Systems Change under the Health Profession Opportunity Grants (HPOG) Program

National Implementation Evaluation of the Health Profession Opportunity Grants (HPOG) to Serve TANF Recipients and Other Low-Income Individuals

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Overview

The Health Profession Opportunity Grants (HPOG) Program, established by the Patient Protection and Affordable Care Act of 2010, funds training programs in high-demand healthcare professions, targeted to Temporary Assistance for Needy Families (TANF) recipients and other low-income individuals. In 2010, the Administration for Children and Families (ACF) of the U.S. Department of Health and Human Services (HHS) awarded 32 HPOG grants for five-year project periods to organizations in 23 states, with approximately $67 million disbursed each year through fiscal year 2015. Twenty-seven of the HPOG grantees were post-secondary educational institutions, workforce investment boards, state or local government agencies, and community-based organizations. Five HPOG grantees were tribal organizations.[1]

This report presents findings from the Systems Change Analysis, one component of the HPOG National Implementation Evaluation (NIE) of the 27 non-tribal HPOG grantees, which operated 49 programs. The report uses both a descriptive and a formal network analysis based primarily on survey responses from HPOG program operators, partners, and stakeholders, which comprised the HPOG program networks. The networks operated within a larger service delivery system in each community. This study addresses the major research question: What changes to the service delivery system are associated with program implementation?

The 49 HPOG networks included a diverse representation of partners and stakeholder organizations, including educational institutions, workforce development agencies, other government agencies, non-profit organizations, and employers and industry organizations. Organizations most commonly supported local programs through referral and outreach activities but also with education and training activities, employment assistance, counseling and support services, and planning and design of programming.

HPOG programs and networks generally strengthened their collaborations over the grant period. Most HPOG programs responded to local labor market demand for healthcare occupations and the program operators perceived that the programs improved healthcare training and supports for low-income populations. Most partners and stakeholders felt that networks worked together effectively and were satisfied with local HPOG programs. However, they viewed participants' personal barriers and their difficulties engaging in and completing the HPOG programs as the most significant challenge to the programs. Partners and stakeholders were confident that the working relationships developed with program operators and with other network organizations would be sustained beyond the grant period.

The Systems Change Analysis represents one of the first efforts to evaluate comprehensively the systems that can support career-pathways-based training programs for low-income adults. While this analysis is exploratory, it takes an initial step toward understanding systems change for training programs and offers some key lessons for future efforts as well as policy implications.

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Executive Summary

The Health Profession Opportunity Grants (HPOG) Program, established by the Patient Protection and Affordable Care Act of 2010, funds training programs in high-demand healthcare professions, targeted to Temporary Assistance for Needy Families (TANF) recipients and other low-income individuals. In 2010, the Administration for Children and Families (ACF) of the U.S. Department of Health and Human Services (HHS) awarded 32 HPOG grants for five-year project periods to organizations in 23 states, with approximately $67 million disbursed each year through fiscal year 2015. Twenty-seven of the HPOG grantees were postsecondary educational institutions, workforce investment boards, state or local government agencies, and community-based organizations. Five HPOG grantees were tribal organizations.

HPOG is intended to meet the dual policy goals of demonstrating new ways to increase the supply of healthcare workers while creating career opportunities for low-income adults. Grantees designed and implemented programs to provide eligible participants with education, training and employment activities, as well as general support services, to help them enter and advance in a variety of healthcare professions.

ACF's Office of Planning, Research, and Evaluation (OPRE) is using a multipronged research and evaluation strategy to assess the success of the HPOG Program. The HPOG National Implementation Evaluation (NIE) is part of this strategy and includes the 27 non-tribal HPOG grantees, which operated 49 programs.[2] NIE has three major components: a Descriptive Implementation Study, a Systems Change Analysis, and an Outcome Study.

This report presents findings from the Systems Change Analysis, which uses both a descriptive and a formal network analysis. The analysis is based primarily on survey responses from HPOG program operators, partners, and stakeholders, which comprised the HPOG program networks. The networks operated within a larger service delivery system in each community. This study addresses the major research question: What changes to the service delivery system are associated with program implementation?

The following provides highlights of key findings from the Systems Change Analysis and concludes with a summary of lessons and policy implications.

HPOG networks included a diverse representation of partners and stakeholders.

- Approximately half of the HPOG networks (25 of 49) included organizations of all five types, including the program operators: educational or training organizations, workforce development agencies, other government agencies, non-profit organizations, and business organizations (including healthcare employers).
- On average, within networks, about one-third of partners and stakeholders (34 percent) were education and training providers.
- Nearly all networks (48) included state or local workforce investment board (WIB) or One-Stop partners, which were required partners. Fifty-nine percent (29) included state apprenticeship agencies, and 63 percent (31) included state or local TANF agencies. Slightly less than half—23 of 49 networks—included all three types of required partners.

- A little more than 60 percent of networks (30) included business-sector partners or stakeholders, most of which were healthcare employers.
- A majority of partners and stakeholders (60 percent on average) reported having formal relationships (i.e., a written contract or memorandum of understanding) with program operators during the HPOG Program grant period.
- Most relationships between operators and partners or stakeholders existed before the HPOG Program, but two-thirds of networks (32) included at least one new working relationship established during the grant period.

Partners and stakeholders contributed in many ways to HPOG programs.

- Partners and stakeholders most commonly engaged in referral and outreach activities (81 percent on average), while two-thirds (66 percent) worked on training activities, and nearly two-thirds (64 percent) participated in employment assistance. Over half (57 percent) provided counseling and support activities. About a third (35 percent) helped with planning and design of grant activities.
- Most partner organizations in the HPOG networks played multiple roles, with 84 percent on average engaged in two or more activities; however, a small share (7 percent) were considered stakeholder organizations, which did not play direct roles in program design or operations but were interested in the success of local HPOG programs.
- The percentage of partners involved in program activities within a network increased on average over the HPOG Program grant period.
- In 94 percent of networks (45), partners provided resources not covered by the grant funding, most commonly student support (other than tuition), staff or instructors, and equipment or space.

HPOG programs and networks generally strengthened their collaboration over the grant period.

- HPOG network members grew closer and became more helpful to each other over the HPOG Program grant period.
- Collaboration across different types of organizations in the networks increased over time, connecting across service areas between education and training organizations, workforce development agencies, other government agencies, non-profit organizations, business-sector organizations and employers, and other types of organizations.

Most HPOG programs responded to local labor market demand for healthcare occupations and were perceived to have improved healthcare training and supports for low-income populations.

- Over one-third of all HPOG programs' training course offerings were in labor markets in which registered nurses, medical records and health information technicians, and medical assistants were experiencing demand growth from 2007 to 2010.
- Nearly another third (31 percent) of all HPOG programs' training course offerings were in markets characterized by falling supply for occupations such as diagnostic-related technologists and technicians, physical therapy assistants and aides, and community and social service specialists.
- More than two-thirds of employers (68 percent) cited nursing aides, home health aides, and registered nurses as the three most common occupations for which they had hired in the previous

two years, and these high-demand occupations were among the most commonly trained for in HPOG programs.

- Eighty-four percent of employer respondents hired workers referred by HPOG programs in the past two years, and a majority reported HPOG job candidates were better than their average applicants on areas related to skill and job performance. Two-thirds agreed that the HPOG Program effectively filled jobs and produced graduates with needed healthcare skills.
- Most program operators reported HPOG programs expanded healthcare training opportunities for low-income populations; program operators felt more training opportunities were more often widely available during the HPOG Program than before the Program.
- Most partners and stakeholders felt that the HPOG programs achieved systems change objectives, most commonly reporting that HPOG programs helped clearly define healthcare career pathways (59 percent on average).
- Eighty-two percent of partners and stakeholders on average reported that an external event (e.g. changes in organizational resources or in the local economy) had affected the success – positively or negatively – of different programs and participants.
- On average, fewer than half (45 percent) of partner and stakeholder organizations reported making any changes to internal practices as a result of participating in HPOG programs.

Most partners and stakeholders felt that networks worked together effectively and were satisfied with local HPOG programs.

- Most network partners and stakeholders felt that networks collaborated well, with an average rating of 4.02 (on a scale of 1 to 5) on the strength of the network collaboration in supporting key HPOG Program goals.
- Most network partners and stakeholders were positive about the value of other organizations' contributions to HPOG programs; networks had an average rating of 4.07 (on a scale of 1 to 5) on the contribution of other organizations in the network. Education and training providers were seen as making the greatest contribution to the programs' success: an average of 89 percent of partners and stakeholders viewed them as helpful.
- Most partners and stakeholders were satisfied with how HPOG programs supported participants; on average, 85 percent agreed that the HPOG Program produced graduates with the needed healthcare skills, and 84 percent agreed that the HPOG Program effectively engaged participants. Most partners and stakeholders were satisfied with specific HPOG program activities as well: 80 percent with occupational training choices and 83 percent with the delivery and content of occupational training. Satisfaction was slightly lower with employer collaboration and job placement opportunities (70 percent).
- Partners and stakeholders viewed participants' personal barriers and their difficulties engaging in and completing the HPOG programs as the most significant challenge for the programs.
- Most network members planned to continue to collaborate with program operators and other organizations on healthcare training (81 percent and 73 percent, respectively) and support services (73 percent and 71 percent, respectively).
- Network members generally did not anticipate serious challenges to sustaining collaboration; partners and stakeholders had an average score of 4.0 (of 5) on a scale measuring confidence in sustainability of relationships.

The Systems Change Analysis represents one of the first efforts to evaluate comprehensively the systems that can support career-pathways-based training programs for low-income adults. While this analysis is exploratory, it takes an initial step toward understanding systems change for training programs and offers some key lessons for future efforts as well as policy implications.

- The high degree of collaboration across types of organizations within networks and the wide range of organizations involved is promising as it may have increased the likelihood that participants received all of the services they needed. These patterns also support the potential for training and support providers and employers to maintain beneficial working relationships after the HPOG grant period ends.
- Developing strategies to address challenges, such as personal barriers faced by low-income participants, earlier in the grant period may help future HPOG grantees or similar programs to develop effective collaborations that last beyond the end of the grant.
- While a diverse set of organizations participated in the HPOG networks, collaborations with healthcare employers could have been stronger. Although the HPOG programs generally responded to employer demand, future efforts should encourage greater employer involvement.
- The study found mixed results regarding which network features were associated with stronger collaborative performance. Future healthcare education and training programs for low-income adults should explore how to understand and better test how these features may be linked to stronger network collaboration as well as improved participant outcomes.
- Future research on how programs can best design partner and stakeholder networks that support training programs and produce strong outcomes for participants could inform workforce development policy initiatives. These include implementation of the Workforce Innovation and Opportunity Act of 2014, as well as new efforts focused on developing career pathways for disadvantaged populations and meeting employer demand for skilled workers.

1. Introduction

Important Terms for This Report

Career pathways—a framework for occupational training that combines education, training, and support services that align with the skill demands of local economies and help individuals to enter or advance within a specific occupation or occupational cluster

HPOG Program—the national HPOG initiative, including all grantees and programs

HPOG grantee—the entity receiving the HPOG grant and responsible for funding and overseeing one or more local programs

HPOG program—a unique set of services, training courses and personnel; a single grantee may fund one or more programs

HPOG program operator—the lead organization directly responsible for the administration of an HPOG program

HPOG partners—other organizations directly involved in the operations of the HPOG program

HPOG stakeholders—organizations that play no role in program operations but have an interest in the HPOG program's implementation and success

Network—the group of organizations that interact to support HPOG program operations

Contextual factors, or "system"—the economic and service delivery environment in which the HPOG program operates specifically

This report presents findings of the Systems Change Study of the National Implementation Evaluation (NIE) of the Health Profession Opportunity Grants (HPOG) Program. The NIE is part of a multipronged research strategy supported by the Office of Planning, Research, and Evaluation (OPRE) of the Administration for Children and Families (ACF) of the U.S. Department of Health and Human Services (HHS). The NIE has three major components: a Descriptive Implementation Study, a Systems Change Analysis, and an Outcome Study. These studies address the following three research questions, respectively:

1. How are health professions training programs being implemented across the grantee sites?
2. What changes to the service delivery system are associated with program implementation?
3. What individual-level outputs and outcomes occur?

More specifically:

- The Descriptive Implementation Study describes the design and operation of the HPOG Program at the national level.
- The Systems Change Analysis describes the HPOG programs' partnership and network structure and if and how it has changed under HPOG. The analysis also examines the extent to which HPOG has changed systems for recruiting, training, and placing low-income individuals into the health professions.
- The Outcome Study describes participant characteristics, participation patterns, outputs, and outcomes.

This report presents findings of the Systems Change Analysis; a separate report presents the Descriptive Implementation Study and the Outcome Study.[3] This first chapter begins with an introduction to the HPOG Program. It then provides an understanding of the systems examined under HPOG and concludes with an overview of the research design.

1.1 The HPOG Program: Healthcare Training for Low-Income Adults in Career Pathways

As part of the Patient Protection and Affordable Care Act (ACA) of 2010, Congress authorized funds "to conduct demonstration projects that provide eligible individuals with the opportunity to obtain education and training for occupations in the healthcare field that pay well."[4,5] ACF developed and funded the HPOG Program to prepare, train, and support Temporary Assistance for Needy Families (TANF) recipients and other low-income individuals for stable, well-paying careers in healthcare. Education and training programs funded in 2010 through the five-year HPOG grants were required to:

- Prepare participants for healthcare-sector employment in positions that pay well and are expected to either experience labor shortages or be in high demand.
- Target skills and competencies demanded by the healthcare industry.
- Support career pathways, such as articulated career ladders.
- Result in employer- or industry-recognized, portable educational credentials (e.g., certificates or degrees) and professional certifications and licenses (e.g., third-party certification, a credential awarded by a Registered Apprenticeship program).
- Combine support services with education and training services to help participants overcome barriers to employment.
- Provide training services at times and locations that are easily accessible to targeted populations.[6]

OPRE is using a multipronged research and evaluation strategy to assess the success of career pathways programs for low-income populations. These research and evaluation activities examine program implementation, systems change resulting from HPOG programs, and participant outcomes and impacts. Appendix A describes these activities.

1.2 HPOG Service Delivery Systems: Partner and Stakeholder Networks and Their Community and Economic Contexts

Developing and implementing career pathways for low-income adults depends critically on partnerships among both state and local community-based organizations, community colleges and other training providers, human service and workforce agencies, and employers.[7] As outlined in the HPOG Program funding opportunity announcement (FOA),[8] ACF did not expect grantees to deliver all HPOG services and training courses by themselves or solely with HPOG grant resources. Rather, the FOA expected grantees to establish partnerships with local or state institutions to provide the range of activities, services, and courses needed to implement HPOG and to leverage existing community resources where possible. To implement their programs, program operators relied on networks of institutional partners and referred HPOG participants to other community resources for a variety of support services.

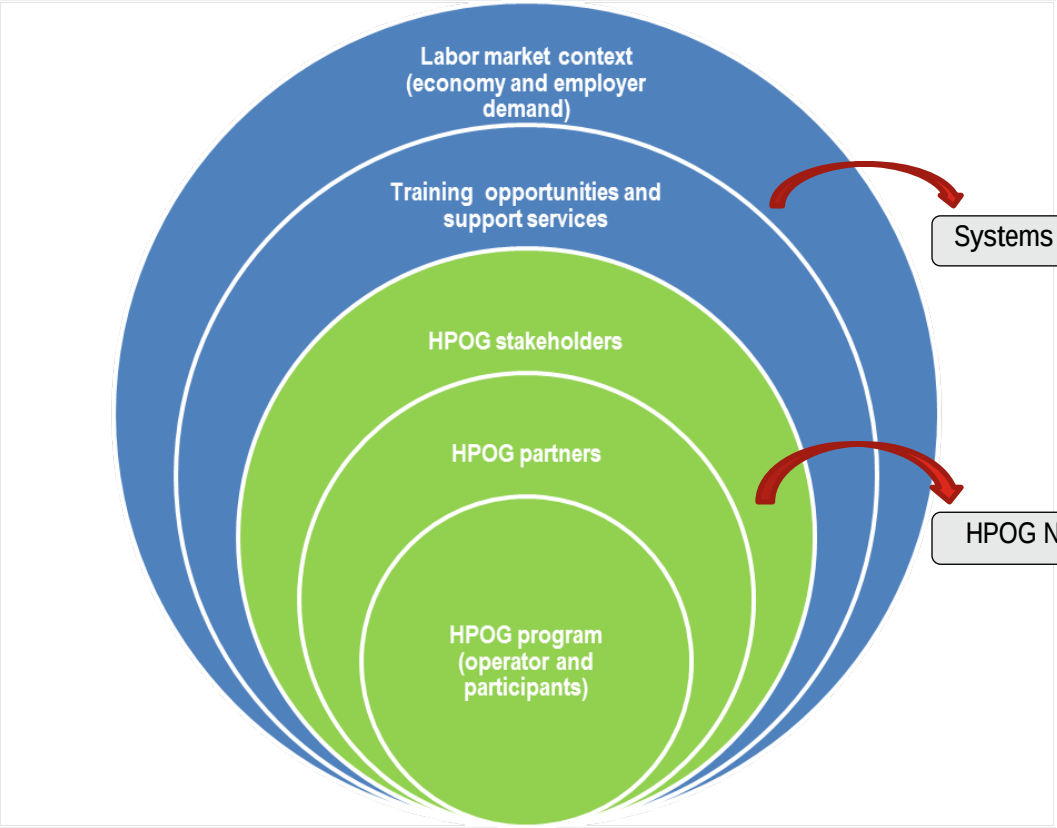
These organizational *networks*—made up of the HPOG program operator, partners, and stakeholders—are integral to sustaining and scaling training programs. In addition to supporting program operations, the networks have the potential to improve policy, funding, and institutional capacity that help build more effective, long-lasting career pathway systems. A network's ability to build better training and employment systems depends on its responsiveness to its community and labor market conditions.

