



Ninth Population Health and Disease Management Colloquium

Novel Patient Reminders and Medication Adherence

***Mary Swatek Hudson
SVP, Market Development
Pharmaceutical Direct, Inc.***

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Prescriptions in the United States

- Almost four (3.8) billion prescriptions were purchased in 2007 with the average number of retail prescriptions per capita being 12.6¹
- The number of prescriptions dispensed in the US is expected to grow to 4.5 billion by 2010²

1 "Prescription Drug Trends", The Henry J. Kaiser Foundation, September 2008.

2 "Enhancing Prescription Medicine Adherence: A National Action Plan", National Council on Patient Information and Education (NCPIE), August 2007.

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Who Pays for These Prescriptions?

In 2007, Americans were covered by:

- Employers (59%)
- Medicare Part D (8.5%)
- Creditable employer/union retiree plans (3.4%)
- VA and other creditable sources (1.3%)
- No creditable coverage (1.5%)
- Medicaid (20%)¹

¹ "Prescription Drug Trends", The Henry J. Kaiser Foundation, September 2008.

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Non-adherence to Medications

- Patient adherence to medication is a cross-cutting issue, irrespective of socioeconomic status and level of insurance coverage¹
- Nearly three out of every four Americans report not always taking their prescription medicine as directed and almost half of those polled (49%) said they had forgotten to take a prescribed medicine²

1 "In Chronic Disease, Nationwide Data Show Poor Adherence by Patients to Medication and By Physicians to Guidelines," *Managed Care*, February 2008.

2 "Enhancing Prescription Medicine Adherence: A National Action Plan", National Council on Patient Information and Education (NCPPIE), August 2007.

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Non-adherence to Medications

- Over one-fifth (22%) of Americans take less of their medication than is prescribed on the label¹
- Adherence drops most dramatically after the first six months of therapy²
- Among non-compliant patients the biggest reason cited is that **they simply forget**³
- Adherence can be “the key mediator” between medical practice and patient outcomes²

1 “Statistics on Medication”, American Heart Association, July 19, 2007, <http://www.americanheart.org/presenter.jhtml?identifier=107>

2 “Enhancing Prescription Medicine Adherence: A National Action Plan”, National Council on Patient Information and Education (NCPIE), August 2007.

3 Boston Consulting Group and Harris Interactive survey as reported by Chodon Group in *Sunday Star Ledger*, July 2007.

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What is the Cost of Non-Adherence?

- Total cost estimates between \$100-\$300 billion including both direct and indirect costs and 125,000 deaths per year¹
- Rapid onset of disease, increased costs, higher health care utilization, poor outcomes, higher hospitalization rates, and lost productivity^{2,3}
- 20-25% of employers' healthcare expenses are a direct consequence of medication nonadherence⁴

1 "What have we learned from 40 years of research on medication adherence?", *Medication Adherence Backgrounder*, Agency for Healthcare Research and Quality (AHRQ), February 25, 2008.

2 "In Chronic Disease, Nationwide Data Show Poor Adherence by Patients to Medication and By Physicians to Guidelines," *Managed Care*, February 2008.

3 Datamonitor, as reported in *Sunday Star Ledger*, July 2007.

4 "10th Annual survey of large employers", Watson Wyatt Worldwide and National Business Group on Health, March 2005.

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The Benefits of Medication Adherence

- Higher adherence was found to reduce the risk for a poor treatment outcome by 26%¹
- Interventions that improve patient adherence improve health status, reduce health care costs¹
- Medical utilization rates for various conditions, including diabetes, high cholesterol, hypertension and chronic heart failure, were significantly lower for patients with high medication adherence levels²

1 "Enhancing Prescription Medicine Adherence: A National Action Plan", National Council on Patient Information and Education (NCPPIE), August 2007.

2 "In Chronic Disease, Nationwide Data Show Poor Adherence by Patients to Medication and By Physicians to Guidelines," *Managed Care*, February 2008.

