

# ***Excellence in Prevention*** – descriptions of the prevention programs and strategies with the greatest evidence of success

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## **Name of Program/Strategy: Reward & Reminder**

### **Report Contents**

1. Overview and description
  2. Implementation considerations (if available)
  3. Descriptive information
  4. Outcomes
  5. Cost effectiveness report (Washington State Institute of Public Policy – if available)
  6. Washington State results (from Performance Based Prevention System (PBPS) – if available)
  7. Who is using this program/strategy
  8. Study populations
  9. Quality of studies
  10. Readiness for Dissemination
  11. Costs (if available)
  12. Contacts for more information
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### **1. Overview and description**

Reward & Reminder, a population-level intervention targeting whole communities, counties, or States, is designed to promote the community norm of not selling tobacco to minors. By using rapid and public rewards and recognition for clerks and retailers/outlets that do not sell tobacco to minors, Reward & Reminder aims to reduce illegal sales of tobacco, perceived access to tobacco, and tobacco use prevalence rates. The intervention emerged from a contextual analysis of factors affecting the behavior of store clerks, retailers, and the tobacco industry overall. At the core of the program is the use of "mystery shoppers," teams of youth who--with parental permission and under the supervision of adults--enter stores and try to buy tobacco products. They provide immediate recognition and rewards, such as gift certificates, to clerks who do the "right thing" and give reminders to those who do not. The results of the mystery shopper visits are entered into a Web-based system where they are made publicly visible, and the results are communicated to local media to promote the positive norm. The mystery shopper visits are scheduled across the year to maximize the immediate and sustained impact.

### **2. Implementation considerations (if available)**

Using on-site or Web-based training, community adults who pass background checks can be trained as supervisors in about 3 hours, and approved youth can be trained as shoppers in about an hour. Quality control is maintained using a Web-based data entry system that facilitates data collection and guides implementation and fidelity activities.

# ***Excellence in Prevention*** – descriptions of the prevention programs and strategies with the greatest evidence of success

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## **3. Descriptive information**

<b>Areas of Interest</b>	Substance abuse prevention
<b>Outcomes</b>	1: Illegal sales of tobacco to minors 2: Illegal purchase of tobacco by minors 3: Tobacco use by minors 4: Social sources of tobacco for minors
<b>Outcome Categories</b>	Environmental change Social functioning Tobacco
<b>Ages</b>	13-17 (Adolescent) 18-25 (Young adult) 26-55 (Adult) 55+ (Older adult)
<b>Gender</b>	Data were not reported/available.
<b>Races/Ethnicities</b>	American Indian or Alaska Native Asian Black or African American Hispanic or Latino Race/ethnicity unspecified
<b>Settings</b>	Other community settings
<b>Geographic Locations</b>	Urban Suburban Rural and/or frontier
<b>Implementation History</b>	Since Reward & Reminder was first implemented in 1989, it has been used across three States (Kansas, Wisconsin, and Wyoming) and in multiple communities in Oregon, reaching an estimated 9 million community members. Four studies of the program have been conducted and described in published articles.
<b>NIH Funding/CER Studies</b>	Partially/fully funded by National Institutes of Health: Yes Evaluated in comparative effectiveness research studies: No
<b>Adaptations</b>	No population- or culture-specific adaptations were identified by the applicant.
<b>Adverse Effects</b>	No adverse effects, concerns, or unintended consequences were identified by the applicant.
<b>IOM Prevention Categories</b>	Universal

# ***Excellence in Prevention*** – descriptions of the prevention programs and strategies with the greatest evidence of success

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## **4. Outcomes**

### **Outcome 1: Illegal sales of tobacco to minors**

<b>Description of Measures</b>	<p>Illegal sales of tobacco to minors were assessed by:</p> <ul style="list-style-type: none"> <li>• The percentage of tobacco outlets in the community that was willing to sell tobacco to young "mystery shoppers," pairs of youth who (with permission from their parents and under supervision by adults) entered stores and attempted to buy tobacco products.</li> <li>• Synar surveys, administered annually by States under the supervision of SAMHSA's Center for Substance Abuse Prevention. These surveys document direct attempts to buy tobacco by underage youth. The percentage of outlets willing to sell tobacco to young people over time was measured.</li> </ul>
<b>Key Findings</b>	<p>In one study, the proportion of outlets that were willing to sell tobacco to minors was assessed in two communities once every 3 weeks prior to the intervention. After three baseline assessments, Reward &amp; Reminder was introduced into both communities. Following the intervention phase, seven more assessments were conducted, one every 3 weeks. Across the two communities, the average percentage of outlets willing to sell tobacco to minors across baseline assessments was 57%. This rate declined to 22% across post-intervention assessments, representing a 62% reduction in sales (p= .018).</p> <p>In another study, the proportion of outlets that were willing to sell tobacco to minors was assessed across several communities in each of two States. The two States reported that outlets were willing to sell tobacco to minors an average of 43% and 35% of the time across baseline assessments. After implementation of Reward &amp; Reminder, these rates declined to an average of 8.1% and 10.8%, respectively, across post-intervention assessments (p values &lt; .01).</p>
<b>Studies Measuring Outcome</b>	Study 1, Study 2
<b>Study Designs</b>	Quasi-experimental
<b>Quality of Research Rating</b>	3.3 (0.0-4.0 scale)

