Strategies to Increase Health System Referrals to Chronic Disease Prevention and Management Programs

Provider Education Strategies

Provider Education strategies include:

- **Formal Training or Professional Development**
- **Educational Materials**
- **Audit and Feedback**
- **Academic Detailing**
- **Individual Consultation**

Refer to Key Takeaways for more information

CDC U.S. CENTERS FOR DISEASE CONTROL AND PREVENTION

National Center for Chronic Disease Prevention and Health Promotion
Division of Diabetes Translation

Purpose

This resource describes Provider Education strategies that can be used to increase health system referrals to chronic disease prevention and management programs or preventive services. Health system referrals are a process by which a health care provider recommends that a patient receives a specific service or attends a specific program delivered by another entity (clinical or community based).

PROVIDER EDUCATION includes specific strategies with a primary focus on health care staff education or training, such as dissemination of referral guidelines or provider audit and feedback.

Who Is This For?

This resource is for organizations working to increase health system referrals to evidence-based chronic disease prevention and management programs and preventive services, such as the National Diabetes Prevention Program (National DPP) and diabetes self-management education and support (DSMES) services.

These organizations could include:

- State and local health departments
- Chronic disease programs
- Community-based organizations and health centers
- Health systems

How to Use This Document

This resource:

- Contains specific strategies within the Provider Education strategy type.
- Describes strategies that show promising or emerging evidence for effectiveness if they represent potentially valuable approaches for implementation.
- Links to additional documents that provide more details on the other specific strategy types, including strategy spotlights and implementation considerations.
- Categorizes the evidence for whether the specific strategy increased referrals. Categories include:

***Strong** Evidence*	***Promising** Evidence*	***Emerging** Evidence*
There was enough high-quality evidence to conclude that the strategies in this category increased health system referrals.	There was enough evidence to conclude that these strategies increased health system referrals despite potential weaknesses in the evidence.	There was not enough evidence to conclude that these strategies increased health system referrals. Programs intending to use these strategies could evaluate their effectiveness within their respective health systems.

***Strong** Evidence*

Formal Training or Professional Development

This strategy involves health care providers attending workshops or other trainings to learn about when and how to make referrals, build their knowledge and skills, or learn how to incorporate formal referrals into their clinical practice.

Strategy Spotlight #1

Provider Training Intervention to Improve Colorectal Cancer Screening

PURPOSE	To evaluate the effectiveness of a provider training intervention designed to increase colorectal cancer (CRC) screening rates in county health centers
PATIENT POPULATION	Patients eligible for CRC screening (n = 2,224)
PARTICIPATING STAFF	Health center physicians and other primary care staff (n = 31 intervention and n = 32 control)
INTERVENTION	A 1-hour interactive presentation delivered to physicians in small practice groups. The presentation covered theories of health behavior to explain and address common barriers to CRC screening.
PROGRAM OR SERVICE REFERRED TO	CRC screening
SETTING	County health centers across Long Island, New York, USA
INTERVENTION LENGTH	1 year

IMPACT ON REFERRALS

The intervention led to an increase in CRC screening referrals.

16%

increase in CRC screening referrals, test dispensing, and completion rates among intervention health centers compared to a 4% increase among control health centers from baseline to 1-year follow-up (odds ratio = 2.25; 95% confidence interval [CI] = 1.67–3.04; $p < 0.001$).

Less likely

There was a significant reduction in intervention health center patients reporting a lack of physician recommendation as a reason for not being screened (41% vs. 21%, $p = 0.04$) but not in patients in the control health centers (22% vs. 26%, $p = 0.67$).

***Strong** Evidence*

Strategy Spotlight #2

[Training and Support Program to Improve Dementia Diagnosis and Management in Primary Care]

PURPOSE	To evaluate whether a community-based dementia training and support program could improve clinical competency in dementia care and increase referrals to local dementia care services
PATIENT POPULATION	Patients at risk for Alzheimer's disease or other dementias
PARTICIPATING STAFF	Physicians (family practice, internal medicine) (n = 29) and affiliated staff (nurse practitioners, nurses, medical assistants, and community service providers) (n = 24)
INTERVENTION	A 1-day interactive training program on dementia care for physicians and staff, followed by ongoing support from community consultants and e-newsletters. The program included sessions on evidence-based dementia screening, differential diagnosis, clinical assessment, pharmacological treatment, management of behavioral symptoms, caregiving, and community resources. Participants also received relevant resources and follow-up e-newsletters every month with updates on dementia research and reminders on community resources.
PROGRAM OR SERVICE REFERRED TO	Dementia care
SETTING	Primary care practices in North Carolina, USA
INTERVENTION LENGTH	2 years

IMPACT ON REFERRALS

The intervention led to an increase in referrals to dementia support services.