To provide a range of participant supports and services and respond to healthcare labor markets, HPOG programs needed to collaborate effectively with two key types of institutions: organizations that work with disadvantaged populations—especially education and training entities—and local healthcare employers who require skilled workers. The HPOG grant solicitation encouraged HPOG programs to engage a wide range of partners.[9] It required grant applicants to enter into partnership agreements with state and local workforce investment boards (WIBs),[10] state TANF agencies,[11] and state apprenticeship agencies.[12] The FOA also encouraged applicants to cultivate "strategic partnerships" with other important stakeholders and service providers, including employers and labor organizations; social service agencies, foundations, and non-profit organizations; organizations implementing projects funded by the American Recovery and Reinvestment Act of 2009; and the education and training community, including Registered Apprenticeship programs.[13]

For this study, *systems* are more than the set of institutional partners and stakeholders, they are the institutional framework, activities, services, and training and employment opportunities within a community. A system includes the HPOG program, its network, and the broader training, social service, and economic context in which it operates. The economic context reflects both the labor market demand for healthcare workers and the hiring activities of employers. The service delivery context reflects the healthcare education and training opportunities that exist in a system that may be affected by the HPOG program. *Networks* of partners and stakeholders connect and collaborate with each other to support the HPOG program and as a part of the larger service delivery system. (See Exhibit 1.1 for a visual representation of these key concepts.) This Systems Change Analysis report focuses on the networks of the 49 HPOG programs operated by the 27 non-tribal grantees, and the community and labor market context in which the networks operated.

HPOG programs developed or expanded relationships with many *partners*—organizations that took on various roles and responsibilities in program design or operations. *Formal partners* had a memorandum of understanding or contract in place to govern their relationships with program operators. HPOG programs also had *stakeholder organizations*, which did not play direct roles in program design or operations but were interested in the success of local HPOG programs because they were aware of the initiative, served similar populations, or supported similar goals. Both partners and stakeholders are key actors of interest for this study.[14]

Exhibit 1.1: Local/Regional Service Delivery System for Healthcare Training



1.3 Research Design

The research design for the Systems Change Analysis builds on both implementation evaluation methods for job training programs and systems change theory.[15] The study uses a mix of qualitative and quantitative data to examine how HPOG programs operated and how they changed over time. This approach allows for a comprehensive picture of the local systems. This exploratory analysis is a first step in understanding systems change for training programs.[16]

The study addresses the central question of interest: *what changes to the service delivery system are associated with HPOG program implementation?* To answer it, two analytical approaches were used: descriptive analysis and formal network analysis. The descriptive analysis documents the networks that emerged during the grant period and describes the labor market and community contexts across all networks. The formal network analysis examines the levels and types of collaboration among HPOG program operators, partners, and stakeholders, along with how network collaboration changed during the HPOG grant period. The analysis also examines networks by key features such as program operator type, pre-existing or newly developed programs, and network size, where appropriate.[17]

The primary data source for both the descriptive analysis and formal network analysis is the Stakeholder/Network survey, fielded in winter 2013–14 during the fourth year of the HPOG grant period. The descriptive analysis draws on the survey responses of 514 organizations that completed the survey. The descriptive analysis examines 48 of the 49 networks because one had too few survey responses to be

included. For a number of survey questions, scales integrated several responses measuring a single concept. See Appendix C for detailed information on scale methodology.

Primary data sources for the descriptive and formal network analyses include a survey of 146 employers targeted for hiring HPOG participants[18] and a secondary analysis of nationally representative data on labor markets. Other data from the HPOG NIE include the Grantee survey, which collected data on the program operators for each of the 49 HPOG programs. Data from site visits to 35 programs conducted as part of the HPOG Impact study provided additional context.[19]

The data collected for the HPOG NIE and used in this report have some limitations. The Stakeholder/Network and Grantee surveys, as well as the site visits in the HPOG Impact study, required respondents to recall information about their involvement in the HPOG programs from the beginning of the grant, and in some instances from a period before the grant. At the time of data collection, this time span was three years. Asking for this degree of recall could affect the precision of the responses. The evaluation-related purpose of the data collection may have also encouraged respondents to provide answers that make their organizations look more favorable. There is no evidence that these recall issues or respondent bias occurred, but they are important to keep in mind when interpreting the findings.

2. Inclusion of Partners and Stakeholders in HPOG Networks

The HPOG Program required coordination and collaboration with a specified set of partners and encouraged partnerships with others, not only to provide healthcare training to HPOG participants, but also to leverage community resources essential for providing them multiple supports. The HPOG FOA specified that successful grant applicants were required to partner with state and local WIBs, TANF agencies, and state apprenticeship agencies. Additionally, it strongly encouraged engagement of employers and business organizations that could provide training and employment opportunities as well as guidance to ensure that training met local market demand. Other suggested partners included members of the education and training community, non-profit organizations, labor organizations, organizations implementing the Recovery Act, foundations, and social service agencies.[20]

This chapter examines the organizations making up the HPOG program networks of partners and stakeholders. Among the 49 HPOG programs, the most prevalent partners and stakeholders were education and training providers. While many HPOG program networks included key partner types prioritized by the initiative, they did not consistently include healthcare employers and TANF agencies. HPOG programs leveraged and built on existing partnerships for the majority of their network relationships, although new working relationships were also established in most networks. Partners formalized some of these relationships through a contract or memorandum of understanding, while other relationships were less formal.

2.1 HPOG Networks Included a Diverse Representation of Organizations

HPOG programs operated in networks of partner and stakeholder organizations that generally showed great diversity of organizational type and activity. Twenty-five of the 49 HPOG networks (51 percent) included partners or stakeholders of all five types: educational or training organizations, workforce development agencies, other government agencies, non-profit organizations, and business organizations (including healthcare employers), including the program operator.[21] All 49 networks had more than one type of partner or stakeholder. As shown in Exhibit 2.1, nearly all networks (48, or 98 percent) included at least one education or training organization, and the same number included a workforce development agency. Other types of organizations were not as frequently present in networks: government agencies were involved in 84 percent of networks (41), non-profit organizations were involved in 82 percent of networks (40), and the business sector was involved in only 61 percent (10).

This diversity within the HPOG networks supports the perception among partners and stakeholders that their networks were comprehensive. On average, only 11 percent of a network's partners or stakeholders agreed that additional agencies or organizations should have participated in the HPOG program but had not. This perception was higher in small networks (20 percent) than in large networks (5 percent), reflecting that at least some small networks may have wanted to include more partners.[22]

Exhibit 2.1: Presence of Types of Partners and Stakeholders in a Network

Type of Partner or Stakeholder Organization	Networks with Type of Organization Present	
	Number	Percentage
Education or training	48	98%
Workforce development	48	98
Government	41	84
Non-profit	40	82
Business	30	61
Other	10	20

Note: Presence of a given type of partner or stakeholder means that at least one organization of that type was included in the program network, including the program operator.

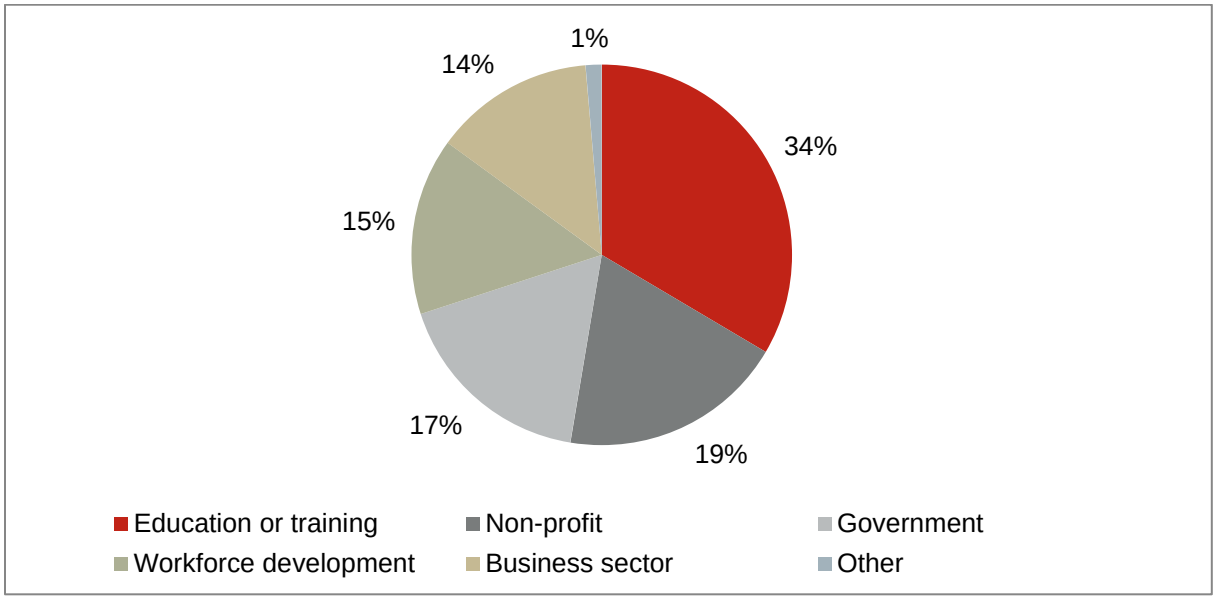
Source: HPOG Stakeholder/Network survey, 2014, Q5, with additional coding by the research team.

N=49 HPOG program networks

2.2 Education and Training Organizations Were the Most Common Partners

As the HPOG Program is a healthcare training intervention, it is not surprising that the most prevalent partner and stakeholder type—about one-third (34 percent) of partners and stakeholders within a network, on average—were education and training providers (see Exhibit 2.2). Non-profit organizations made up 19 percent of partners and stakeholders in a network, followed closely by government agencies at 17 percent. A smaller proportion of partners and stakeholders within a network were workforce development or business-sector partners: 15 and 14 percent, respectively.

Exhibit 2.2: Average Distribution of a Network's Partners and Stakeholders by Organization Type



Note: The study measured the average distribution by first calculating the distribution of partner and stakeholder types in each network, then taking the average proportion across all networks. Percentages are based on all organizations in every network, regardless of survey response.

Source: HPOG Stakeholder/Network survey, 2014, Q5, with additional coding by the research team.

N=49 HPOG program networks

2.3 Workforce Investment Boards Were the Most Likely of the Required Partners to Be Included in the Networks

As mentioned above, the HPOG FOA specified that program operators were required to partner with state and local WIBs and state apprenticeship and TANF agencies, unless the grant recipient represented one of these entities. Slightly under half—23 of 49 HPOG program networks—included all three types of these required partners in their networks (see Exhibit 2.3). While this study did not structure the analysis to examine the challenges of partnership formation, it is possible that some program operators were not able to engage fully all of these particular types of partners because of differing priorities or other factors.

Nearly all networks (48) included state or local WIB or One-Stop partners, 59 percent (29 networks) included state apprenticeship agencies, and 63 percent (31 networks) included state or local TANF agencies.[23] In cases where there was no state apprenticeship agency, program operators could develop a partnership with the federal apprenticeship office in their region. All three networks with government-agency operators included these three types of required partners, suggesting that government agencies perhaps found it easier than other program operators to construct or maintain relationships with other government-agency partners. Networks with workforce development agency operators also successfully incorporated required partners (83 percent included all three), perhaps for similar reasons.

Local WIBs were the most common type of WIB partner; they were included in 73 percent of networks (36). State WIBs—which were less likely to be directly relevant to local area programs like HPOG—were the next most common workforce development partners, present in 47 percent of networks (23). Only 27 percent of networks (13) included One-Stop operators, but it is possible more were involved but were not identified separately from the local WIBs in their respective networks.

A little more than half (26, or 53 percent) of networks included their state TANF agencies, although 31 networks (63 percent) included a state, local, or county TANF agency. Networks may have included other organizations that disburse TANF funds, such as organizations providing workforce development services under contract to TANF agencies.

Exhibit 2.3: Inclusion of Required Partners in HPOG Networks

Type of Required Partner	Networks with Type of Required Partner Present	
	Number	Percentage
Local or state WIB or One-Stop Career Center	**48**	**98%**
Local WIB	36	73
State WIB	23	47
One-Stop	13	27
State apprenticeship office	**29**	**59**
Local/county TANF provider or state TANF agency	**31**	**63**
Local/county TANF provider	8	16
State TANF agency	26	53
All three types (including state TANF agency)	**21**	**43**
All three types (either state TANF agency or local/county TANF provider)	**23**	**47**
Any one type	**48**	**98**

Note: Inclusion of a given type of required partner means that at least one organization in the network (including the program operator) meets the definition of that type of organization. Research staff used Internet research to categorize organizations during the development of the sampling frame. The study used America's Service Locator to validate the list of WIBs and One-Stops. The state apprenticeship office is the state agency responsible for overseeing apprenticeship programs in the state. In states without their own agencies, the federal apprenticeship office has that responsibility. The U.S. Department of Labor (DOL) maintains a list of state apprenticeship agencies at http://www.doleta.gov/oa/stateagencies.cfm.

Source: HPOG Sampling Questionnaire and follow-up protocol, 2013, with additional coding by the research team.

N=49 HPOG program networks

2.4 HPOG Networks Included Healthcare Employers

Collaboration with employers is an important strategy for organizations designing and implementing training programs like HPOG.[24] Although the grant announcement encouraged partnerships with healthcare employers, not all networks included them. A little more than 60 percent of networks (30) included business-sector partners or stakeholders, most of which were healthcare employers. Larger networks were more likely to include business-sector organizations as partners or stakeholders: 14 of the 16 large networks included business-sector organizations, compared to only 3 of the 16 small networks.[25]

Partnerships with healthcare employers could work effectively to provide essential training to participants. For instance, management staff at one non-profit HPOG site operating an on-site pharmacy technician training program had established an externship opportunity, generally a brief on-the-job experience to expose participants to their occupation of training, with their employer partner. Offered at a local pharmacy, the externship allowed HPOG participants and the employers to test whether a placement was a good fit.

On the other hand, other program operators experienced challenges collaborating with healthcare industry partners. Some reported having trouble placing people who had completed training in jobs. Others found it challenging to change training quickly enough to satisfy employer needs. Survey respondents cited perceptions of low-income trainees and difficulty engaging employers to ensure training met their workforce needs as likely reasons for this difficulty. HPOG staff at several programs commented that

their connections with healthcare industry partners would be more effective if they had been forged earlier and if the interaction between employers and program staff were more consistent. Chapter 7 further discusses the challenges surrounding employer engagement and partnership sustainability.

2.5 Many Partners and Stakeholders Had Formal Relationships

On average, 60 percent of a network's partners and stakeholders reported having formal relationships (i.e., a written contract or memorandum of understanding) with the program operator during the HPOG grant period (see Exhibit 2.4). Program operators who were educational institutions had formal partnerships more often (66 percent) than did workforce agencies, other government agencies, or non-profit organizations (58, 40, and 53 percent, respectively). Programs that predated the HPOG grants were more likely to have formal partnerships than programs developed for the HPOG grant (65 compared to 52 percent).

Exhibit 2.4: Formal Relationships between HPOG Program Operators and Partners or Stakeholders, by Selected Network Characteristics

	Average Share Reporting a Formal Relationship (Percentage)
All networks (N=49)	**60%**
By network size	
Small (N=16)	68
Medium (N=17)	58
Large (N=16)	53
By program operator type	
Educational institution (N=24)	66
Workforce agency (N=12)	58
Government agency (N=3)	40
Non-profit organization (N=10)	53
By newness of HPOG program	
Newly developed (N=20)	52
Pre-existing (N=29)	65

Note: The study measured the average proportion of formal partner and stakeholder relationships by first calculating the proportion of formal relationships in each network, then taking the average proportion across all networks of a given type. Tabulations are only of nonmissing responses.

Source: HPOG Stakeholder/Network survey, 2014, Q17.