### **Outcome 2: Illegal purchase of tobacco by minors**

<b>Description of Measures</b>	<p>Illegal purchase of tobacco by minors was measured using the Youth Risk Behavior Survey (YRBS). Youth reported on their direct retail or vending machine purchases of tobacco during the past 30 days.</p>
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## ***Excellence in Prevention*** – descriptions of the prevention programs and strategies with the greatest evidence of success

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<b>Key Findings</b>	The proportion of minors illegally purchasing tobacco was assessed across several communities in each of two States. Across baseline assessments, an average of 13.3% and 11.4% of youth from the two States reported buying tobacco from retailers or vending machines. After implementation of Reward & Reminder, these rates decreased to an average of 6.3% and 6.2%, respectively, across post-intervention assessments (p values < .01).
<b>Studies Measuring Outcome</b>	Study 2
<b>Study Designs</b>	Quasi-experimental
<b>Quality of Research Rating</b>	3.3 (0.0-4.0 scale)

### **Outcome 3: Tobacco use by minors**

<b>Description of Measures</b>	Tobacco use by minors was measured using the YRBS. Youth reported on the frequency of their tobacco use during the past 30 days.
<b>Key Findings</b>	The proportion of minors using tobacco was assessed across several communities in each of two States. Across baseline assessments, an average of 37.1% and 33.3% of youth from the two States reported smoking in the past 30 days. After implementation of Reward & Reminder, these rates decreased to an average of 24.7% and 23.0%, respectively, across post-intervention assessments (p values < .01). Similar results were found for the percentage reporting daily smoking in the past month, which decreased from an average of 14.5% and 13.3% to an average of 9.2% and 7.6%, respectively (p values < .01).
<b>Studies Measuring Outcome</b>	Study 2
<b>Study Designs</b>	Quasi-experimental
<b>Quality of Research Rating</b>	3.2 (0.0-4.0 scale)

### **Outcome 4: Social sources of tobacco for minors**

<b>Description of Measures</b>	Social sources of tobacco for minors were assessed using the YRBS. Youth reported on their access to cigarettes from social sources (i.e., "gave someone else money to purchase," "borrowed them from someone else," "person 18+ gave them to me") or from stealing from a store or family member.
<b>Key Findings</b>	The proportion of minors obtaining tobacco from social sources was assessed across several communities in each of two States. Across baseline assessments, an average of 21.8% and 20.3% of youth

# **Excellence in Prevention** – descriptions of the prevention programs and strategies with the greatest evidence of success

	from the two States reported obtaining tobacco from social sources. After implementation of Reward & Reminder, these rates decreased to an average of 14.9% and 14.1%, respectively, across post-intervention assessments (p values < .01). Similar results were found for the percentage reporting stealing tobacco from a store or family member, which decreased from an average of 3.6% and 2.5% to an average of 1.1% and 0.9%, respectively (p values < .01).
<b>Studies Measuring Outcome</b>	Study 2
<b>Study Designs</b>	Quasi-experimental
<b>Quality of Research Rating</b>	3.2 (0.0-4.0 scale)

5. **Cost effectiveness report (Washington State Institute of Public Policy – if available)**
6. **Washington State results (from Performance Based Prevention System (PBPS) – if available)**
7. **Who is using this program/strategy**

Washington Counties	Oregon Counties

## 8. Study populations

The studies reviewed for this intervention included the following populations, as reported by the study authors.