160

physician-initiated referrals to the dementia care support program over a 2-year period, compared to almost none before the intervention.

Confidence

After the training program, physicians felt significantly more confident in their ability to refer patients to dementia community resources ($p = 0.001$).

***Strong** Evidence*

Educational Materials

This strategy involves health care providers receiving marketing materials, guidance documents, resources, tools, and templates to facilitate referrals.

Strategy Spotlight #1

[Educational Materials to Raise Awareness and Referrals to Diabetes Dietetic Clinics]

PURPOSE	To assess an action plan that included targeted educational materials to increase provider awareness and referral rates to community-based diabetes dietetic clinics
PATIENT POPULATION	Patients with type 1 or type 2 diabetes
PARTICIPATING STAFF	General practitioners and practice staff and a hospital-based dietitian in community-based diabetes dietetic clinics (n = 63)
INTERVENTION	This action plan included a poster displaying information about community-based diabetes dietetic clinics.
PROGRAM OR SERVICE REFERRED TO	Diabetes nutrition education delivered by registered dietitians
SETTING	Three community-based health centers serving 20 general practices in Greenock, Gourock, and Port Glasgow, United Kingdom
INTERVENTION LENGTH	1 year

IMPACT ON REFERRALS

The intervention led to an increase in referrals to diabetes nutrition education clinics.

76%

of general practitioners referred patients with diabetes to the community-based diabetes dietetic clinics post-intervention, compared to 56% at baseline ($p < 0.05$).

94%

of general practitioners were aware of the diabetes educational services post-intervention, compared to 58% at baseline ($p < 0.001$).

***Strong** Evidence*

Strategy Spotlight #2

[Educational Strategies to Improve Adherence to Dementia Guidelines]

PURPOSE	To evaluate whether a multifaceted educational strategy increases neurologists' adherence to dementia care recommendations, including referrals to community resources
PATIENT POPULATION	Adult patients with dementia
PARTICIPATING STAFF	Neurologists (n = 417)
INTERVENTION	This educational program comprised a mailed American Academy of Neurology continuing medical education course, a resource manual with tools to help implement guidelines, an invitation to an interactive seminar led by local opinion leaders, and five reminder mailings.
PROGRAM OR SERVICE REFERRED TO	Dementia care
SETTING	Six urban regions in New York, USA
INTERVENTION LENGTH	6 months

IMPACT ON REFERRALS

The intervention group was more likely than the control group to refer dementia patients and their families to dementia care programs.

2x

greater chance neurologists in the intervention group would refer dementia patients and their families to the Alzheimer's Association dementia program compared to the control group (AOR: 2.7, 95% CI = 1.5–4.7). The referral rate was 44% in the intervention group and 23% in the control group.

6x

greater chance neurologists in the intervention group would refer dementia patients and their families to the Safe Return Program compared to the control group (AOR: 9.7, 95% CI = 3.5–33.2). The referral rate was 18% in the intervention group and 3% in the control group.

***Strong** Evidence*

Audit and Feedback

This strategy involves a third party who reviews provider referral behaviors, delivers feedback on referral progress, and determines whether the provider is making appropriate referrals.

Strategy Spotlight #1

Management of Behavioral Change in Patients with a Diagnosis of Dementia

PURPOSE	To evaluate the impact of feedback on referral decisions of general practitioners for patients presenting with a dementia diagnosis
PATIENT POPULATION	Adult patients with dementia
PARTICIPATING STAFF	General practitioners (n = 45)
INTERVENTION	General practitioners viewed and "managed" six video vignettes of patients with dementia and subsequently received written feedback on their management practices.
PROGRAM OR SERVICE REFERRED TO	Dementia care
SETTING	Primary care practices in Australia
INTERVENTION LENGTH	< 1 month

IMPACT ON REFERRALS

The intervention increased the likelihood of a referral to support services or agencies for patients with dementia compared to baseline.

2.5x higher odds of general practitioners referring dementia patients to support services or agencies after the intervention compared to before the intervention (95% CI = 1.53–4.14; $p < 0.001$).

***Strong** Evidence*

Strategy Spotlight #2

Practice-Based Referrals to a Tobacco Cessation Quitline

PURPOSE	To assess the impact of comparative feedback versus general reminders on clinician referrals to a tobacco cessation quitline
PATIENT POPULATION	Adult smokers
PARTICIPATING STAFF	Physicians, nurse practitioners, and physician assistants (n = 308)
INTERVENTION	Six quarterly comparative feedback reports documenting performance on quitline referral. Feedback reports included two graphs that displayed individual clinician performance against quarterly benchmarks.
PROGRAM OR SERVICE REFERRED TO	Tobacco cessation quitline
SETTING	87 primary care practices, including family medicine, internal medicine, and obstetrics-gynecology in Michigan, USA
INTERVENTION LENGTH	1.5 years

IMPACT ON REFERRALS

Clinicians in intervention practices made more referrals to quitline services compared to clinicians in control practices.