2.6 HPOG Programs Leveraged Existing Relationships and Some New Partners

Most relationships between program operators and partners or stakeholders existed before the HPOG Program. Eighty-two percent of partners or stakeholders within networks, on average, had a relationship with their program operators before 2010.[26] During site visits, research staff met several managers at an HPOG program that operated employment and training centers. These managers credited their program's pre-existing partnerships with area hospitals and educational institutions for their ability to modify training options to fit employer needs and to provide accessible training to participants on demand.

The HPOG Program offered an opportunity for program operators to strengthen relationships with pre-existing partners. Fifty-six percent of partners or stakeholders within networks, on average, reported expanding their relationships with program operators since 2010. According to HPOG managers at a WIB that contracted with non-profit organizations for training in high-demand nursing occupations, HPOG grant funding gave them a "major avenue" to expand relationships with local employers and training providers. The program operator had started holding monthly meetings with its employer partners, and staff had received positive feedback from employers about the results.

The HPOG Program also offered an opportunity for program operators to develop new relationships with local organizations. On average, 15 percent of partners and stakeholders within networks formed new relationships with the program operators during the HPOG grant period. Two-thirds of networks (32) included at least one new working relationship established during the grant period. New relationships with the program operator were less likely to be formal than relationships that existed before the HPOG grant period: 34 percent compared to 57 percent.[27]

3. Roles and Responsibilities of Partners and Stakeholders

This chapter describes how partners and stakeholders in the HPOG program networks contributed to and supported HPOG programming. Organizations most commonly supported local programs through referral and outreach activities but also with education and training activities, employment assistance, counseling and support services, and planning and design of programming. Most HPOG networks had partner and stakeholder organizations that supported all of these key roles, with many engaged in more than one.

Overall, more partners became involved in the HPOG programs as the grant period continued. HPOG partners and stakeholders also contributed to their programs by donating time and resources, such as student supports, staff or instructors, and equipment or space.

3.1 Partners and Stakeholders Were Involved in All Parts of HPOG Programs

Partner and stakeholder organizations contributed to and were involved in the HPOG programs in many ways, including

1. referral and outreach (referral of applicants or marketing and outreach to potential participants),
2. training (curriculum development, job training, pre-training activities, or basic academic skills training),
3. employment assistance (job development activities, job placement, or recruitment or hiring of graduates),
4. planning and design, and
5. counseling and support services. (See Appendix G for explanations of each activity.)

Most networks had at least one partner or stakeholder playing a role in each of the five activity types (see Exhibit 3.1).[28] Forty-seven of the 48 networks analyzed (98 percent) had partners and stakeholders involved in activity types 1–3 and 5. It was less common for networks to have stakeholders and partners involved in activity type 4: 38 networks (79 percent) had partners and stakeholders playing a role in planning and design.[29]

Although most HPOG networks had a partner or stakeholder involved in each activity, the share of partners and stakeholders playing a given role within a network varied (shown in the last column of Exhibit 3.1). Partners and stakeholders most commonly engaged in referral and outreach activities. On average, 81 percent of partners and stakeholders within a network helped with these activities. Within this activity type, providing referrals to the program was more common than marketing and outreach (71 and 66 percent, respectively).

Most partners and stakeholders were also involved in training. On average, two-thirds (66 percent) of a network's partners and stakeholders worked on training activities, though the percentage varied by specific training activity. Forty-six percent of partners and stakeholders were involved in job training, 39 percent in pre-training, 38 percent in basic academic skills, and 21 percent in curriculum development.

Similar to training activities, nearly two-thirds (64 percent) of a network's partners and stakeholders on average, participated in employment assistance, with more involved in job development (56 percent) and

job placement (41 percent) than recruitment or hiring (26 percent). On average, about a third (35 percent) of a network's partners and stakeholders helped with planning and design of grant activities, and over half (57 percent) providing counseling and support activities.

Exhibit 3.1: Partner and Stakeholder Involvement in HPOG Activities

Activity in Support of HPOG Program	Networks with at Least One Partner or Stakeholder Reporting Involvement in Activity		Average Share of Partners and Stakeholders Involved in Activity (Percentage)
	Number	Percentage	
Referral and outreach	**47**	**98%**	**81%**
Referral of applicants	47	98	71
Marketing and outreach	45	94	66
Training	**47**	**98**	**66**
Curriculum development	34	71	21
Occupational training	45	94	46
Pre-training activities	42	88	39
Basic academic skills	41	85	38
Employment assistance	**47**	**98**	**64**
Job development activities	46	96	56
Job placement activities	44	92	41
Recruitment or hiring of graduates	36	75	26
Planning and design of grant activities	**38**	**79**	**35**
Counseling and support services	**47**	**98**	**57**

Note: Referral and outreach, Training, and Employment assistance are aggregates that were not specified in the surveys. Involvement in one of these activity groups means involvement in any of the activities grouped below it. The average share of involvement is measured by first calculating the proportion of those involved in that activity each network, then taking the average proportion across all networks. Tabulations are only of nonmissing responses.

Source: HPOG Stakeholder/Network survey, 2014, Q14.

N=48 HPOG program networks

Newly developed HPOG programs were more likely than those developed from pre-existing programs to have partners and stakeholders involved with curriculum development (85 compared to 61 percent), basic skills education (90 compared to 82 percent), job placement (100 compared to 86 percent), recruitment or hiring (90 compared to 64 percent), and planning and design (90 compared to 71 percent).[30]

3.2 Most Partners Played Multiple Roles

Many partners and stakeholders played multiple roles in HPOG programming. On average, 84 percent of partners and stakeholders within a network engaged in two or more activities, and 50 percent reported five or more roles. However, a small share of organizations within a network—7 percent on average—held none of these roles.[31] These organizations had little direct involvement in programming but were nonetheless identified as being involved in the program networks. They fit the definition of "stakeholder" used for this analysis.

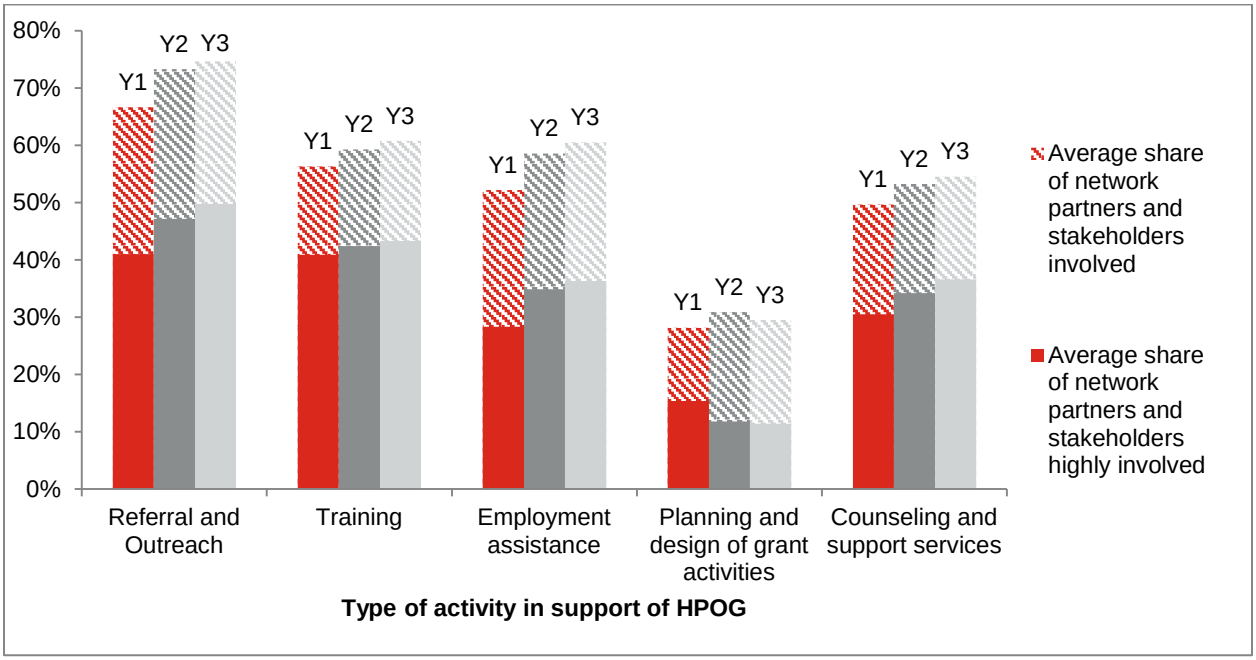
As one might expect, nearly all small networks (96 percent) had partners and stakeholders involved in multiple activities, although this was also true of three-quarters (75 percent) of larger networks.[32] This suggests that large networks may have been able to distribute responsibilities more widely, but each organization in a small network had to play multiple roles. In contrast, on average, large networks had a greater proportion of members who were stakeholder organizations with no specific role (10 percent) compared to small networks, where on average zero percent of network members played no role in programming.

3.3 More Partners and Stakeholders Became Involved in HPOG Activities over Time

The percentage of partners and stakeholders involved in activities within a network increased on average during the first three years of the HPOG grant period (see Exhibit 3.2). The largest changes were for referral and outreach activities (from 67 percent involvement to 75 percent) and employment assistance activities (from 52 percent involvement to 60 percent).

Not all partners and stakeholders who were involved with an activity reported being highly involved (i.e., 4 or 5 on a scale of 1 to 5).[33] Roughly two-thirds of involved partners were highly involved in each year for referral and outreach, training, and counseling and support services. The proportion was closer to half for employment assistance and planning and design. The trend over time for higher involvement mirrors the trend for any involvement. Planning and design was the only activity showing a decline in high involvement of partners and stakeholders, which was expected given the greater need for planning early on in a program.

Exhibit 3.2: Partner and Stakeholder Involvement in HPOG Activities over the First Three Years of the HPOG Grant Period



Note: The survey asked respondents to rate their level of involvement in each activity in each year on a scale from 1 ("not involved") to 5 ("highly involved"). Organizations answering 2, 3, 4, or 5 are considered involved, and organizations answering 4 or 5 are considered highly involved. Referral and outreach, Training, and Employment assistance are aggregates that were not specified in the surveys: high involvement in one of these groups means high involvement in any of the activities grouped within it. The average share of partners and stakeholders involved is measured by first calculating the proportion in each network, then taking the average proportion across all networks. Tabulations are only of nonmissing responses.

Source: HPOG Stakeholder/Network survey, 2014, Q15.

N=48 HPOG program networks

3.4 Partners and Stakeholders Supplemented Program Resources through Donations and Other Contributions

In addition to the activities described above, the vast majority of the 48 HPOG networks in this analysis (45, or 94 percent) had partners and stakeholders who provided contributions to support local HPOG program operations—that is, they provided resources *not* covered by the grant funding (Exhibit 3.3). Partners and stakeholders most commonly contributed non-tuition student support (e.g., books, uniforms, exam fees), staff or instructors, and equipment or space; the majority of networks had partners and stakeholders contributing these items. Beyond supporting planning and implementation functions, these donations provide further evidence of how organizations contribute to local initiatives when the program operator's resources are limited.

Exhibit 3.3: Partner and Stakeholder Donations and Contributions to HPOG Programs

	Networks in Which at Least One Partner or Stakeholder Made Donation Type	
Type of Donation or Contribution	Number	Percentage
Any sort of donation or contribution	45	94%
Student support other than tuition	37	77
Staff/instructors	31	65
Equipment/space	29	60
Mentors	27	56
Curriculum/training materials	26	54
Scholarships/tuition assistance	22	46
Financial support	16	33
Promotion or referrals[a]	10	21
Other training[a]	6	13
Other	21	44

Note: Exhibit shows the number of networks in which at least one partner or stakeholder made each type of contribution.

[a] The surveys did not list Promotion or referrals and Other training as response options, but were post-coded by research staff for some of those respondents who chose "Other" based on their open-ended responses. Additional "Other" responses included a range of entries that could not be otherwise categorized.

Source: HPOG Stakeholder/Network survey, 2014, Q16.

N=48 HPOG program networks

4. Changes in Collaboration within HPOG Networks during the Grant Period

One hypothesized systems outcome of the HPOG Program is increased collaboration among organizations within a system.[34] A primary input for that outcome, which is measured and described here, are the partner and stakeholder networks that support the HPOG programs in collaboration with the program operators. A key purpose of this analysis is to understand whether effective working relationships during the grant period may lead to continued, improved collaboration in the future.

Using formal network analysis, this chapter complements the preliminary descriptive evidence on partner involvement reported above and provides a systematic view of changes in collaboration among HPOG program operators, partners, and stakeholders. According to this analysis, the average HPOG program network significantly improved collaboration during the grant period. When the study examined HPOG networks individually, a majority showed improved collaboration across a number of network measures; most networks that improved had collaboration measures at or above the average HPOG program. No particular network feature was consistently or significantly associated with how well or poorly a network collaborated.

4.1 Network Analysis Methods Used to Measure Collaboration

The formal network analysis is based on several measures of collaboration developed for this study. The analysis examines changes in these collaboration measures, first for the HPOG Program nationwide then at the individual network level. For the individual network analysis, the study considers the direction of change over time in each measure for each network, as well as the network's performance relative to that of the average HPOG network of a given size. (See Appendix D for detailed information on the methodology.)

The basis of the network analysis is the presence or absence of connections between individual organizations in a network, described as a "helpful tie." A helpful tie exists between two organizations when one or both reported communicating regularly or frequently (typically, at least quarterly) and where one or both considered the collaboration beneficial.

Based on these ties, the study developed nine measures to understand different dimensions of collaboration within HPOG networks (see Exhibit 4.1).[35] These measures capture a network's **closeness**, **connectedness**, and **equality**.

1. **Closeness** describes how directly organizations communicated with each other. It is captured by a single network measure, **proximity**, which is the minimum number of helpful ties or degrees of separation needed to link any two organizations in a network, averaged across all pairs of organizations in a network. Two organizations connected by a helpful tie have a proximity score of 1 (one degree of separation), while two organizations that both share a helpful tie with a third party, but not each other, have a proximity score of 2 (two degrees of separation). Proximity is the only measure where *smaller* values indicate *greater* collaboration.

2. **Connectedness** describes the quality of the network and how many of the possible working relationships are active. It is captured by four measures: **density, cohesion, cross-type density,** and **cross-type cohesion**.

- **Density** and **cohesion** measure the share of possible helpful ties that the network is using. Density focuses on all helpful ties, while cohesion focuses on *reciprocally* helpful ties (i.e., ties that both organizations report). For both measures, larger percentages indicate more collaboration.

- **Cross-type density** and **cross-type cohesion** describe how many of the possible relationships are active between *types* of organizations. The six types in HPOG networks are education and training organizations, workforce development agencies, other government agencies, non-profit organizations, business-sector organizations and employers, and other types of organizations. Ties among organizations of the same type are collapsed to focus on ties from one type to another. Cross-type density illustrates how well organizations interact across service areas. Cross-type cohesion provides the most comprehensive measure of collaboration, as it suggests how well different types of organizations in the local service system are working together to serve program participants.

3. **Equality** examines whether some organizations are better connected than others within HPOG networks. It is captured by four measures: **power equality, instrumental equality,** and the **program operator's power** and **instrumentality. Power equality** and **instrumental equality** capture whether members hold a relatively equal number of incoming and outgoing, respectively, helpful ties with other organizations. Power equality and instrumental equality are low when a few organizations hold most of the helpful ties and when several organizations are only remotely tied to the network. **Program operator power** and **instrumentality** focus on the HPOG program operator's connections to other network members.

4.2 HPOG Network Members Expected to Become More Close and Connected, Especially the Program Operators

In the abstract, an ideal network would have the strongest values for each measure, with all organizations equally close, connected, and equal. In practice, however, such a structure may be impractical or unnecessary. A weaker score on some of these measures is not necessarily an indication of a sub-optimal network.

It is important to consider the particular collaboration hypotheses for the HPOG program networks. (See Exhibit 4.1.) Based on prior research, one would expect to see greater communication and mutually beneficial interactions over time,[36] both at the individual organization level and across service areas (i.e., improvements in closeness and connectedness measures), but understanding of these types of programs suggests that equality may not be crucial for well-functioning HPOG programs and thus is not expected to improve. In the HPOG networks, in fact, some types of organizations may interact with only a subset of network members, and equal interaction may not be expected or desirable—employers, for example, may only engage with the program operator. The HPOG program operator, which receives the grant funding and coordinates activity, would likely interact more than other network members, expanding its working relationships over the grant period and leading to increases in program operator power and instrumentality.[37] The results of the network analysis are thus hypothesized to show improvements in closeness, connectedness, and program operator power and instrumentality, while power equality and instrumentality for the networks have no particular hypothesized direction.