Study	Age	Gender	Race/Ethnicity
<b>Study 1</b>	18-25 (Young adult) 26-55 (Adult) 55+ (Older adult)	Data not reported/available	65% Race/ethnicity unspecified 19% American Indian or Alaska Native 9% Hispanic or Latino 5% Asian 2% Black or African American
<b>Study 2</b>	13-17 (Adolescent) 18-25 (Young adult) 26-55 (Adult) 55+ (Older adult)	Data not reported/available	Data not reported/available

# ***Excellence in Prevention*** – descriptions of the prevention programs and strategies with the greatest evidence of success

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## **9. Quality of studies**

The documents below were reviewed for Quality of Research. Other materials may be available. For more information, contact the developer(s).

### **Study 1**

Biglan, A., Ary, D., Koehn, V., Levings, D., Smith, S., Wright, Z., et al. (1996). Mobilizing positive reinforcement in communities to reduce youth access to tobacco. *American Journal of Community Psychology*, 24(5), 625-638.

Biglan, A., Henderson, J., Humphrey, D., Yasui, M., Whisman, R., Black, C., et al. (1995). Mobilizing positive reinforcement to reduce youth access to tobacco. *Tobacco Control*, 4, 42-48.

### **Study 2**

Embry, D. D., Biglan, T., Hankins, M., Dahl, M. J., & Galloway, D. (2008). Evaluation Reward and Reminder visits to reduce tobacco sales to, and tobacco use by, young people: A multiple-baseline across two States. Manuscript in preparation.

### **Supplementary Materials**

Lewis, R. K., Paine-Andrews, A., Fawcett, S. B., Francisco, V. T., Richter, K. P., Copple, B., et al. (1996). Evaluating the effects of a community coalition's efforts to reduce illegal sales of alcohol and tobacco products to minors. *Journal of Community Health*, 21(6), 429-436.

### **Quality of Research Ratings by Criteria (0.0-4.0 scale)**

External reviewers independently evaluate the Quality of Research for an intervention's reported results using six criteria:

1. Reliability of measures
2. Validity of measures
3. Intervention fidelity
4. Missing data and attrition
5. Potential confounding variables
6. Appropriateness of analysis

For more information about these criteria and the meaning of the ratings, see [Quality of Research](#).

<b>Outcome</b>	Reliability of Measures	Validity of Measures	Fidelity	Missing Data/Attrition	Confounding Variables	Data Analysis	Overall Rating
<b>1: Illegal sales of tobacco to minors</b>	3.1	3.6	3.2	3.8	2.5	3.4	3.3
<b>2: Illegal purchase of tobacco by minors</b>	3.3	3.3	3.3	3.8	2.5	3.5	3.3

# ***Excellence in Prevention*** – descriptions of the prevention programs and strategies with the greatest evidence of success

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<b>3: Tobacco use by minors</b>	3.3	3.3	3.3	3.8	2.6	3.3	3.2
<b>4: Social sources of tobacco for minors</b>	3.3	3.3	3.3	3.8	2.5	3.3	3.2

## **Study Strengths**

The specific procedures used to increase the reliability and validity of the primary outcome measure (e.g., use of different pairs of youth assessors during the data collection process, inter-assessor reliability checks) were well documented. Inter-assessor reliability was reported to be 100%. Manuals were developed to guide implementation, and exposure to the specific intervention components was closely tracked over the intervention period, demonstrating intervention fidelity across the studies reviewed and supporting conclusions about the intervention's effects. One study used data from a Federal system that is considered to be valid and reliable (i.e., the Synar survey) to measure the impact of the environmental policy change.

## **Study Weaknesses**

In both studies, use of the time series analysis limited the ability to control for some confounding variables. Prevalence data from the YRBS were not collected as frequently as would have been ideal for the study design (YRBS data were collected every 2 years, whereas illegal tobacco sales data were collected annually), weakening causal inference for effects on prevalence.

## **10. Readiness for Dissemination**

The documents below were reviewed for Readiness for Dissemination. Other materials may be available. For more information, contact the developer(s).

### **Dissemination Materials**

Embry, D. D., Biglan, A., Hankins, M., Dahl, M. J., & Galloway, D. (2009). Effectiveness trial using Reward & Reminder visits to reduce tobacco sales to, and tobacco use by, young people: A multiple-baseline across two States. Manuscript in preparation.

PAXIS Institute. (2003). PAXForms information management system manual. Tucson, AZ.

PAXIS Institute. (2005). Reward & Reminder: Training community youth and adults to make a difference in tobacco use prevention. Tucson, AZ: Author.