264 more clinician referrals to quitline services among intervention practices compared to clinicians in control practices (n = 484 referrals vs. n = 220 referrals, $p < 0.001$).

Academic Detailing

This strategy involves health care providers receiving university or noncommercial educational outreach.

Strategy Spotlight

[Academic Detailing for Breast Cancer Screening in Underserved Communities]

PURPOSE	To assess the effectiveness of an enhanced, multicomponent academic detailing intervention to increase primary care physicians' recommendations for breast cancer screening
PATIENT POPULATION	Primarily Black and Hispanic/Latina adult women
PARTICIPATING STAFF	Primary care physicians, nurses, and office staff (n = 74)
INTERVENTION	Health educators delivered self-learning packets during four academic detailing visits with primary care physicians. The packets highlighted American Cancer Society breast cancer screening recommendations, supplemented by six dinner seminars, newsletters, and office-based prevention education materials.
PROGRAM OR SERVICE REFERRED TO	Breast cancer screening
SETTING	Community-based primary care practices in the South Bronx neighborhood, New York City, New York, USA
INTERVENTION LENGTH	2 years

IMPACT ON REFERRALS

The intervention significantly increased physician referrals for clinical breast examination (CBE) relative to the comparison group.

22%

increase in CBE recommendation rates in the intervention group at follow-up compared to baseline for women ages 40–49 ($p = 0.002$).

14%

increase in CBE recommendation rates in the intervention group (79% vs. 93%, $n = 94$) at follow-up compared to baseline for women aged 50 or older (99% vs. 93%, $n = 74$) ($p \leq .001$).

Individual Consultation

This strategy involves individual consultations with health care providers to review strategies, tools, guidelines, and recommendations aimed at increasing referrals to programs or preventive services.

Strategy Spotlight

[Educational Programs to Improve the Quality of COPD Care]

PURPOSE	To evaluate whether an educational program would improve adherence to chronic obstructive pulmonary disease (COPD) guidelines, especially appropriate referrals to pulmonary rehabilitation
PATIENT POPULATION	COPD patients 55 and older (n = 2,394)
PARTICIPATING STAFF	General practitioners (n = 154), nurses, laboratory technicians, and administrative staff
INTERVENTION	This educational program included an individual meeting with a consultant focused on international guidelines for COPD care, a regional meeting with about 30 general practitioners and their staff focused on a discussion of international guidelines with experts, and a symposium for all participating general practitioners and their staff.
PROGRAM OR SERVICE REFERRED TO	Pulmonary rehabilitation
SETTING	General practices in Denmark
INTERVENTION LENGTH	1 year

IMPACT ON REFERRALS

The intervention significantly improved the rate of referrals to pulmonary rehabilitation for patients with moderate or severe COPD.

20% of eligible patients with moderate or severe COPD were referred to pulmonary rehabilitation services compared to 17% at baseline ($p < 0.01$).

Implementation Considerations for Provider Education Strategies

Overall, Formal Training or Professional Development, Educational Materials, and Audit and Feedback strategies demonstrate increases in referrals.

- **Implementing multiple Provider Education strategies may be effective,** as many studies included more than one strategy. For example, Formal Training and Professional Development strategies were often accompanied by Individual Consultation or Educational Materials.
- **Primary care settings** were most common for Provider Education strategies. Other settings may work as well, but less is known about them.
- **Physicians were most often the referring provider** for Provider Education strategies. Other health care staff may be able to refer patients, but less is known about these situations.
- **Consider tailoring the implementation of Provider Education strategies** to the specific implementation setting, referral practices, and referring providers.
- **Evaluate evidence of Provider Education strategies for increasing referrals in specific populations.** Most studies did not report on patient characteristics; therefore, the effectiveness of Provider Education strategies for increasing referrals for specific populations is not known.
- **Consider additional opportunities to evaluate Individual Consultation and Academic Detailing,** as less is known a bout whether they will increase referrals.

Related Resources

For a high-level overview of all the referral strategies, refer to *Strategies to Increase Health System Referrals to Chronic Disease Prevention and Management Programs: Key Takeaways from a Systematic Review*.

For detailed findings on all the referral strategies from a systematic review of the literature, refer to *Strategies to Increase Health System Referrals to Chronic Disease Prevention and Management Programs*.

References

Learn more about the study characteristics of Provider Education strategy references.

NOTE

* References with an asterisk indicate studies that were included in determinations of whether specific strategies had evidence of increasing health system referrals. Noncomparative studies were excluded from the effectiveness analysis.

Formal Training or Professional Development

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