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Healthcare Cost Savings by Disease

Medication adherence can yield significant overall healthcare cost savings across many diseases:

- Every \$1 spent on diabetes medication yields **\$7.10** savings on other healthcare costs¹
- Every \$1 spent on cholesterol medicines yields **\$5.10** savings¹
- Every dollar spent on antihypertensives yields **\$4.00** savings¹

¹“Impact of Medication Adherence on Hospitalization Risk and Healthcare Cost”, Medco Health Solutions, *Medical Care*, 2005.

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How to Improve Medication Adherence?

A novel medication reminder device has been shown to increase patient medication adherence by **34%** in just 90 days.

- ✓ Measurable and projectable results
- ✓ Return on investment calculations to the penny

This device was developed by
Pharmaceutical Direct, Inc.

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Who is Pharmaceutical Direct Inc.?

- Established in 1992
- Direct marketing support for healthcare
(pharma, payers, providers, associations, agencies)
- Impacting patients and healthcare providers
- Innovative, measurable solutions
- Full-service, turn-key programs

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Who is Pharmaceutical Direct Inc.?

- Specialize in **custom-designed** programs
- Extremely competitively priced
- Efficient, high-quality service
- Fast turnaround
- Climate-controlled warehouse facility
- Based in Randolph, NJ

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Direct Marketing Support Services

Full-service fulfillment programs

- Patient medication reminder programs
- Patient starter programs / Welcome kits
- Continuing education binders
- Patient registrations and relationship programs

Market research

- Check studies
- Satisfaction surveys

Direct communications

- Mail, Email, Fax broadcast

Coupon redemptions

- Superior service and support

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Specialized Programs

Custom-branded and designed patient medication reminder programs featuring:



The **DOSE-ALERT** medication reminder device

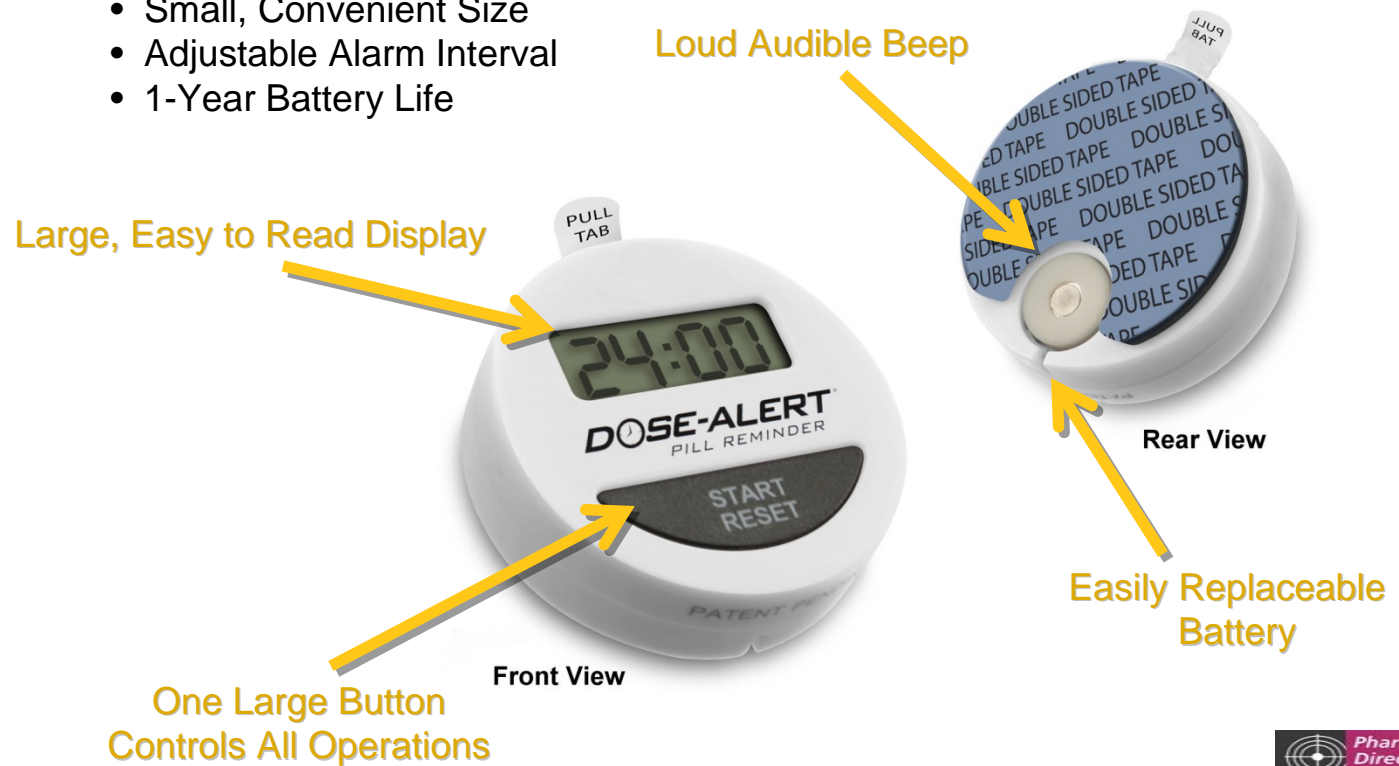
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The **DOSE-ALERT**[®] for Patient Adherence