Exhibit 4.1: Network Measures, Definitions, and Expected Change

Measure	Definition	Range of Values	Hypothesized Change
Closeness			
Proximity	Average minimum number of helpful ties needed to link any one member organization to another. A 1 means that two organizations communicate directly.	1 to (network size-1)	Decrease
Connectedness			
Density	Helpful ties among organizations as a share of all possible helpful ties.	0 to 100%	Increase
Cohesion	Reciprocally helpful ties among organizations as a share of all possible reciprocally helpful ties.	0 to 100%	Increase
Cross-type density	Helpful ties across organization types as a share of all possible helpful cross-type ties.	0 to 100%	Increase
Cross-type cohesion	Reciprocally helpful ties across organization types as a share of all possible reciprocally helpful cross-type ties.	0 to 100%	Increase
Equality			
Power equality	Equal distribution of incoming ties. A 0 means that one organization is responsible for all the helpful ties; a 100 indicates that credit for helpful ties is spread equally among all organizations.	0 to 100%	No hypothesis
Instrumental equality	Equal distribution of outgoing ties. A 0 means that one organization reports having helpful interactions with other organizations; a 100 indicates that all organizations report equally helpful interactions.	0 to 100%	No hypothesis
Program operator power	Incoming helpful ties held by the program operator as a share of all possible incoming helpful ties. (That is, the share of network members who report receiving regular, helpful interactions from the program operator.)	0 to 100%	Increase
Program operator instrumentality	Outgoing helpful ties held by the program operator, as a share of all possible outgoing helpful ties. (That is, the share of network members with whom the program operator reports receiving regular, helpful interactions.)	0 to 100%	Increase

Note: For each measure, the unit of measurement is a pair of network member organizations. Pairwise scores are aggregated for all possible pairs of organizations in a network.

4.3 HPOG Networks Became More Collaborative over Time

This section first examines the average results across all 49 networks. These results show that hypotheses were supported by the findings, and HPOG program networks saw improved collaboration on all measures of closeness, connectedness, and program operator centrality, as well as decreased equality (see Exhibit 4.2). Proximity is the only network measure for which a lower score indicates stronger collaboration; accordingly, a decrease in proximity score indicates improvement. See Appendix D for detailed description of the analytic strategy used in this and the following section.

Exhibit 4.2: HPOG Programs' Network Collaboration Performance Across the Program

	Hypothesized Change	Performance
Closeness		
Proximity	Decrease	Improved[a]
Connectedness		
Density	Increase	Improved
Cohesion	Increase	Improved
Cross-type density	Increase	Improved
Cross-type cohesion	Increase	Improved
Equality		
Power equality	No hypothesis	Declined
Instrumental equality	No hypothesis	Declined
Program operator power	Increase	Improved
Program operator instrumentality	Increase	Improved

Note: [a] A decrease in proximity indicates improved collaboration.

Source: HPOG Network Analysis; HPOG Stakeholder/Network survey Q17, 18, 20, 21, 23.

N=49 HPOG program networks

HPOG network members grew closer—that is, had more direct helpful communication with each other—as the HPOG Program continued. The analysis found substantial increases in direct communication between network members. HPOG program operators were likely the intermediaries connecting many new organizations. However, the connections that the program operator made—and those that HPOG programming facilitated—may have generated newly developed direct relationships between network members. These direct communications (and those involving fewer intermediaries) between partners may support network sustainability after the HPOG grants end.

Second, HPOG network members became more helpful to each other over the course of the HPOG grant period. The analysis found that more relationships were active (i.e., density and cohesion increased) between individual organizations as well as between types of organizations. Collaboration across different types of organizations increased, meaning that education and training institutions, workforce development agencies, other government agencies, non-profit organizations, business-sector organizations and employers, and other types of organizations increasingly engaged with each other as the HPOG Program continued. The expectation is that as these types of organizations collaborate with each other more effectively, participants' training and service needs will be served more efficiently and effectively. About one-third of possible ties were not active, suggesting that some links may have been difficult to establish or maintain and/or that they may have been deemed as unnecessary for network success.[38]

While collaboration among all network members increased over the grant period, program operators in particular increased their collaboration with other organizations. The analysis found that the distribution of power and instrumentality among HPOG network partners and stakeholders became less equal, as program operators grew in their power and instrumentality.

When examining individual HPOG networks' collaboration performance, the analysis showed similar results. For six of the nine collaboration metrics, a majority of the individual HPOG program networks improved their collaboration over time (see Exhibit 4.3). For most of those six metrics, the majority of networks that improved ended at or above the average HPOG network.[39]

Exhibit 4.3: HPOG Programs' Network Collaboration Performance by Network

	Improved				Did Not Improve			
	Ended at or Above Average		Ended Below Average		Ended at or Above Average		Ended Below Average	
Measure	Num.	Percentage	Num.	Percentage	Num.	Percentage	Num.	Percentage
Closeness								
Proximity	23	47%	8	16%	8	16%	10	20%
Connectedness								
Density	16	33	16	33	8	16	9	18
Cohesion	14	29	18	37	9	18	8	16
Cross-type density	14	29	10	20	12	24	13	27
Cross-type cohesion	14	29	11	22	11	22	13	27
Equality								
Power equality	10	20	4	8	15	31	20	41
Instrumental equality	13	27	3	6	13	27	20	41
Program operator power	22	45	10	20	5	10	12	24
Program operator instrumentality	21	43	12	24	6	12	10	20

Note: The study estimated averages based on a linear regression comparing networks of similar characteristics. Therefore, the percentages ending at or above average and below average do not add to 50 percent, respectively, given data variation.

Source: HPOG Network Analysis; HPOG Stakeholder/Network survey Q17, 18, 20, 21, 23.

N=49 HPOG program networks

Similar to the results reported above, most HPOG networks grew closer and had more direct helpful communication with each other as the HPOG Program continued, improving their proximity, density, and cohesion. About half of the HPOG networks improved their connectedness across organization types (cross-type density and cohesion). Less than half of networks increased their power equality or instrumental equality, suggesting that communications between organizations did not become more equal during the HPOG grant period. As hypothesized, program operators increased their collaboration with other network members in the majority of networks, leading to improvement in program operator power and instrumentality.

4.4 Collaboration Performance Varied only Minimally by Network Features

In addition to calculating collaboration measures of HPOG program networks as a whole and at the network level, the analysis explores whether certain network features are associated with collaboration performance three years into the grant period. It adds two additional features to the groupings used for the descriptive analysis: whether the network included all required partners and whether it included business organizations and employers.

The study examines five network features:

- the type of organization operating the program (specifically, whether the program operator was an educational institution, because that was the single most common type),
- the number of organizations involved in the network (comparing small to large networks),
- whether all required partners were present,
- whether business organizations (primarily healthcare employers) were included,[40] and
- whether a program was newly developed for the HPOG Program or existed before the HPOG grants were awarded.

The analysis compared the mean values of collaboration of networks at three years into the grant period across these features. Several performance measures had statistically significant variation across different network features, though no clear patterns emerged (see Exhibit 4.4).

Key findings include:

1. Networks that had an HPOG program operator that was not an educational institution had stronger collaboration between different types of organizations (higher cross-type cohesion). This difference may be because non-educational program operators were better at crossing service-area divides and engaging other actors, or it may be because educational operators required fewer partners to operate effective HPOG programs.

2. Large networks had better collaboration across service-area divides compared to small networks (higher cross-type cohesion), but small networks had stronger collaboration between individual organizations (higher proximity and density). While this is not surprising, an outstanding question remains about the formation of networks and why some networks are larger and include more partners and stakeholders and others do not. Several factors may include the nature of existing relationships between network members, the design of the HPOG program, and the resources available.

3. Including the key partners mandated by the HPOG grant requirements (i.e., TANF agencies, state apprenticeship offices, and local or state WIBs) was associated with stronger collaboration across service-area divides (higher cross-type cohesion). This finding approached statistical significance. This is not surprising, as one might expect that HPOG operators that were able to obtain buy-in from all the different required partners at the start of the grant would be likely to connect more effectively across service-area divides.

4. Networks that included business-sector organizations tended to have weaker collaboration between members (lower proximity and density). This may be because employers in HPOG networks were more likely to interact only with the program operator (regarding hiring graduates

or providing on-the-job experiences or training, for example) than to communicate with other network members. Another possible explanation is that, since employers were more likely to be included in large networks, these networks were likely to have looser connections among members.

5. There were no significant differences in collaboration performance between networks with pre-existing training programs and those newly developed in response to the initiative.

Further research is required in order to determine if and how network collaboration affected HPOG participants' outcomes.

Exhibit 4.4: Comparison of HPOG Programs' Network Characteristics and Collaboration Performance

	Proximity Mean[a]	Density Mean	Cross-Type Cohesion Mean
Program operator type			
Non-educational (N=25)	2.196	0.369	0.856
Educational (N=24)	2.651	0.375	0.711*
Size			
Small (N=16)	1.736	0.525	0.717
Medium (N=17)	1.952	0.359	0.772
Large (N=16)	3.598***	0.233***	0.867†
Presence of all required partners			
Missing all (N=28)	2.301	0.39	0.736
All present (N=21)	2.576	0.348	0.851†
Presence of business-sector organizations			
No business organizations (N=19)	1.758	0.485	0.786
Business organizations present (N=30)	2.838**	0.300***	0.785
Newness of HPOG program			
Pre-existing (N=29)	2.219	0.393	0.795
Newly developed (N=20)	2.71	0.341	0.77

Note: Statistical significance of differences in performance measure by network characteristic: † $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$. Significance is based on two-sample, two tailed *t*- tests assuming equal variances. For comparisons by network size, the *t*-test is between small and large networks.

[a] Proximity refers to the average minimum number of helpful ties between organizations, so is a number rather than a proportion.

Source: HPOG Network Analysis; HPOG Stakeholder/Network survey Q17, 18, 20, 21, 23.

N=49 HPOG program networks

5. HPOG Networks, Local Labor Markets, and Employer Perspectives

HPOG networks operated within local service delivery systems and labor market contexts. This chapter documents the demand for healthcare occupations nationally and in local labor markets, focusing on the most common occupations for which HPOG programs provided training. It also reports the perspectives of employers who hired from, or were approached for hiring by, HPOG programs. These perspectives include feedback on the labor market for entry-level healthcare workers, whether HPOG programs generally met local labor market needs, and whether programs specifically met employers' needs. The chapter also includes program operators' perspectives on local healthcare training opportunities before HPOG and how opportunities changed during HPOG, as well as network members' views on whether systems change objectives were met.

HPOG programs generally responded to local labor market needs; a majority of the most common occupational trainings were offered by HPOG programs in labor markets where wages were rising for these occupations (as a result of either growing employer demand or falling worker supply). A large majority of employers surveyed had hired workers trained through and referred by HPOG programs, and they reported that HPOG job candidates were on par with or better than other applicants. Program operators reported that the HPOG programs also meaningfully expanded opportunities in healthcare training for low-income populations to help meet employer demand for skilled workers. Most partners and stakeholders believed that the HPOG programs and network were able to achieve systems change and that some partners and stakeholders made internal changes to their organizations in response to the HPOG program activities.

5.1 HPOG Program Training Responded to Local Labor Market Demand for Healthcare Occupations

The HPOG Program's implementation occurred in a somewhat contradictory labor market context. Labor demand was generally weakened by the Great Recession of 2007–09, but the health sector experienced increased labor demand and stronger job prospects.

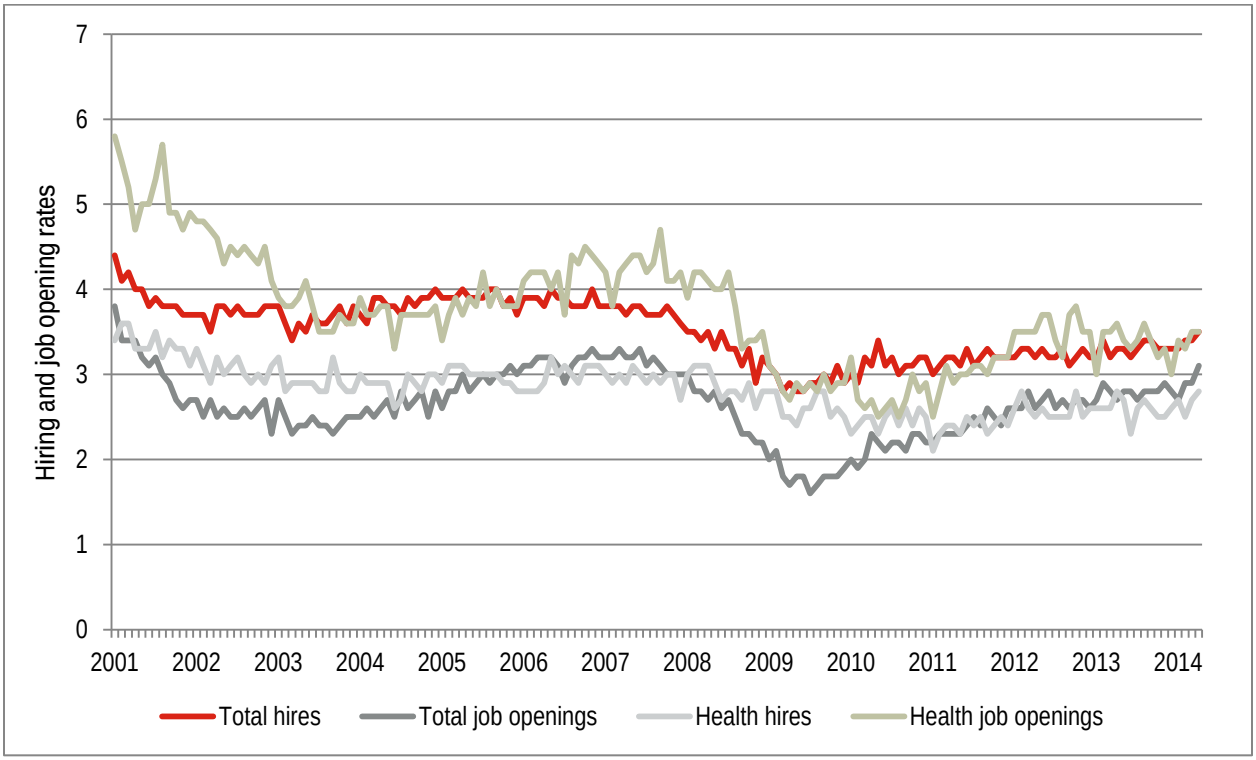
5.1.1 National Labor Market

The health sector experienced dramatic growth before and during implementation of HPOG. From 2003 to 2013, real national health expenditures grew by over 27.5 percent, compared with 22.1 percent growth in real gross domestic product.[41] Both employment and wages for production and nonsupervisory workers in the healthcare industry (which includes most occupations for which HPOG programs provided training) grew over the past decade.[42] Total health-sector employment of these workers increased steadily from under 12 million in 2004 to over 14 million in 2014. Real average hourly earnings grew from $22.50 to $23.20 over the same period. The simultaneous growth in employment and real hourly earnings for production and nonsupervisory health workers suggests that steady increases in labor demand dominated any increase in supply of workers or demand setbacks that might have resulted from the recession.

Job opening and hiring rates (openings and hires divided by employment, respectively) are additional important indicators of labor demand.[43] Healthcare job opening rates exceeded job opening rates for the economy as a whole from 2001 to 2014, indicating that the job market for healthcare workers is stronger than the market for all workers (see Exhibit 5.1). Health-sector hiring rates were consistently lower than total hiring rates, indicating ample openings in the health sector for new participants relative to other sectors. Immediately before the HPOG Program was implemented, health-sector job openings declined

along with all jobs with the onset of the Great Recession.[44] Although there has been some recovery since 2009, job openings in healthcare are not back to their pre-recession peak.

Exhibit 5.1: Total and Healthcare-Sector Job Opening and Hiring Rates Relative to Employment, 2001–14



Source: Job Openings and Labor Turnover Survey from the Bureau of Labor Statistics.

5.1.2 Local Labor Markets

Local HPOG labor markets were not spared from the hardships of the recession. An examination of the local labor markets in which the 49 HPOG programs operated reveals that their unemployment rates were as high as national unemployment rates during the recession, with slow recovery since.[45]

Each HPOG program operated in a local labor market with differing supply and demand for particular healthcare occupations. The study analyzed these differences by examining changes in employment and earnings for key healthcare occupations across the HPOG programs' 29 local labor markets.[46]

Labor market conditions for a given occupation may fall into four groups based on earnings and employment from 2007 to 2010.[47] This timeframe is likely the period during which HPOG programs were deciding on which healthcare training courses to offer.

1. *Rising demand:* An occupation's wages and employment both increased. This labor market context is ideal for a new training program intended to meet industry demand: even as workers enter and employment grows, wages continue to go up.

2. *Falling supply:* An occupation's wages increased while its employment fell. Workers are turning down jobs in these occupations in favor of other options. Changes in occupational entry, such as education and training resources or licensure requirements, could divert labor supply toward other

jobs, as could even higher wage growth in close substitute occupations. In either case, because demand in the market is not falling, these occupations may offer good job prospects for new participants.

3. *Rising supply:* An occupation's wages declined while its employment increased. This situation could result from meeting an increase in demand with an oversupply of labor.

4. *Falling demand:* An occupation's employment and real wages both decreased.

