (65), legal (41) and political (9, 55) legitimacy of the program, also Strengthening human resources through stakeholder education (45, 49), were reported in selected documents. However, one of the studies pointed out collaboration could be stopped due to inappropriate communication (45).

### ***Process Mechanism***

Process mechanisms highlighted in the selected studies as a communication (41) and information tools such as training materials, shared guidelines

and protocols, and information exchange and dissemination (33, 38, 39, 53, 64). Moreover, sharing existing resources (60), providing shared services (57, 61), and bringing together the stakeholders (41) can facilitate the implementation of intersectoral processes.

Outcomes: Involving sectors, faster achieving of program goals by sharing information (32) and resources, flexibility in resource allocation (41, 55), improving communication between stakeholders (66, 67), improving health, equity and welfare (67) reported. Moreover, studies showed collaboration tools could be a catalyzer for facilitating ISC (68).

### ***Intersectoral Models and Frameworks***

In some countries, models have been developed for ISC based on the capacities of that country. In New Zealand and Norway, ISC is focused on a reporting system. This system ensures that all ministries and working groups remain committed (30). The health collaboration model in India encompasses three major types of collaboration: level-based (individual, population or research), solution-based, and third-party-based collaboration (69). In Malaysia, an ISC model has been developed that consists of ministerial, state, and community levels (41). In Tasmania, the Department of Health participates in legislation and policymaking (43).

On the other hand, the results of a review showed that there has been no comprehensive conceptual framework for ISC, and that each program requires specific mechanisms (70). For example, Del Busto et al. developed a collaborative platform for the design and implementation of community interventions to prevent NCDs (19). New applications were suggested for the Collaborative Value Creation Framework for discovering leverage (71). Similarly, a partnership framework was developed for the provision of primary health care in Canada (72).

Some authors have provided general models for ISC. One of these models is the Bergen Model of Collaborative Functioning (BMCF), which was developed to produce synergy from collaborative health promotion (20, 73-75). Diagnosis of Sus-

tainable Collaboration (DISC) is another model that is used for health promotion (76).

Outcomes: Some documents showed evidence of this area was insufficient and superficial (33, 39, 70). A few studies reported positive impact of models and framework such as promoting shared value (71) Creating and strengthening collaboration (29).

## **Discussion**

This review identified five areas for ISC, including funding mechanisms, governance and leadership, structural mechanisms, process tools, and models and frameworks.

Based on the findings of the present review, financial mechanisms are the most widely used mechanisms in ISC. It can support collaboration (27, 32) and facilitate process (45). Financial incentives affect stakeholders who play a role in health policies and thereby affect the overall performance of the system (77). Therefore, financing is one of the most important elements in the successful implementation of health programs

This review also showed that those fund collection mechanisms received attention in most health financing policies. Taxing certain goods and services and allocating the revenues to the health sector, and joint budgeting by all the sectors involved was among the financing methods discussed in the literature. Some countries have undertaken initiatives to support the funding of collaborative health-related interventions, including the establishment of various funds such as the District Disaster Management Fund (41) or the Fund for Health (24). Institutions that collect funds and manage health care costs are not necessarily efficient, but they seem to be a prerequisite for improving the efficiency and equity of health care coverage (78). Common budgets and lines, regardless of the characteristics of the country, can promote transparency and fiscal order among partners.

Another identified area was governance and leadership. Good governance and leadership entail high political commitment, this commitment is

reflected in the prioritization of health in policies and in the enactment of rules and regulations. Social (65), legal (41), and political (9, 41, 55) legitimacy of the program was provided as a result of that. In general, governments can work toward health equity by providing essential services, facilitating policy frameworks, and monitoring health data (79). Without the support of the government, the health sector will not achieve the desired results in such large-scale programs that require the collaboration of all sectors and society (80). Collaboration is even needed at all levels of government. Three levels of government (national, provincial, and district/city) should work closely to achieve effective and efficient results (81). These mechanisms seem to be more useful in communities with high political stability.

Evaluation was also categorized as one of the important elements of ISC in the literature. It has been emphasized in a WHO report as a tool to strengthen ISC (62). Evaluating programs and making necessary and timely adjustments is key to the success of programs (82). Evaluation should be stronger in contexts where commitment and willingness to collaborate are low.

Shared structures are another common method used in literature. In the review, structural mechanisms were identified as one of the most common (32). Aligning organizational structure to the objectives of health policies is important because the structure determines the allocation of tasks, the locus of decision-making, and lines of formal authority (83). Organizational structure depicts formal reporting relationships among organizational units, and illustrates how the organization differentiates between tasks and activities (84).

Although most conceptualizations of organizational design focus on formal structures, a design was proposed with policies, procedures, and practices that translate structure into collaboration. Outcomes can be affected by changing the formal structure and focusing on informal structures (85). The same formal structure can produce very different behaviors and outcomes if different processes are used (86). Therefore, the effectiveness of the formal structure is dependent



upon executive processes and the informal organization.

However, structures can improve health collaboration and outcome (26, 32, 41, 50, 52), sectors could not be able to play their role by insufficient training (31). Education and training lead to a better understanding of the new structures and collaborative roles, so it may reduce conflict and improve collaboration.

The use of process tools and intersectoral models and frameworks were mentioned in fewer studies. In general, models map the dimensions, factors, and contexts needed to create partnerships, the necessary resources and structures, the leader, communication channels, control and evaluation of processes, and ultimately, the levels of collaboration and the stakeholder groups (19, 20, 41, 43, 63, 69-76, 87). Developing a framework or model for ISC can help address many challenges to its success, including poor leadership and lack of coordination between partners. In countries where the economic and political situation is unstable, it is necessary to examine the stakeholders and their conditions to implement any intervention, and to change the models and tools according to the conditions.

Literature in this area was low and sometimes superficial. In many studies, the mechanisms used were not fully explained by describing the effective factors and how they work. Therefore, in this study, we identified all the mechanisms of ISC using scoping review to gather integrated and comprehensive information.

Moreover, in selected documents, the effectiveness of the mechanisms did not assess by considering the context of each country. Therefore, generalizability of this review is a limitation for other contexts.

## Conclusion

Many countries have used a wide range of mechanisms of ISC for health intervention. Due to the importance of financing as well as governance and leadership, specific financing and governance mechanisms have been developed for most pro-

grams. These programs also require a clear leadership structure for managing diverse stakeholders and large sections of society. Therefore, most successful collaborative ventures had structural mechanisms. In general, an intersectoral model or framework should consider the factors and contexts required to begin collaborative efforts

What is important in choosing the mechanisms is to pay attention to the content of the country and stakeholder capacity and consider the possible outcomes of the program. On that basis, the financial, governance, structural, and process mechanisms required for each program can be developed in a mindmap or model. Moreover, it should be considered communication and human resources empowerment in each mechanism.

## Journalism Ethics considerations

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

## Conflict of interest

The authors declare that there is no conflict of interests.

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