The Patient-Friendly **DOSE-ALERT**

- Easy To Use
- Small, Convenient Size
- Adjustable Alarm Interval
- 1-Year Battery Life



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Completed Controlled Clinical Trials

Pilot study 1

n=176; 90-days; antihypertensive agent

Pilot study 2

n=115; 90-days; antihypertensive agent

Pivotal study

n=10,000; 90-days; cholesterol-lowering agent

All studies conducted through retail pharmacy partner

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The **DOSE-ALERT**® Patient Adherence

Pivotal Study Results

| | Test | Control |
|---|----------------|---------|
| Number of Patients | 5,000 | 5,000 |
| Total Units Dispensed (Pills) | 226,844 | 169,571 |
| Units Dispensed / Patient | 45.4 | 33.9 |
| Incremental Units / Per Patient vs. Control | +11.5 | |
| Total Incremental Units vs. Control | +57,279 | |

The chart above is the summary report of a program conducted by Eckerd Pharmacy. This program tracked the number of refills in a 90-day period from two demographically and numerically equivalent groups of patients taking a cholesterol lowering medication. The Test group received the device unsolicited through the mail while the Control group did not. At the end of the study, the Test group showed an average **increase of 34% (11.5 more pills per quarter per patient)** compared to the Control group.

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Applications for Medication Adherence

Unsolicited patient mailing by a retail drug chain

n=10,000; 90-days; antihypertensive agent

Program components:

- “Dear Patient” cover letter on the importance of compliance
- Customized Dose-Alert® device and operating instructions
- Bubble bag and first class postage



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Applications for Medication Adherence

Unsolicited patient mailing by a retail drug chain

(continued)

Process:

1. Chain selects “test”/“control” groups from its database
2. PDI produces letters, assembles packages, affixes postage and ships packages to Chain’s mailing center
3. Chain places address labels for “test” group on packages and places them in the mail
4. Chain monitors member prescription refill activity and generates reports comparing “test” versus “control” groups after 90 days

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Applications for Medication Adherence

Unsolicited member mailing by a payer

n=6,000; 90-days; cholesterol-lowering agents

Program components:

- “Dear Member” cover letter on the importance of compliance
- Customized Dose-Alert® device and operating instructions
- Bubble bag and first class postage



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Applications for Medication Adherence

Unsolicited member mailing by a payer

(continued)

Process:

1. Payer selects “test”/“control” groups from its database
2. PDI produces letters, assembles packages, affixes postage and ships packages to payer’s mailing center
3. Payer places address labels for “test” group on packages and places them in the mail
4. Payer monitors member prescription refill activity and generates reports comparing “test” versus “control” groups after 90 days
- 5. Longer-term utilization rates may be compared**

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Applications Supporting Behavior Change

Worksite Wellness Program Support

n=100; 120-days; Health FirstSM by Wellness Press

About Health FirstSM Campaign:

- Unique approach to “population health management”
- Team-based challenge enrolls 20-40% of worksite
- Onsite and online sessions led by dynamic dietitians
- Biometric points, coaching, online Personal Health Records
- Reduces Smoking, Tot-C, LDL, Weight & BP
- Measurable outcomes (short and long term cost savings)
- Used on over 8,500 employees nationwide

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Applications Supporting Behavior Change

Worksite Wellness Program Support

(continued)

Process:

1. Customized Dose-Alert® devices shipped to Health FirstSM site leader, a registered dietitian
2. At first biometric point, dietitian coaches employee on use of Dose-Alert and follows-up at two other biometric points
3. Employees use device as reminders to take a fitness break, eat a healthy snack, drink water to stay hydrated, and other activities to support health at work



Front View

For further information on Health FirstSM: www.wellnesspress.com

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Applications for Patient Engagement

Opt-In Patient Registration Program

n=5,000; on-going; dermatology product

Soriatane Register - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Refresh Mail Print Word Pad Internet Options

My Web Search Search Address <http://psoriasisprogram.com/> Go Links

REGISTER FOR THE PSORIASIS CARE PROGRAM

When you register you can take advantage of all the program benefits such as convenient email reminders, in addition to the Instant Savings Card you have already received (if you are eligible). Furthermore, Stiefel, the makers of SORIATANE® (acitretin) Capsules will provide a donation to the National Psoriasis Foundation when you register for the Psoriasis Care Program. This will allow you to receive a one-year membership to the National Psoriasis Foundation.

Please fill out the form below to complete your card registration and review and accept the Terms and Conditions, including your voluntary participation and authorization to disclose personally identifiable health information.

***Mandatory Fields**

I would like a complimentary one-year membership to the National Psoriasis Foundation.

I would like to receive a complimentary Dose-Alert™ medication reminder.

Receive these items when you register:

- National Psoriasis Foundation one-year membership
- Dose-Alert™ medication

Internet 6:21 PM

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Applications for Patient Engagement

Opt-In Patient Registration Program *(continued)*

Program components:

- Cover letter
- Customized Dose-Alert[®] device
- Psoriasis Care brochure

Process:

1. Patients visit website and register for program
2. PDI produces letters, assembles packages, affixes postage and ships packages based on patient responses
3. Dermatology company maintains patient relationship programs and monitors patient responses/loyalty

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Applications for Physician Engagement

Adherence Support through Physician Visits

n=200,000; on-going; CNS agent (BiPolar/Epilepsy/Migraine)

Program components:

- Customized Dose-Alert® device and operating instructions



Process:

1. PDI produces customized Dose-Alert® devices and delivers to sales distribution center
2. Sales Representative provides PhRMA-compliant device to physician during sales call
3. Physician offers device to patient at time of visit

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Applications for Physician Engagement

Novel, Functional Patient Premium

n=10,000; on-going; Sensorimotor agent (RLS/Parkinson's)

Program components:

- Customized Dose-Alert® device and operating instructions



Process:

1. PDI produces customized Dose-Alert® devices and delivers to patient relationship center (PRC)
2. New patients receive device through welcome program
3. PRC monitors patient engagement and tracking

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Applications for Treatment Adherence