HPOG participants stood the best chance of finding employment in labor markets with *rising demand*, or at least *falling supply*, for the occupations in which they were being trained. Participants could also find jobs in occupations in the *rising supply* and *falling demand* markets, but market conditions would make it more difficult. Exhibit 5.2 provides the number and percentage of HPOG programs whose local labor market was in each demand category for each of the 15 HPOG healthcare training courses with highest enrollment. The final two columns of the exhibit report training participation. Many occupations for which HPOG programs were offering healthcare training (34 percent) were in high demand in local markets just before HPOG implementation. The greatest share of programs in *rising demand* markets was for registered nurses, medical records and health information technicians, and medical assistants. Over one-third of all HPOG programs' training course offerings were in markets in which these occupations were experiencing demand growth from 2007 to 2010.

Nearly another third (31 percent) of all HPOG programs' training course offerings were in markets characterized by *falling supply* for that occupation. HPOG programs offered training for diagnostic-related technologists and technicians, physical therapy assistants and aides, and community and social service specialists mostly in falling supply markets, although a minority of HPOG programs offered the latter two training courses.

The results in these first two categories suggest that most of the frequent HPOG program trainings offered were in labor markets exhibiting growing employer demand for these occupations. In addition, the training with the highest participation - nursing aides, orderlies, and attendants - was largely offered in rising demand and falling supply markets. More than a third (35 percent) of HPOG participants enrolled in this training.

HPOG participants may be able to find employment in *rising supply* labor markets, but the competition may be tougher. Sixty-three percent of nursing, psychiatric, and home health aide training was offered in such labor markets. Just over one-tenth of HPOG training course offerings were in *falling demand* markets. Courses for licensed vocational nurses and emergency medical technicians were concentrated in these markets. Finding work in these occupations in these markets would be more difficult.

Supply and demand conditions also varied across markets for specific occupations. For example, although 11 programs offered training for licensed vocational nurses in falling demand markets, nine programs offering this training were in rising demand markets. And although most labor markets of HPOG programs offering pharmacy technician courses were experiencing rising demand (10 programs) or falling supply (12 programs), several were experiencing falling demand (5 programs). These variations suggest that in choosing occupational training offerings, programs need to take careful stock of their local labor market conditions.

Exhibit 5.2: HPOG Programs Offering Training for Given Occupations by Local Labor Market Conditions, 2007–10

HPOG Healthcare Training Occupation	HPOG Programs Offering Training, by Local Labor Market Conditions										HPOG Participants Enrolled in Training	
	Rising Demand		Falling Supply		Rising Supply		Falling Demand		Not Training	Missing Data	Num.	%
	Num.	%	Num.	%	Num.	%	Num.	%				
Nursing aides, orderlies, and attendants	13	31%	17	40.5%	10	23.8%	2	4.8%	6	1	11,284	35%
Licensed and vocational nurses	9	31	7	24.1	2	2.5	11	37.9	19	1	3,191	10
Registered nurses	14	51.9	8	29.6	4	14.8	1	3.7	21	1	2,696	8
Medical records and health information technicians	17	50	11	32.4	5	14.7	1	2.9	13	2	2,585	8
Medical assistants	17	53.1	0	0	14	43.8	1	3.1	16	1	2,423	8
Miscellaneous healthcare support occupations	9	28.1	5	15.6	13	40.6	5	15.6	15	2	2,143	7
Nursing, psychiatric, and home health aides	5	31.3	0	0	10	62.5	1	6.3	30	3	1,530	5
Pharmacy technicians	10	31.3	12	37.5	5	15.6	5	15.6	15	2	1,043	3
Diagnostic-related technologists and technicians	0	0	23	88.5	0	0	3	11.5	19	4	784	3
Emergency medical technicians and paramedics	2	11.8	3	17.6	6	35.3	6	35.3	26	6	687	2
Health practitioner support technologists and technicians	8	44.4	5	27.8	5	27.8	0	0	28	3	412	1
Clinical laboratory technologists and technicians	3	42.9	1	14.3	2	28.6	1	14.3	39	3	378	1
Physical therapy assistants and aides	5	41.7	6	50	1	8.3	0	0	33	4	264	1
Miscellaneous community and social service specialists	0	0	3	60	2	40	0	0	41	3	218	1
Occupational therapy assistants and aides	2	50	1	25	1	25	0	0	36	9	186	1
Total, top 15 occupations	**114**	**34.2**	**102**	**30.6**	**80**	**24**	**37**	**11.1**	**357**	**45**	**29,824**	**90**

Note: Shaded columns indicate more favorable labor market conditions for HPOG participants trained in those occupations. Occupations listed are the top 15 occupations for which HPOG participants trained, listed in the order of the most commonly trained for across the HPOG program. Percentages are of all programs offering training in that occupation. “Not training” refers to the number of programs that did not offer healthcare training in that occupation. “Missing data” refers to the number of programs in which the sample for that occupation in the local labor market was insufficient to calculate demand conditions.

Source: Authors’ calculations from Occupational Employment Statistics, Bureau of Labor Statistics.

N=49

5.2 Employers Confirmed HPOG Programs Aligned with Employer Demand

Employer perspectives can also help document the alignment of HPOG training courses with labor market demand. This section reports on information gathered from 146 employers who hired HPOG participants or had been approached by HPOG programs as candidates to hire participants. Employers reported on their demand and their hiring practices for entry-level employees in HPOG programs' targeted healthcare occupations. Employers also reported on their experiences with the HPOG programs.[48] These descriptive data and examples provide a context for the labor demand data presented in section 5.1. A description of the survey, the sample frame, and the analysis are provided in Appendix B.

The employers surveyed reported the most hiring in occupations for which HPOG programs commonly provided training. More than two-thirds (68 percent) of the 146 employers surveyed cited nursing aides, home health aides, and registered nurses as the three most common occupations for which they had hired in the previous two years. These high-demand occupations were also among the most commonly trained for in HPOG programs, accounting for 46 percent of occupational training enrollment.[49]

Another way to understand the alignment of HPOG programs to local labor market demand is by examining how HPOG programs met the skills and hiring needs of employers in their communities. For example, in the previous two years, 84 percent of employer respondents had hired workers referred by HPOG programs. This high percentage of hires suggests that HPOG programs were aligned with local labor market demand.

In addition, a majority of employers reported HPOG job candidates were better than their average applicants on areas related to skill and job performance.[50] Almost three-quarters of employer respondents ranked HPOG program referrals as above average on English language abilities, the highest skill ranking they gave (see Exhibit 5.3). Nearly two-thirds (63 percent) reported job performance of HPOG referrals as above average. Roughly half (52 percent) of the employers surveyed said the skills directly related to the job of HPOG program referrals were above average. One in 10 said these skills were worse than average. Employers ranked HPOG referrals somewhat higher on two rubrics, dependability and reading, writing, verbal, and mathematic skills (54 and 58 percent, respectively). Among reported skill and hiring needs, employers ranked HPOG referrals lowest on "willingness to work odd or flexible hours" (49 percent). This finding is consistent with research demonstrating the difficulties that nonstandard work schedules pose to workers, particularly mothers, as well as the high proportion of these types of schedules in the healthcare industry.[51] A large percentage of HPOG participants (69 percent) were women with children.[52]

Exhibit 5.3: Employer Perspectives on Whether HPOG Program Job Candidate Referrals Met Their Skill and Hiring Needs

Statement About HPOG Program Job Candidate Referrals	Employers Agreeing with Statement[a]	
	Number	Percentage
English language proficiency of HPOG referrals are above average (N=99)	73	74%
Job performance of HPOG referrals is above average (N=93)	59	63
Reading, writing, verbal, or mathematic skills of HPOG participants are above average (N=90)	52	58
Dependability of HPOG referrals is above average (N=94)	51	54
Skills directly related to the job of HPOG referrals are above average (N=98)	51	52
Willingness to work odd or flexible hours is above average (N=97)	48	49

Note: [a] Agreement means the respondent answered 4 or 5 on a scale from 1 ("below average") to 3 ("same as average") to 5 ("better than average").

Source: HPOG Employer survey, 2014, Q31b, Q33, and Q35.

The survey also asked employers about their satisfaction with different aspects of their local HPOG programs relative to employer demand. Two-thirds of employers agreed that the HPOG program effectively filled job positions and produced graduates with needed healthcare skills (see Exhibit 5.4). A slightly lower percentage (63 percent) agreed they were satisfied with the job readiness of HPOG participants.

Exhibit 5.4: Employer Satisfaction with HPOG Program Meeting Labor Market Needs

Statement About HPOG Program	Employers Agreeing with Statement[a]	
	Number	Percentage
HPOG program is effectively filling available positions in the local healthcare industry (N=108)	71	66%
HPOG program is effectively producing graduates with the healthcare skills needed (N=109)	75	69
Respondent satisfied with job-readiness of HPOG participants (N=107)	67	63

Note: [a] Agreement means the respondent answered 4 or 5 on a scale from 1 ("strongly disagree") to 5 ("strongly agree").

Source: HPOG Employer survey, 2014, Q31b, Q33, and Q35.

The fact that some workers have skills gaps does not necessarily depress hiring in high-demand occupations and tight labor market sectors such as healthcare. It is well-documented that when labor markets are tight, employers are willing to relax some work requirements.[53] Exhibit 5.5 shows some evidence of hiring difficulty among HPOG employers. One-third of employers reported it was very challenging to find qualified applicants, and 44 percent said they occasionally or frequently hired someone who did not meet all their selection criteria.

Exhibit 5.5: Employer Hiring Difficulties

Employer Reports on Hiring Challenges	Employers Reporting[a]	
	Number	Percentage
Employer has occasionally or frequently hired someone for the most common occupation position who did not meet all the selection criteria (N=133)	59	44%
Employer finds it very challenging to find qualified applicants for the most common occupation at the present time (N=142)	47	33

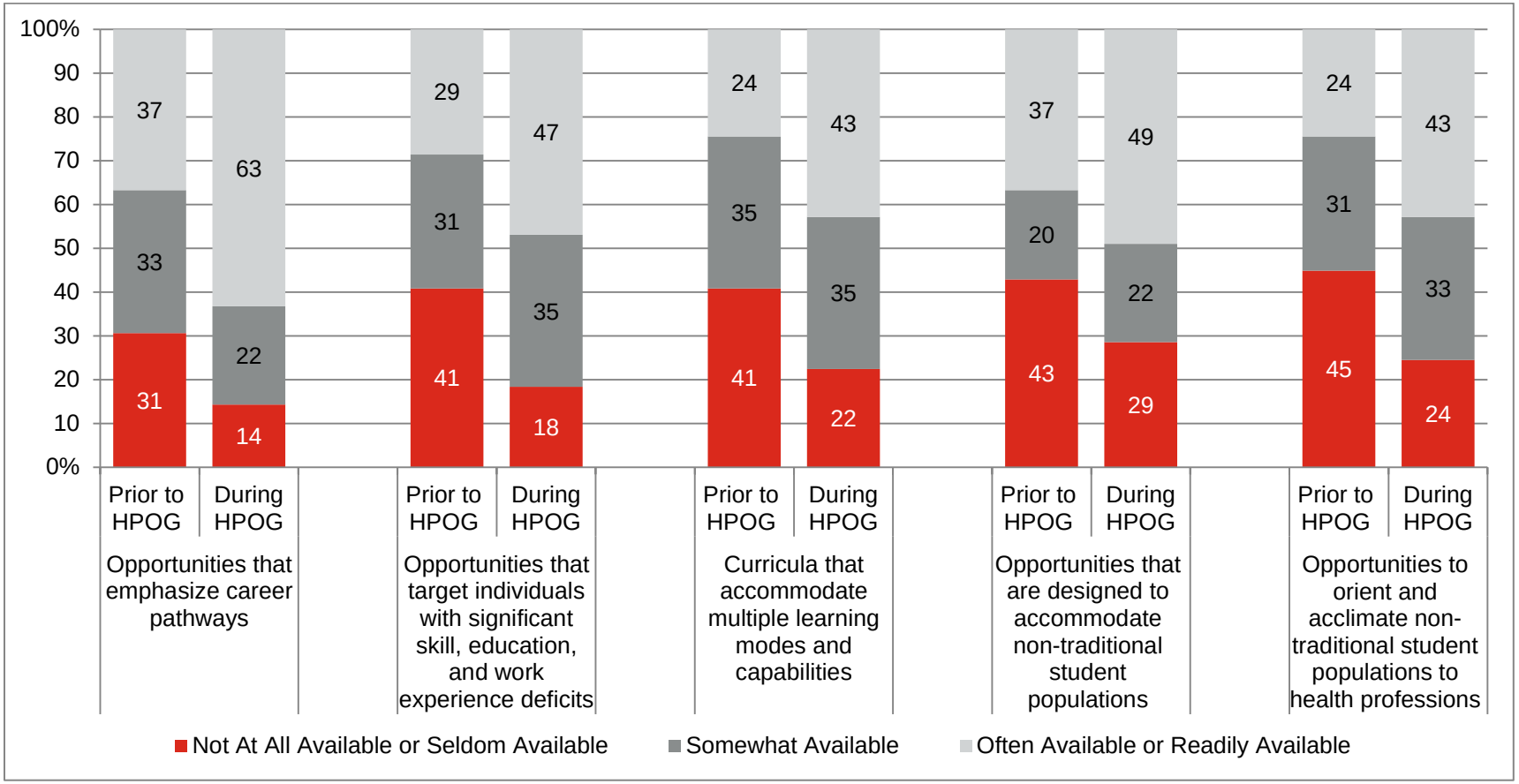
Source: HPOG Employer survey, 2014, Q20 and Q21.

In addition, employers gave relatively high marks to HPOG participants' job performance, with roughly half to two-thirds of employers ranking HPOG referrals as above average on a variety of job dimensions.

5.3 Program Operators Reported HPOG Programs Expanded Healthcare Training Opportunities

Expanding healthcare training opportunities was one of the goals for the HPOG Program.[54] Many HPOG programs were operating similar programs for similar populations before the HPOG grants. However, according to program operators, the HPOG Program expanded opportunities in healthcare occupational training for low-income populations (see Exhibit 5.6). More program operators felt training opportunities were more often widely available during the HPOG Program compared to prior. They felt specific types of training opportunities had expanded, including those supporting non-traditional students and students with skill or education deficits. In addition, many more program operators reported that training opportunities emphasizing career pathways were available during the HPOG Program compared to before the grant period. Importantly, however, even after the HPOG programs had been implemented, some respondents still felt that such opportunities were not readily available in their communities (14 to 29 percent of program operators, depending on the training opportunity). In the opinions of these respondents, there was still unmet local demand for such services.

Exhibit 5.6: Availability of Healthcare Training Before and After HPOG Was Implemented



Note: The survey asked respondents to rate the availability of healthcare trainings on a response scale of 1 ("not at all available") to 5 ("ready available"). Responses of 1 or 2 are considered not at all available or seldom available, 3 is considered being somewhat available, and 4 or 5 are considered often available or readily available.

Source: HPOG Grantee survey, 2014, Q4.1 and 4.2b.

N=49 HPOG program networks

5.4 Most Partners and Stakeholders Felt that the HPOG Programs Achieved Systems Change Objectives

On average, 75 percent of a network's partners and stakeholders agreed that HPOG programs helped achieve two or more key objectives for changing education and training systems; only 2 percent thought no changes were made (see Exhibit 5.7). Partners and stakeholders most commonly reported that HPOG programs helped clearly define healthcare career pathways or ladders (59 percent); they reported far less frequently that HPOG programs helped develop employer supports for programs, such as including company leaders in program guidance or having employers provide incentives for their employees in HPOG programs to complete training (19 percent). Other changes to education and training systems were making training accessible in convenient locations (56 percent), providing a wider range of healthcare training options (54 percent), providing effective recruitment strategies for the target population (52 percent), creating innovative and accelerated training programs (47 percent), offering basic education and pre-training activities (45 percent), and offering employment-based learning opportunities (35 percent).

Exhibit 5.7: Partner and Stakeholder Organizations' Perceptions of HPOG Programs' Contribution to Employment and Training Systems Objectives

Objective	Average Share of Partners and Stakeholders Who Agreed HPOG Program Helped Achieve Objective (Percentage)
Clearly defined healthcare career pathways or ladders	59%
Healthcare training opportunities in locations convenient and/or accessible to the program target population of low-income individuals with limited education and employment experience	56
Training for many healthcare career types	54
Effective recruitment strategies to attract low-income populations with limited education and employment experience to seek healthcare training opportunities	52
Innovative training programs for healthcare careers	47
Basic education and pre-training activities to prepare individuals for healthcare training	45
Employment-based learning opportunities	35
Employer supports	19
Do not know	16
No changes	2
Any change	82
Two or more changes	75

Note: The study measures the average proportion of partners and stakeholders reporting achievement of an objective by first calculating the proportion in each network, then taking the average proportion across all networks. "No changes" means a respondent selected "none of the above." Tabulations are only of nonmissing responses.