PAXIS Institute. (n.d.). Dissemination protocols for Reward & Reminder. Tucson, AZ: Author. PAXIS Institute online training videos (Licking County and Prevention First)

Program Web site, <http://www.rewardandreminder.com>

Sample customized materials from Kansas implementation:

- Checklist for Implementation
- Consultation, training, and technical assistance contract information
- Guerilla Marketing Communication Tips

# ***Excellence in Prevention*** – descriptions of the prevention programs and strategies with the greatest evidence of success

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- Kansas Media Plan
- Memo about Synar results estimates
- Memo for improving Synar outcomes
- PAXIS Institute. (n.d.). Kansas Synar report. Tucson, AZ: Author.
- PowerPoint training slides
- R&R Kansas Action Plan
- Training scripts and discussion points
- TV Recommendation for Kansas Media Campaign for "It's Everybody's Business" Sample customized materials from Wisconsin implementation:
- Kick-off press release draft
- PAXIS Institute. (2004, March). Wisconsin Synar Plan. Tucson, AZ: Author.
- Sample ads for Wisconsin Wins
- Thank You, Wisconsin [flyer]
- Wisconsin Plan print flyer
- WI Wins 2-page flyer
- WI Wins interactive CD-ROM
- WI Wins letter
- WI Wins thank-you card
- Youth Manual

## **Readiness for Dissemination Ratings by Criteria (0.0-4.0 scale)**

External reviewers independently evaluate the intervention's Readiness for Dissemination using three criteria:

1. Availability of implementation materials
2. Availability of training and support resources
3. Availability of quality assurance procedures

For more information about these criteria and the meaning of the ratings, see Readiness for Dissemination.

<b>Implementation Materials</b>	<b>Training and Support Resources</b>	<b>Quality Assurance Procedures</b>	<b>Overall Rating</b>
3.0	2.4	3.1	2.8

# ***Excellence in Prevention*** – descriptions of the prevention programs and strategies with the greatest evidence of success

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## **Dissemination Strengths**

The examples provided of site-specific materials created for implementation are well developed and include electronic versions for easy duplication. Extensive consultation is provided to new implementation sites for the development and use of site-specific implementation materials and use of quality assurance tools. Training materials provide a clear outline of the skills needed for implementation. An information system developed specifically for this program is used for capturing information on implementation activities to facilitate quality assurance.

## **Dissemination Weaknesses**

Potential implementation sites can request developer consultation for a fee, but apart from this service, sites are provided with little information about how to prepare for implementation, requirements for staffing, the types of organizations best suited for implementation, scheduling of program activities, or adaptations required for large-scale (i.e., statewide) versus small-scale (i.e., local community) implementation. While both training and support are available, there is no uniform system for teaching new sites how to implement this program. Little information is provided on how implementers should use quality assurance data to improve program delivery.

## **11. Costs (if available)**

The information below was provided by the developer and may have changed since the time of review. For detailed information on implementation costs (e.g., staffing, space, equipment, materials shipping and handling), contact the developer.

<b>Item Description</b>	<b>Cost</b>	<b>Required by Program Developer</b>
Hard copies of implementation materials (print materials for population of 20,000-90,000)	\$1,865	Yes, one implementation material option is required
Electronic materials (includes 2-year materials license and customization fee)	\$1,000	Yes, one implementation material option is required
On-site training	\$1,500 plus travel expenses	Yes, one training option is required
Web-based training	\$1,500	Yes, one training option is required
2 years of technical assistance and consultation (includes license to use trademark, phone/email/Web technical support, access to PAXForms, and Web site setup/management)	\$7,000	Yes
Reward & Reminder online data management system	\$300	No

# ***Excellence in Prevention*** – descriptions of the prevention programs and strategies with the greatest evidence of success

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## **Additional Information**

The costs of the license, materials, and services to be purchased from PAXIS Institute depend on the size of the community, county, or State population and on the period of implementation. For example, the estimated base price for a 2-year implementation with a population of 20,000 to 99,999 is \$11,665.

## **Replications**

Selected citations are presented below. An asterisk indicates that the document was reviewed for Quality of Research.

Biglan, A., Ary, D., Koehn, V., Levings, D., Smith, S., Wright, Z., et al. (1996). Mobilizing positive reinforcement in communities to reduce youth access to tobacco. *American Journal of Community Psychology*, 24(5), 625-638.

Biglan, A., Henderson, J., Humphrey, D., Yasui, M., Whisman, R., Black, C., et al. (1995). Mobilizing positive reinforcement to reduce youth access to tobacco. *Tobacco Control*, 4, 42-48.

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## **12. Contacts for more information**

### **For information on implementation:**

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**Learn More by Visiting:** <http://www.rewardandreminder.com>