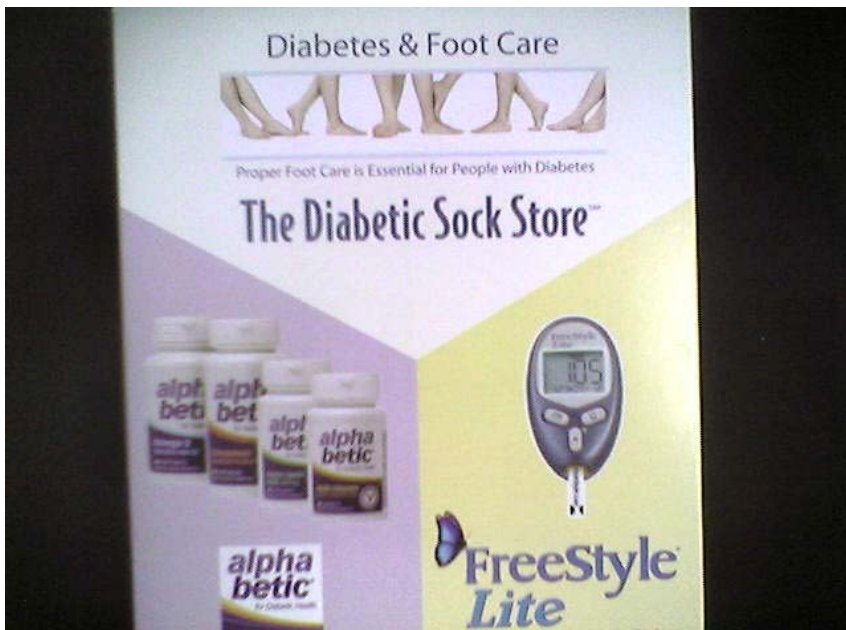
Patient Starter Programs/Welcome Kits

n=120,000; 12-months; Diabetes

Program Components:

- Disease-state specific kits
- Product samples
- Product and service coupons
- Customized Dose-Alert[®] device
- Category exclusivity

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Patient Starter Kits



Patient Starter Kits





Applications for Treatment Adherence

Patient Starter Programs/Welcome Kits

(continued)

Process:

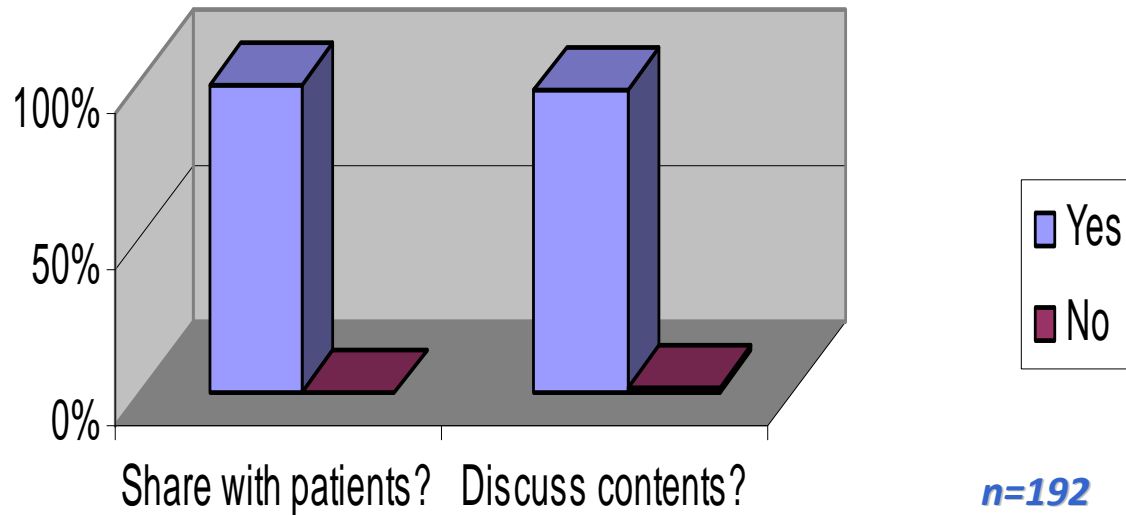
1. Program sponsor recommends insert categories and provides logo artwork for outside panel(s) of the kit
2. PDI recruits insert partners, customizes Dose-Alert[®] devices, produces, assembles and mails out kits
3. Partners monitor coupon redemptions; sponsor also receives **survey results**
4. Dose-Alert supports daily treatment recommendations

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Patient Starter Program/Welcome Kit Survey