Source: HPOG Stakeholder/Network survey, 2014, Q39.

N=47 HPOG program networks

5.5 HPOG Programs Experienced Shifting Contexts and Resources

Initiatives such as the HPOG Program take place in dynamic local and regional contexts. The survey asked partners and stakeholders about an array of external circumstances, ranging from economic conditions to the local healthcare labor market and the political climate, as well as changes in organizational resources within their own organizations and those of their fellow network members.

An average of 82 percent of partners and stakeholders reported that an external event had affected the success of different programs and participants (see Exhibit 5.8). Changes in partners' organizational resources were a common external event. On average, 30 percent of partners and stakeholders within a network reported that increases in HPOG partners' organizational resources (such as budget, staff, equipment, and space) had contributed to HPOG's success. At the same time, 25 percent indicated that decreases in HPOG partners' organizational resources had negatively affected HPOG's success. Although the HPOG grants provided a valuable funding stream, the success of programs still depended in part on the resources that programs could leverage from other organizations in the network. The most common negative event, reported by an average 42 percent of partners and stakeholders within a network, was unfavorable economic conditions. As seen in similar grant programs,[55] challenging economic conditions can affect a training program's ability to work with employers and industry and can reduce the job opportunities for program graduates.

Exhibit 5.8: Partner and Stakeholder Organizations' Perceptions of External Events Affecting HPOG Programs

Type of External Event	Average Share of Partners and Stakeholders Reporting Event (Percentage)
Positive	
Increases in HPOG partners' organizational resources	30%
Increases in responding organization's resources	21
Opening or expansion of prominent healthcare employer	19
Favorable economic conditions	17
Favorable political climate	12
Other positive event	2
At least one positive event	57
No positive events	43
Negative	
Unfavorable economic conditions	42
Decreases in HPOG partners' organizational resources	25
Decreases in responding organization's resources	23
Closing or downsizing of prominent healthcare employer	13
Competing initiative(s) serving the same population	13
Unfavorable political climate	10
Other negative event	5
At least one negative event	64
No negative events	36
All	
At least one event (positive or negative)	82
No external events	18

Note: The study measured the average proportion of partners and stakeholders reporting an event by first calculating the proportion in each network, then taking the average proportion across all networks. "No positive events" means a respondent selected "none of the above" for the survey item about positive events. "No negative events" means a respondent selected "none of the above" for the survey item about negative events. "No external events" means a respondent selected "none of the above" for both survey items. Tabulations are only of nonmissing responses.

Source: HPOG Stakeholder/Network survey, 2014, Q37 and 38.

N=46 HPOG program networks

5.6 A Minority of Partners and Stakeholders Changed Their Internal Practices

On average, fewer than half (45 percent) of partner and stakeholder organizations within a network reported making any changes to internal practices as a result of participating in HPOG programs. Those practices include administration, procedures, management, and policies. Thirty percent made two or more internal changes.

Exhibit 5.9 displays an array of potential changes to internal practices that partners and stakeholders reported on. The three most common were changes to how they reported participant and performance data (19 percent),[56] the types of education and training services they provided (16 percent), and the partnerships they formed with organizations other than the program operator (16 percent). Members of networks operated by a non-profit organization were more likely than members of other networks to indicate that they changed their financing structures (e.g., adapting systems to federal grant requirements), their process for delivering services and supports, the types of education and training and support services they provided, the participant or performance data they reported, and their organizational expectations for program performance and participant outcomes.

In some cases, HPOG program operators were not able to make internal changes but were able to work with partners to modify policies and practices that affected program operations. The HPOG program staff interviewed at one WIB described a conflict between state requirements for TANF work participation and the length of their training. In this case, they worked with the state social services department administering TANF to provide an exception to the work requirements for HPOG participants.

Exhibit 5.9: Internal Changes to Partner and Stakeholder Organizations as a Result of the HPOG Program, by Selected Network Characteristics

	Average Share of Partner and Stakeholder Organizations Reporting Change As a Result of HPOG Program (Percentage)							
		Network Size			Program Operator Type			
Type of change	All networks (N=47)	Small (N=15)	Medium (N=16)	Large (N=16)	Educational institution (N=24)	Workforce agency (N=12)	Government agency (N=3)	Non-profit Organization (N=8)
Participant data or performance tracking	19%	20%	23%	15%	19%	16%	17%	24%
Type(s) of education/training services provided	16	14	21	14	12	16	19	27
Partnerships with organizations other than program operator	16	6	19	21	11	20	18	21
Process of delivering services/supports	15	14	19	11	13	13	13	23
Procedures for accessing services/supports	13	17	11	12	14	12	20	13
Expectations for performance and participant outcomes	13	15	14	11	8	13	5	32
Eligibility rules or targeted groups	9	11	8	9	6	13	10	13
Type(s) of support services provided	9	5	13	10	6	12	3	18
Financing	6	5	7	7	4	4	3	17
Other	1	0	3	1	2	0	2	1
No changes	55	57	50	59	56	53	54	57
Any change	45	43	50	41	44	47	46	43
Two or more changes	30	31	34	26	28	28	32	39

Note: The study measures the average proportion of partners and stakeholders reporting a change by first calculating the proportion in each network, then taking the average proportion across all networks of a given type. Percentages are based on nonmissing responses only.

Source: HPOG Stakeholder/Network survey, 2014, Q40.

6. Effectiveness and Sustainability of Programs and Network Relationships and Their Influence on Systems

The sustainability of relationships fostered during the HPOG grant period is an important component of systems change. If the relationships revert to their previous state once the funding ends, then the changes made are unlikely to be sustained. Partners' and stakeholders' perspectives provide useful indicators of whether systems changes can be sustained beyond the end of the grant.

This chapter describes partners' and stakeholders' views of their HPOG programs, the collaboration within their networks, and the sustainability of program efforts and network relationships. Across the HPOG programs, partners and stakeholders generally felt positive about the effectiveness of the collaboration within their networks. They were mostly positive about the helpfulness of other organizations' contributions to program success, and viewed this helpfulness as having improved over the grant period. Partners and stakeholders felt satisfied with the HPOG programs' ability to achieve their goals, with the HPOG programs' effectiveness, and with the overall program and its activities. However, they also noted some challenges. Partners and stakeholders viewed participants' personal barriers and their ability to engage in and complete the HPOG program as the most significant challenge.

Partners and stakeholders were highly confident that the working relationships developed during the HPOG Program with program operators and with other network organizations would be sustained beyond the grant period. However, HPOG staff at several programs expressed concerns about the challenges of sustaining programming after the HPOG grants end.

6.1 Most Partners and Stakeholders Felt that Networks Worked Together and Shared Information Effectively

Partners and stakeholders generally felt positive about the collaboration within their HPOG networks. A network's partners and stakeholders had an average rating of 4.02 on the strength of the network collaboration in supporting key HPOG goals, using an index scaled from 1 to 5, where 5 indicates strong collaborative effectiveness (see Exhibit 6.1).[57] On average, most of a network's partners and stakeholders agreed with each statement about collaborative effectiveness. Partners and stakeholders most strongly agreed (85 percent on average) that network members were in accord about the key goals of their HPOG programs. Only small differences in the perceptions of collaboration existed between different types of networks.

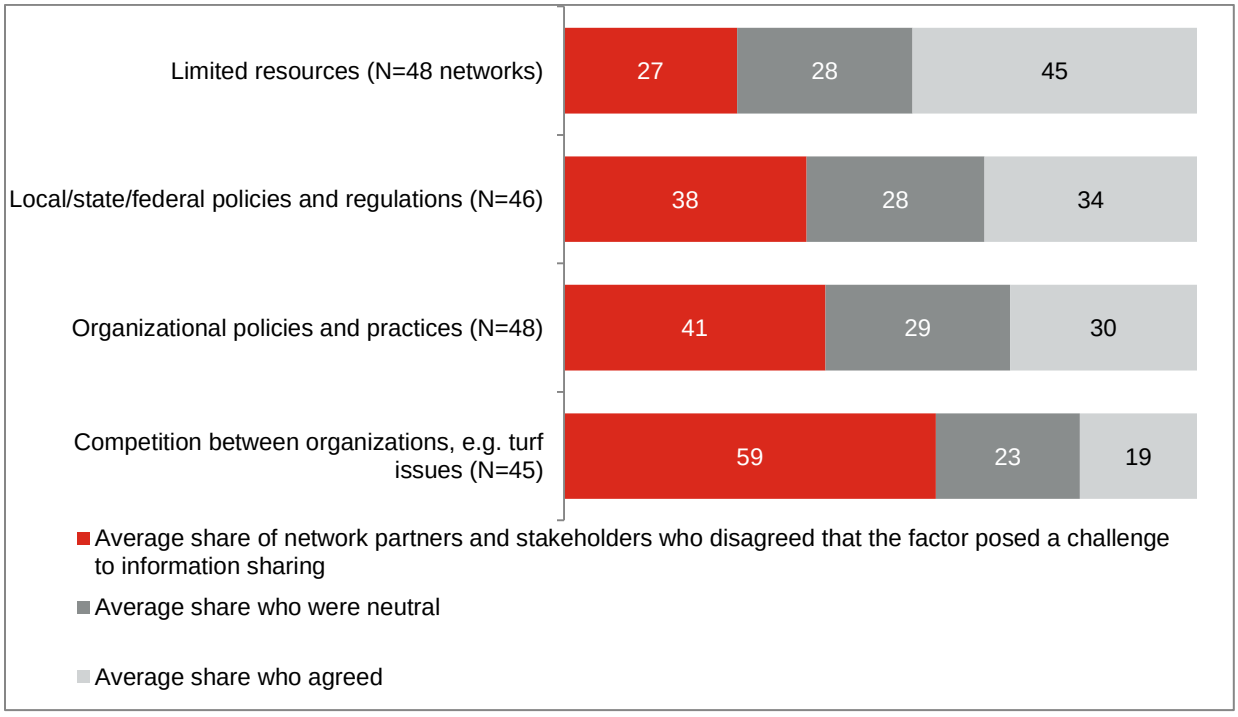
Information sharing was a crucial element of the HPOG network relationships, but nearly half the partners and stakeholders (45 percent in an average network) viewed limited resources as a challenge to effective information sharing (see Exhibit 6.2). Other challenges to information sharing included government regulations (34 percent), organizational policies and practices (30 percent), and competition among organizations (19 percent). However, partners and stakeholders generally did not think there were serious challenges to information sharing in the HPOG program networks. On an index measuring the perception of serious information-sharing challenges, with 5 indicating serious challenges, the average score of a network's partners and stakeholders was 2.86.[58]

Exhibit 6.1: Average Network Scale Scores

Scale	Average Network Score
Effectiveness of collaboration (N=47 networks)	4.02
Challenges to information sharing (N=48)[a]	2.86
Current organizational support for HPOG program (N=47)	4.07
Improvement in organizational support for HPOG (N=48)	3.87
Achieving desired outcomes (N=47)	4.29
Organizational satisfaction with HPOG program (N=47)	4.38
Organizational satisfaction with HPOG components (N=47)	4.41
Challenges to HPOG programs' success (N=46)[a]	2.79
Perceptions of sustainability (N=46)	4.04
Challenges to sustainability (N=47)[a]	2.83

Note: See Appendix C for detail on how the study constructed each scale and used which survey questions. All scores are on a scale between 1 and 5; in all but three noted cases, a higher score indicates stronger performance.
[a] Higher score indicates poorer performance.

Exhibit 6.2: Partner and Stakeholder Organizations' Perceptions of Challenges to Information Sharing



Note: The average proportion of partners and stakeholders agreeing with, neutral about, or disagreeing with a statement is the result of first calculating the proportion in each network, then taking the average proportion across all networks. The survey asked respondents to rate their level of agreement that each factor posed challenges to information sharing on a scale from 1 ("strongly disagree") to 5 ("strongly agree"). Responses of 1 or 2 are considered disagreeing, 3 is considered being neutral, and 4 or 5 are considered agreeing. Tabulations are only of nonmissing responses.

Source: HPOG Stakeholder/Network survey, 2014, Q27.

6.2 Partners and Stakeholders Helped Each Other, and Increasingly So over Time

Network partners and stakeholders were mostly positive about other organizations' contributions through the provision of direct resources, employment or training opportunities, and other activities. Within networks, partners and stakeholders had an average rating of 4.07, where 5 indicates other organizations in the network were very helpful.[59] Most partners and stakeholders agreed on how much various types of organizations helped contribute to the success of the HPOG program. Education and training providers were seen as having the greatest contribution to the program's success: an average of 89 percent of a network's partners and stakeholders viewed them as helpful. The next most helpful organizations were case management and counseling providers (80 percent) and social service providers (76 percent), followed by employers (69 percent) and local and state government (61 percent). Survey respondents considered foundations the least helpful organizations: only 37 percent of a network's partners and stakeholders viewed them as contributing to the program's success.[60] This perception of foundations' lack of helpfulness may reflect that foundations were rarely included in HPOG networks.

Views on how helpful different providers were to HPOG program success often improved over the course of the grant period. On average, 73 percent of a network's partners and stakeholders thought education and training providers had become more helpful since the start of the grant period. About 60 percent thought case management and counseling providers, social service providers, and employers became more helpful over time. Only 41 percent indicated that local and state government became more helpful over the grant period. Foundations were the least likely group to become more helpful to the program's success at 25 percent. On an index measuring perception of improved helpfulness, the average network's score was 3.87, where 5 indicates strong increased helpfulness.[61] The greatest increase in perceived helpfulness was for networks with non-profit program operators, which had an average score of 4.50, compared with 3.99 for government, 3.77 for workforce agencies, and 3.66 for educational institutions.

6.3 Partners and Stakeholders Were Highly Satisfied with How HPOG Programs Supported Participants

Partners and stakeholders felt highly satisfied with the HPOG programs' ability to achieve their goals, with the HPOG programs' effectiveness, and with the overall program and program activities. On average, 85 percent of a network's partners and stakeholders agreed that the HPOG program produced graduates with the needed healthcare skills, and 84 percent agreed that the HPOG program effectively engaged targeted participants (i.e., TANF and other low-income individuals). Agreement was also high among a network's partners and stakeholders that the HPOG program developed career ladders for HPOG participants (80 percent) and filled available positions in the local healthcare industry (74 percent). The average index score of a network's partners' and stakeholders' satisfaction with the program's effectiveness in achieving these desired outcomes was 4.29, where 5 indicates high satisfaction.[62]

Most partners and stakeholders within HPOG networks were satisfied with their HPOG programs. At least three-quarters of a network's partners and stakeholders were satisfied with the job readiness of participants (81 percent), adherence to program goals (79 percent), the program design (75 percent), and the resources available (75 percent). A smaller percentage—68 percent—was satisfied with the program's success in placing participants in jobs. The average score among networks' partners and stakeholders of their overall satisfaction with their HPOG program was 4.38, where 5 indicates high satisfaction.[63]

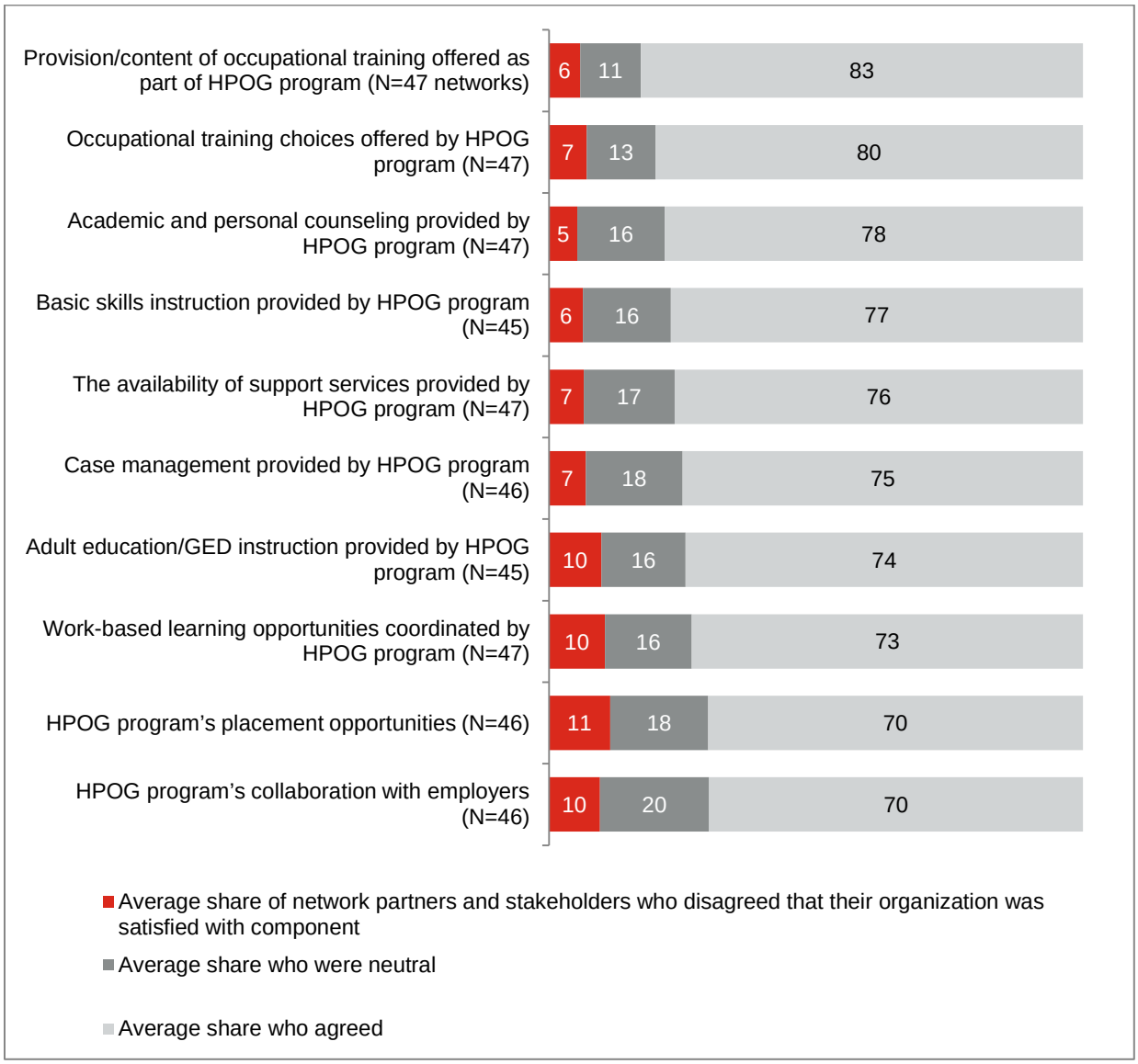
6.4 Partners and Stakeholders Were Highly Satisfied with the Activities Provided by HPOG Programs

When looking at specific activities of the HPOG programs, 70 percent or more of a network's partners and stakeholders, on average, were satisfied with occupational training choices, delivery and content of training, adult education and other basic skills instruction, case management, academic and personal counseling, support services, work-based learning opportunities, collaboration with employers, and job placement opportunities (see Exhibit 6.3). Rates of satisfaction were higher regarding occupational training (80 percent satisfied with occupational training choices and 83 percent with the delivery and content of occupational training); rates were slightly lower on collaboration with employers and job placement opportunities (70 percent). Regarding these HPOG activities, the average score for the partners and stakeholders within a network on an index of satisfaction was 4.41, where 5 indicates high satisfaction.[64]

6.5 HPOG Participants' Personal Barriers Were Viewed as the Greatest Challenge

HPOG programs often operated in resource-constrained environments while trying to support and guide participants who faced significant personal barriers. As shown in Exhibit 6.4, partners and stakeholders viewed participants' personal barriers and their difficulties engaging in and completing the HPOG programs as the most significant challenge for the programs (reported by 58 percent of partners and stakeholders within networks, on average). About two in five of a network's partners and stakeholders indicated that identifying applicants who could be successful with the training (40 percent) and making employers aware of the HPOG program (39 percent) were serious challenges. Around one-third thought the adequacy of time (35 percent) and resources (33 percent) needed to prepare participants fully, as well as the mix of available services (33 percent), were serious challenges to the program's success. Fewer partners and stakeholders in a network reported employers' confidence in program graduates (26 percent), a clear vision for the program (19 percent), the program's organization and management (18 percent), and the quality of training (18 percent) as serious challenges. On an index measuring the perception of serious challenges, the average network score was 2.79, with 5 indicating serious challenges.[65] This score reflects that while there were some challenges, they were not necessarily serious or detrimental to the HPOG programs.

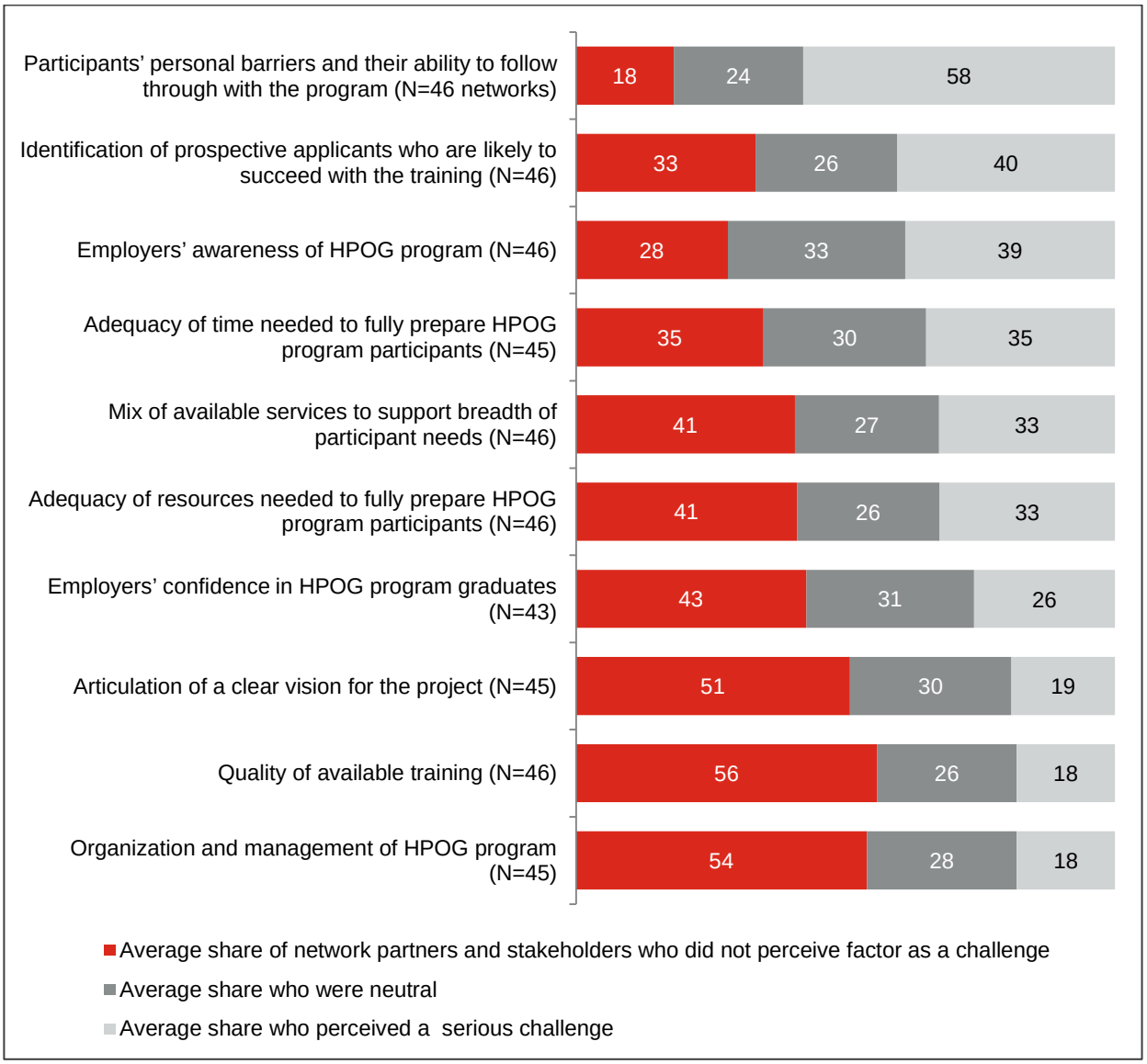
Exhibit 6.3: Partner and Stakeholder Organizations' Satisfaction with Components of the HPOG Program



Note: The average proportion of partners and stakeholders agreeing with, neutral about, or disagreeing with a statement is the result of first measuring the proportion in each network, then taking the average proportion across all networks. The survey asked respondents to rate their level of agreement that their organization was satisfied with the component on a scale from 1 ("strongly disagree") to 5 ("strongly agree"). Responses of 1 or 2 are considered disagreeing, 3 is considered being neutral, and 4 or 5 are considered agreeing. Tabulations are only of nonmissing responses.

Source: HPOG Stakeholder/Network survey, 2014, Q32.

Exhibit 6.4: Partner and Stakeholder Organizations' Perceptions of Serious Challenges to the Success of the HPOG Program



Note: The average proportion of partners and stakeholders perceiving a factor as not a challenge, as neutral, or as a serious challenge is the result of first calculating the proportion in each network, then taking the average proportion across all networks. The survey asked respondents to rate their level of challenge posed by the component on a scale from 1 ("not a challenge") to 5 ("a serious challenge"). Responses of 1 or 2 are considered not perceiving a challenge, 3 is considered neutral, and 4 or 5 are considered perceiving a serious challenge. Tabulations are only of nonmissing responses.

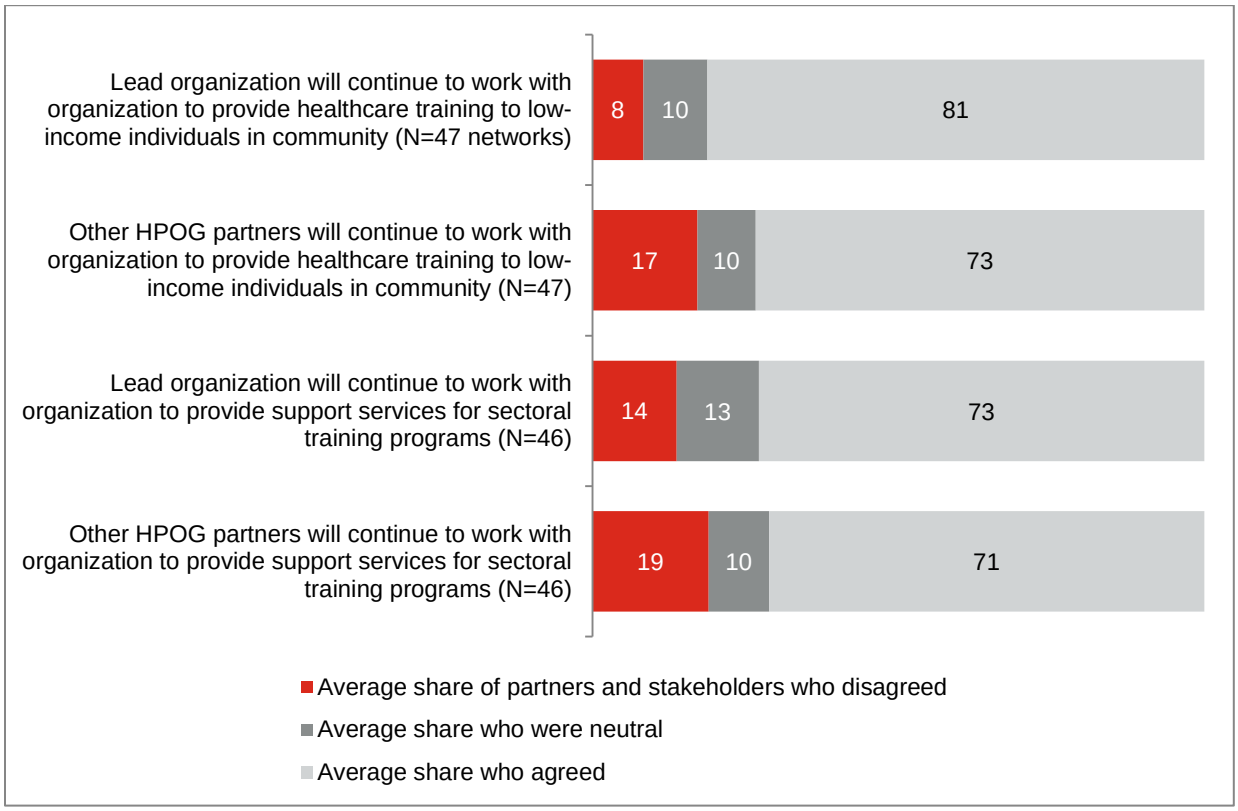
Source: HPOG Stakeholder/Network survey, 2014, Q35.

6.6 Most Network Members Planned to Continue to Collaborate

Continuing relationships with partners is an important way to sustain career pathway programs once initial funding has ended.[66] Most partners and stakeholders believed that working relationships within networks would continue beyond the end of the grant period. Within networks, most partners and stakeholders indicated they would continue to work with other members of their network—the program operator and the partner and stakeholder organizations—on providing both healthcare training and support services to the target population.

On average, 81 percent of partners and stakeholders within a network agreed that the program operator would continue to work with them to provide healthcare training, and 73 percent agreed that the program operator would continue to work with them to provide support services (see Exhibit 6.5).

Exhibit 6.5: Partner and Stakeholder Organizations' Perceptions of Sustainability of HPOG Relationships



Note: The average proportion of partners and stakeholders agreeing with, neutral about, or disagreeing with a statement is the result of first calculating the proportion in each network, then taking the average proportion across all networks. The survey asked respondents to rate their level of agreement with each statement on a scale from 1 ("strongly disagree") to 5 ("strongly agree"). Reponses of 1 or 2 are considered disagreeing, 3 is considered neutral, and 4 or 5 are considered agreeing. Tabulations are only of nonmissing responses.

Source: HPOG Stakeholder/Network survey, 2014, Q33.

Partners and stakeholders also expected to sustain relationships with other partner and stakeholder organizations in their networks after the grant period ends—not just with the program operators. On average, 73 percent of partners and stakeholders in a network agreed that other HPOG partners would continue to work with them to provide healthcare training to low-income individuals in the community, and 71 percent agreed they would continue to partner to provide support services for training programs. Similar to relationships with the program operator, the shares of expected collaboration beyond the grant period were highest in workforce-development-agency-led networks (80 and 79 percent on training and supports, respectively, compared with shares between 61 and 74 percent in other networks) and in networks that developed HPOG programs based on existing programs (78 and 76 percent, respectively, compared with 66 and 64 percent in newly developed networks).

6.7 Partners and Stakeholders Had High Confidence in Networks' Sustainability

Partners and stakeholders were also highly confident that the network relationships would be sustained. On an index measuring confidence in the sustainability of network relationships, the average network score was 4.0, where 5 indicated high confidence.[67] Across all HPOG program partners and stakeholders, formal partners were most confident about the sustainability of the network relationships, with an average score of 4.3.

HPOG partners and stakeholders, for the most part, did not perceive serious challenges to sustainability, such as poor economic conditions, excess supply of labor, lack of a common mission, individual organizations' resource constraints, and production of trained workers. On an index measuring perception of challenges to sustainability, the average score for partners and stakeholders within a network was 2.8, just below the neutral value for the scale and where 5 indicated serious challenges.[68]

Although the partners and stakeholders were generally optimistic about the sustainability of network relationships, staff and program participants at several programs expressed concerns about the challenges of sustaining programming in the absence of continued funding after the grant period ended. Staff found it difficult to project the number of people the program could serve and the type of services it could provide after the grant funding ended. At several programs, staff predicted that it would not be possible for the program to continue operating at a similar level. Some managers and staff members indicated that they were trying to procure other funding sources to sustain their HPOG programs.

7. HPOG Networks and Service Delivery Systems: Lessons and Policy Implications

This report describes the HPOG program operators' partnerships and organizational network structures and assesses how the service delivery systems changed during the HPOG Program. The goal is to help policymakers and practitioners better understand how their local systems can support training programs similar to the HPOG Program, which targets low-income individuals whose pathways to success can benefit from integrated training, supports, and employer engagement. The report uses both implementation evaluation methods and systems change theory to provide a comprehensive picture of the systems in which the HPOG programs operated, including the partners and stakeholders and their relationships with the program operators, as well as the labor market and community contexts in which programs operated.[69]

This report represents one of the first efforts to evaluate comprehensively the systems that can support training programs for low-income adults, as described in the career pathways model.[70] The analysis is exploratory and is a first step in understanding systems change for training programs and how they can increase collaboration among network members and better leverage community resources to support programs and their participants.

A key premise of the HPOG Program is that it has to address both supply- and demand-side issues for the healthcare labor market. To address supply-side issues, the HPOG programs developed training and support services involving multiple types of partners to ensure that the individuals served could complete the program and find healthcare jobs. This study found that the HPOG networks generally had a diverse set of organizations participating, but some types of organizations, such as education and training organizations, were more often present than others and involved in more than one role in program operations. Collaborations with healthcare employers, which represented the demand side for this initiative, could have been stronger; business organizations were represented in just over half of the networks, mostly larger ones. Because the HPOG Program is intended to be responsive to employer demand, greater encouragement of employer and industry partnerships may be important for future efforts. However, the efforts by HPOG programs to be responsive to employer demand were successful. HPOG programs were aligned with labor demand to a great extent, providing training in occupations that were in high demand in their communities. In addition, employers were generally satisfied with the HPOG programs and their graduates.

Most organizations in the HPOG network played multiple roles in HPOG program operations and activities, with outreach and referral being the most common. On average, 84 percent of partners engaged in two or more activities. However, a small share of network members were "stakeholders," playing no role in program operations but interested in the success of the HPOG programs. Future research should examine the roles of stakeholders in training programs for low-income individuals to further understand how and why they support the success of the programs.