Diabetes Educator Response to Patient Gift Box



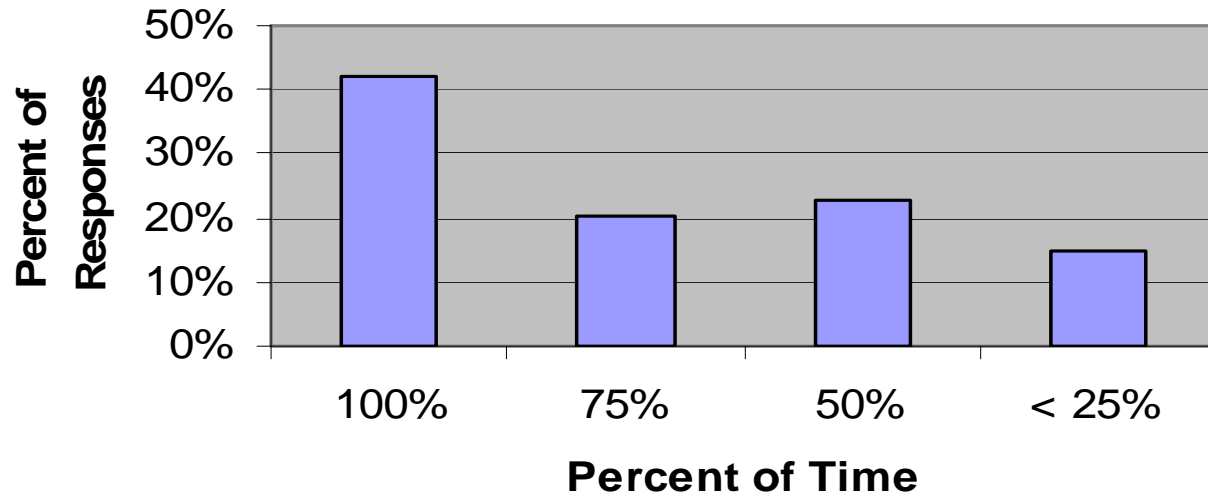
*Survey conducted at American Association of Diabetes
Educators annual conference, August 2008*

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Patient Starter Program/Welcome Kit Survey

How Often Do You Talk To Your Patients About the Importance of a Good Oral Care Regimen?



Survey conducted at American Association of Diabetes

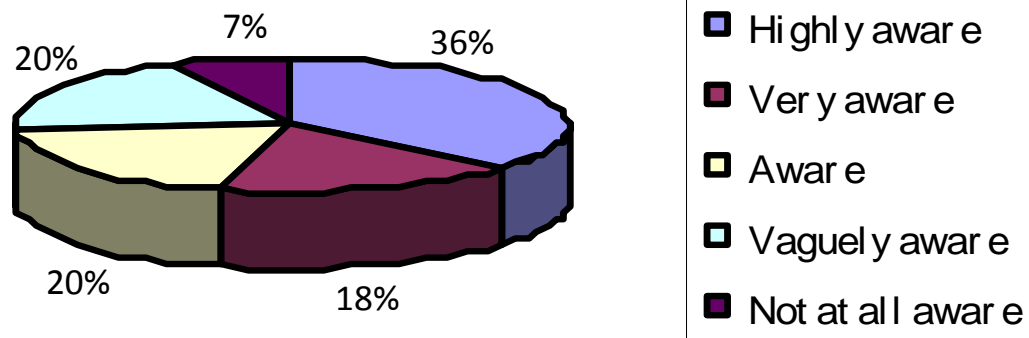
Educators annual conference, August 2008

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Patient Starter Program/Welcome Kit Survey

**How Aware Are Your Patients
About the Fact that if They
Have Diabetes They are Twice
as Likely to Have Gum Disease?**



*Survey conducted at American Association of Diabetes
Educators annual conference, August 2008*

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Customized Patient Adherence Programs

In Summary:

Clinical data support Dose-Alert's role in patient medication adherence; additional clinical studies are on-going

Key features of the Dose-Alert:

- PhRMA compliant and FDA registered
- Small, light, convenient size
- Easy-to-use in a variety of applications
- Affordable and delivers fast results

Existing applications include:

- ✓ Patient education, registration, and retention
- ✓ Healthcare professional outreach
- ✓ Clinical trials
- ✓ Promotional programs including welcome/starter kits

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Custom Adherence Solutions

Impact patient medication adherence with the clinically-proven Dose-Alert® device. Let us help you easily design a customized yet simple program that is appreciated by healthcare professionals and patients alike.

Contact: MARY SWATEK HUDSON

Senior Vice President, Market Development
Pharmaceutical Direct, Inc.

Tel: 973-927-0300

Email: mshudson@pharmdirect.com

www.pharmdirect.com

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