Although some partners were more involved than others, network analysis measures showed that overall collaboration within networks increased in various ways in the three years after the start of the grant. The organizations within networks became more connected, and the program operators became more central to the networks. Another promising development was the high degree of cross-organizational collaboration shown within HPOG networks; organizations in different service areas (education and training, workforce development, government, non-profit, and business) were collaborating effectively.

This collaboration across service lines is promising, as it may have increased the likelihood that participants received all of the services they needed and that beneficial working relationships among training providers, support providers, and employers will be maintained after the HPOG grant period ends.

The results were mixed regarding which network features were associated with stronger collaborative performance. The type of organization operating the program, the size of a program network, and the inclusion of business organizations and other key partners may matter, but the results were not conclusive. For example, government agency-led networks were better at partnering with other government agencies and larger networks were more likely to include employer partners. However, the reasons for these findings are unclear and a better understanding and testing of how networks form and how various features of networks may be linked to stronger network collaboration should be explored in implementing healthcare education and training programs for low-income adults.

The study also found that partners and stakeholders were highly positive about the effectiveness of the programs and the potential to sustain the relationships that had been built over the grant period. However, partners and stakeholders made few internal changes that may have supported longer-lasting change to their education and training and human service systems. In addition, most partners and stakeholders viewed the participants' personal barriers and their difficulty engaging in and completing the HPOG programs as the greatest impediments to success. Developing strategies to address these challenges earlier in the grant may help the next cohort of HPOG grantees and program operators of similar programs to develop effective collaborations that last beyond the end of the grant.

Although this study was able to examine collaboration within HPOG networks, future research could investigate how key network characteristics and collaborative performance may be related to HPOG program participant outcomes and impacts. It would require the formulation of specific research questions and corresponding analyses, such as

1. Do programs that have networks with increased collaboration have better participant outcomes? and
2. Do programs with greater employer involvement in their networks experience better participant outcomes?

More broadly, this research suggests the need for more conceptual and empirical work to measure systems change.[71] Such future research would be helpful to both policymakers and practitioners to better understand how programs can best design partner and stakeholder networks that support training programs and produce strong outcomes for participants. These goals are a major focus of the soon-to-be implemented Workforce Innovation and Opportunity Act of 2014, and of new initiatives focused on developing career pathways for disadvantaged populations and meeting employer demand for skilled workers.

Endnotes

[1] This report includes findings on 27 HPOG grantees. The five tribal HPOG grantees were evaluated separately.
[2] See note 1.
[3] Alan Werner, Robin Koralek, Pamela Loprest, Radha Roy, Deena Schwartz, Ann Collins, and Alison Stolte, *Descriptive Implementation and Outcome Study Report: National Implementation Evaluation of the Health Profession Opportunity Grants (HPOG) to Serve TANF Recipients and Other Low-Income Individuals* (OPRE Report # 2016-30) (Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services, 2016).
[4] Authority for these demonstrations is included in the *Patient Protection and Affordable Care Act*, Public Law 111-148, 124 Stat. 119, (2010), sect. 5507(a), "Demonstration Projects to Provide Low-Income Individuals with Opportunities for Education, Training, and Career Advancement to Address Health Professions Workforce Needs," adding sect. 2008(a) to the *Social Security Act*, 42 U.S.C. 1397g(a).
[5] See note 1.
[6] *Health Profession Opportunity Grants to Serve TANF Recipients and Other Low-Income Individuals, HHS-2010-ACF-OFA-FX-0126* (Washington, DC: Office of Family Assistance, U.S. Department of Health and Human Services, 2010), p. 2. http://www.acf.hhs.gov/grants/open/foa/view/HHS-2010-ACF-OFA-FX-0126.
[7] See Mary Claggett and Ray Uhalde, *The Promise of Career Pathways System Change: What Role Should Workforce Investment Systems Play? What Benefits Will Result?* (Boston: Jobs for the Future, 2012).
[8] *Health Profession Opportunity Grants to Serve TANF Recipients and Other Low-Income Individuals, HHS-2010-ACF-OFA-FX-0126*, pp. 6–7.
[9] Ibid.
[10] State WIBs, funded under the Workforce Investment Act of 1998 (WIA) through the state labor agency, provide direction and policy for workforce development within states. During the grant period, WIA was the legislation in effect. WIA governed the public workforce system and its structure, including state and local WIBs and One-Stop Career Centers. The Workforce Innovation and Opportunity Act of 2014 was passed and replaced WIA, but a similar structure will still be in place. The U.S. Department of Labor recently rebranded One-Stop Career Centers as American Job Centers. Local WIBs, usually non-profit entities receiving state workforce development funds, coordinate and oversee local workforce development services. In turn, local WIBs fund One-Stop Career Centers, which serve individuals seeking employment assistance and employers seeking skilled workers. For this report, all three are grouped together as state and local WIB partners because they all use WIA funds (among others) to provide workforce services.
[11] The state TANF agency oversees and sets policy for cash assistance to needy families and work activities for eligible parents.
[12] State apprenticeship agencies recruit and approve Registered Apprenticeship programs, which provide paid work-based learning in a particular occupation. In states without their own agencies, the HPOG FOA required the partnership of the federal apprenticeship office.
[13] *Health Profession Opportunity Grants to Serve TANF Recipients and Other Low-Income Individuals, HHS-2010-ACF-OFA-FX-0126*, pp. 6–7.
[14] Werner et al., *Descriptive Implementation and Outcome Study Report* also reports on the roles provided by partners in HPOG programs, based on the perspectives of grantees and program operators. This report provides the perspective of partners and stakeholders on these activities.
[15] See Erin McDonald, Lauren Eyster, Demetra Nightingale, and Randall R. Bovbjerg, *Literature Review: Analyzing Implementation and Systems Change—Implications for Evaluating HPOG* (OPRE Report # 2013-25). (Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services, 2013). http://www.acf.hhs.gov/sites/default/files/opre/hpog_implementation_analysis_lit_review_final_10312013_ver2.pdf.
[16] The Systems Change Analysis does not assess whether network characteristics or collaborative performance were associated with better participant outcomes. This topic is an option for future study.
[17] See Appendix B for more detail on analysis by network feature.
[18] Three hundred eight employers were fielded a survey, and 146 responses were the basis for analysis. See Appendix B for further detail.

[19] See Appendix A for descriptions of the HPOG National Implementation Evaluation and the HPOG Impact study. Based on data from the Stakeholder/Network survey and other sources, we have no reason to believe that the 14 programs with no site visit data differ systematically from the 35 programs with that data.
[20] *Health Profession Opportunity Grants to Serve TANF Recipients and Other Low-Income Individuals, HHS-2010-ACF-OFA-FX-0126* (Washington, DC: Office of Family Assistance, U.S. Department of Health and Human Services, 2010), pp. 6–7. http://www.acf.hhs.gov/grants/open/foa/view/HHS-2010-ACF-OFA-FX-0126.
[21] The numbers reported in this paragraph are based on a comprehensive review of all 917 partner and stakeholder organizations in the sampling frame (which includes nearly all partners and stakeholders).The tallies for networks include the program operators as well. Organizations were classified as workforce agencies if they were WIBs or One-Stops, and as government agencies if they were public sector (e.g. TANF or other public services, public housing authority, etc.), even though their offices may have been managed by a non-profit organization.
[22] *Source:* HPOG Stakeholder/Network survey, 2014, Q25. In this and other statements comparing groups of networks, differences reported have not been tested for statistical significance. Three primary features were used to group the networks, as described in detail in Appendix B: the type of program operator, whether the program was created for the HPOG grant or already existed, and the size of the network.
[23] Because local or county TANF providers were implementing the state agency policies, the study also examined their inclusion in HPOG networks in addition to state TANF agencies.
[24] See Shayne Spaulding and Ananda Martin-Caughey. *The Goals and Dimensions of Employer Engagement in Workforce Development Programs* (Washington, DC: Urban Institute, 2015).
[25] These report the results of our comprehensive review of all 917 partner and stakeholder organizations in the sampling frame. Note that 19 networks included healthcare employer partners or stakeholders that responded to our survey.
[26] *Source:* HPOG Stakeholder/Network survey, 2014, Q10.
[27] *Source:* HPOG Stakeholder/Network survey, 2014, Q10 and Q17.
[28] See note 14.
[29] One of the 49 program networks was not included in the descriptive analysis due to insufficient response rate.
[30] *Source:* HPOG Stakeholder/Network survey, 2014, Q14.
[31] *Source:* Ibid.
[32] *Source:* Ibid.
[33] Organizations were asked to rate their level of involvement in different activities on a scale from 1 ("not involved") to 5 ("highly involved"), and the analysis considered a rating of 4 or 5 to be highly involved.
[34] See HPOG logic model in Appendix F.
[35] The methods used in this network analysis follow previous research by Jennifer Yahner and Jeffrey A. Butts, *Agency Relations: Social Network Dynamics and the RWJF Reclaiming Futures Initiative (A Reclaiming Futures National Evaluation Report)* (Portland, OR: Reclaiming Futures National Program Office, Portland State University, 2007).
[36] Ibid.
[37] On the other hand, program operator power might decrease if some network members advise on program design in the early stages of the grant and decrease their interactions during implementation.
[38] Given the unprecedented application of these methods to job training programs and the lack of other initiatives for comparison, it is difficult to assess how much the increases matter to the success of the HPOG programs.
[39] The study considers the direction of change across time in each measure for each HPOG program, along with the network's performance relative to that of the average HPOG network of a given size, for each collaboration measure. These averages are adjusted for network size, response rate, and agreement rate. See Appendix D for definitions of these characteristics and further explanation of how average values were calculated.
[40] Organizations classified as business organizations included healthcare employers, staffing agencies, chambers of commerce, and other business organizations. The vast majority were healthcare employers.
[41] Real health expenditure data come from Table 23 of the Centers for Medicare and Medicaid Services National Health Expenditure Accounts. Real gross domestic product data come from the U.S. Bureau of Economic Analysis.
[42] The jobs for which HPOG programs generally train are included in the Bureau of Labor Statistics category "production and nonsupervisory workers." This category includes occupations such as nursing aides, home health aides, medical assistants, and medical coders and billing workers, which are on the first steps of healthcare career pathways.

[43] Job openings are forward-looking indicators; they suggest that firms expect strong future growth. Job openings are more directly relevant to the prospects of new participants entering a labor market who are concerned with the number of available jobs, not the stock of already filled positions. However, data on openings are only available for the health sector as a whole and therefore include supervisory and higher-education–level-occupations that are not relevant for HPOG programs.
[44] Job openings in a sector can decline even as total sector employment increases, as workers in existing jobs are less likely to leave those jobs (i.e., lower turnover) as a result of the recession.
[45] Based on data from local area unemployment statistics (LAUS) available at http://www.bls.gov/lau.
[46] There are only 29 distinct HPOG local labor markets because some programs occupied the same local labor market. The main data source is the Occupational Employment Statistics (OES) of the Bureau of Labor Statistics.
[47] This approach follows Katz and Murphy (1992) and is implicit in any standard model of the labor market. OES data are not available for all occupations in all markets, thus total number of markets presented varies across different occupations. See Lawrence F. Katz and Kevin M. Murphy, "Changes in Relative Wages, 1963–1987: Supply and Demand Factors," *Quarterly Journal of Economics* 107, no. 1 (1992): 35–78.
[48] The sample of surveyed employers was not intended to be representative of all healthcare employers in areas operating HPOG programs. The employer sample comprised employers that HPOG program operators identified as having hired or been asked to hire HPOG participants, and thus are more likely to report hiring participants than local healthcare employers as a whole. To the extent that program operators selectively identified employers they thought would provide a positive view of the HPOG Program, the reported survey items on employers' opinions of HPOG and its participants may also be biased upward.
[49] Nathan Sick, Thomas Callan, Pamela Loprest, and Alan Werner, *Health Profession Opportunity Grants: Year Four Annual Report (2013–2014)* (OPRE Report # 2015-64) (Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services; Abt Associates; and Urban Institute, 2015).
[50] Employers were asked to rank programs' referrals on items relative to the average worker on a scale of 1 to 5, where 3 refers to same as average and 5 to better than average.
[51] María Enchautegui, "Nonstandard Work Schedules and the Well-Being of Low-Income Families," Low-Income Working Families Paper 26 (Washington, DC: Urban Institute, 2013).
[52] Theresa Anderson, Pamela Loprest, Teresa Derrick-Mills, Lauren Eyster, Elaine Morley, and Alan Werner, *Health Profession Opportunity Grants: Year Two Annual Report (2011–2012)* (OPRE Report # 2014-03) (Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services, 2014). http://www.acf.hhs.gov/sites/default/files/opre/hpog_second_annual_report.pdf.
[53] See Kenneth A. Couch and Robert Fairlie, "Last Hired, First Fired? Black-White Unemployment and the Business Cycle," *Demography* 47, no. 1 (2010): 227–47; and Harry J. Holzer, *Employer Demand for Welfare Recipients and the Business Cycle: Evidence from Recent Employer Surveys*, Working Paper 57 (Chicago: Northwestern University and University of Chicago Joint Center for Poverty Research, 1998).
[54] See HPOG logic model in Appendix F.
[55] See Lauren Eyster, Teresa Derrick-Mills, John Trutko, Jessica Compton, Alexandra Stanczyk, and Demetra Smith Nightingale, *Evaluation of the Community-Based Job Training Grant (CBJTG) Program: Final Report* (Washington, DC: Urban Institute, Report prepared for the U.S. Department of Labor, Employment and Training Administration, 2013); and Lauren Eyster, Demetra Smith Nightingale, Burt Barnow, Carolyn O'Brien, John Trutko, and Daniel Kuehn, *Implementation and Early Training Outcomes of the High Growth Job Training Initiative: Final Report* (Washington, DC: Urban Institute, Report prepared for the U.S. Department of Labor, Employment and Training Administration, 2011).
[56] For an in-depth study on the use of performance measurement by HPOG grantees, see Nathan Dietz, Elaine Morley, Harry P. Hatry, and Nathan Sick, *Using Performance Information to Manage Health Professions Training Programs* (OPRE Report # 2015-113) (Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services, 2015). http://www.acf.hhs.gov/programs/ofa/resource/using-performance-information-to-manage-health-professions-training-programs.
[57] The effectiveness of collaboration scale is based on the HPOG Stakeholder/Network survey, 2014, Q27 and Q30. Details of this and other scales are described in Appendix C. All scales reported in this section, summarized in Exhibit 6.1, are from 1 to 5. For all but three (challenges to information sharing, reported in section 6.1; challenges

to HPOG programs' success, reported in section 6.5; and challenges to sustainability, reported in section 6.7), a higher score indicates better performance.

[58] The challenges to information sharing scale is based on the HPOG Stakeholder/Network survey, 2014, Q27.

[59] The current organizational support for HPOG scale is based on the HPOG Stakeholder/Network survey, 2014, Q28.

[60] *Source:* HPOG Stakeholder/Network survey, 2014, Q28.

[61] The improvement in organizational support for HPOG scale is based on the HPOG Stakeholder/Network survey, 2014, Q29.

[62] The achieving desired outcomes scale is based on the HPOG Stakeholder/Network survey, 2014, Q31.

[63] The organizational satisfaction with HPOG scale is based on the HPOG Stakeholder/Network survey, 2014, Q32.

[64] The organizational satisfaction with HPOG components scale is based on the HPOG Stakeholder/Network survey, 2014, Q32.

[65] The challenges to HPOG programs' success scale is based on the HPOG Stakeholder/Network survey, 2014, Q35.

[66] See Claggett and Uhalde, *The Promise of Career Pathways System Change* and McDonald et al., *Literature Review: Analyzing Implementation and Systems Change—Implications for Evaluating HPOG*.

[67] The perceptions of sustainability scale is based on the HPOG Stakeholder/Network survey, 2014, Q33.

[68] The challenges to sustainability scale is based on the HPOG Stakeholder/Network survey, 2014, Q36.

[69] See McDonald et al., *Literature Review: Analyzing Implementation and Systems Change—Implications for Evaluating HPOG*.

[70] David J. Fein, *Career Pathways as a Framework for Program Design and Evaluation: A Working Paper from the Innovative Strategies for Increasing Self-Sufficiency (ISIS) Project* (OPRE Report # 2012-30) (Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services, 2012).

[71] Lisa Sorricone, *Systems Change in the National Fund for Workforce Solutions* (Boston, MA: National Fund for Workforce Solutions, 2015). http://www.jff.org/publications/systems-change-national-fund-workforce-solutions; Beth Siegel, Devon Winey, and Adam Kornetsky, "Pathways to Systems Change: The Design of Multisite, Cross-Sector Initiatives," (Working Paper 2015-03) (San Francisco, CA: Federal Reserve Bank of San Francisco, 2015). http://www.frbsf.org/community-development/files/wp2015-03.pdf