



"Patterns of Poor Adherence in a One-Size-Fits-All Environment"

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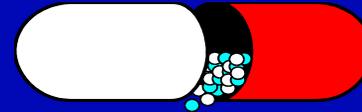
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50% of Patients Fail to Adhere

- ◆ To Pharmacotherapy



- ◆ To Diet



- ◆ To Exercise Programs



Adherence Rates

	Medication	Exercise	Diet	Smoking Smokers	Relapse
1970's	50%	50%	50%	34.4%	70-80%
2000's	50%	50%	50%	22.7%	70-80%

19 Adherence Intervention Studies

- ◆ **Randomized**
- ◆ **Control Group**
- ◆ **Assessment of Adherence**
- ◆ **Assessment of Outcome**
- ◆ **6 month Follow Up**

Haynes, R. B., Montague, P., Oliver, T., McKibbin, K. A., Brouwers, M. C., & Kanani, R. (2001). Interventions for helping patients to follow prescriptions for medications. [Systematic Review] [Cochrane Consumers & Communication Group Cochrane Database of Systematic Reviews.](#)

Effect of Adherence Interventions

- ◆ 10/19 (53%) Improved Medication Adherence
- ◆ 9/19 (47%) Improved Adherence and Outcome

Effect Sizes on Adherence Interventions

- ◆ Roter et al. (1998) reported overall effect sizes of .39 across interventions and .43-.45 for behavioral educational interventions using indirect measures of adherence (e.g., pill counts, refills, electronic monitors).

Roter, D. L., Hall, J. A., Merisca, R., Nordstrom, B., Cretin, D., & Svarstad, B. (1998). Effectiveness of interventions to improve patient compliance: A meta-analysis. Medical Care, 36(8), 1138-1161.

Effective Adherence Interventions

- ◆ Education
- ◆ Counseling
- ◆ Self-Monitoring
- ◆ Reminders
- ◆ Tailoring
- ◆ Reinforcement
- ◆ Simplified Dosing
- ◆ Improved Convenience/Access



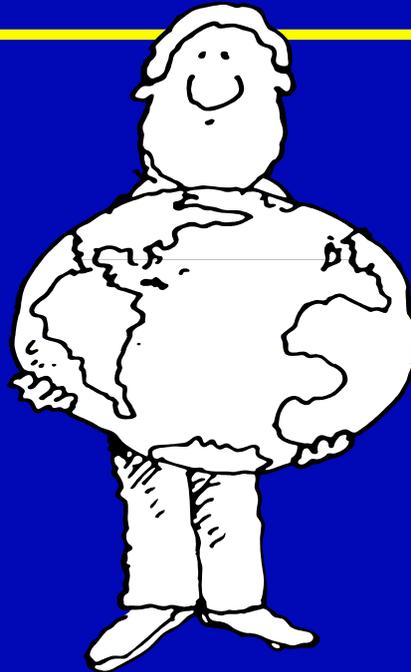
* no component analysis of complex regimen

Haynes et al, 2002

Theoretical Approaches to Adherence

- ◆ Educational
- ◆ Behavioral
- ◆ Motivational

**Does the Individual Patient Data Fit
With Our More Global View of
Adherence?**

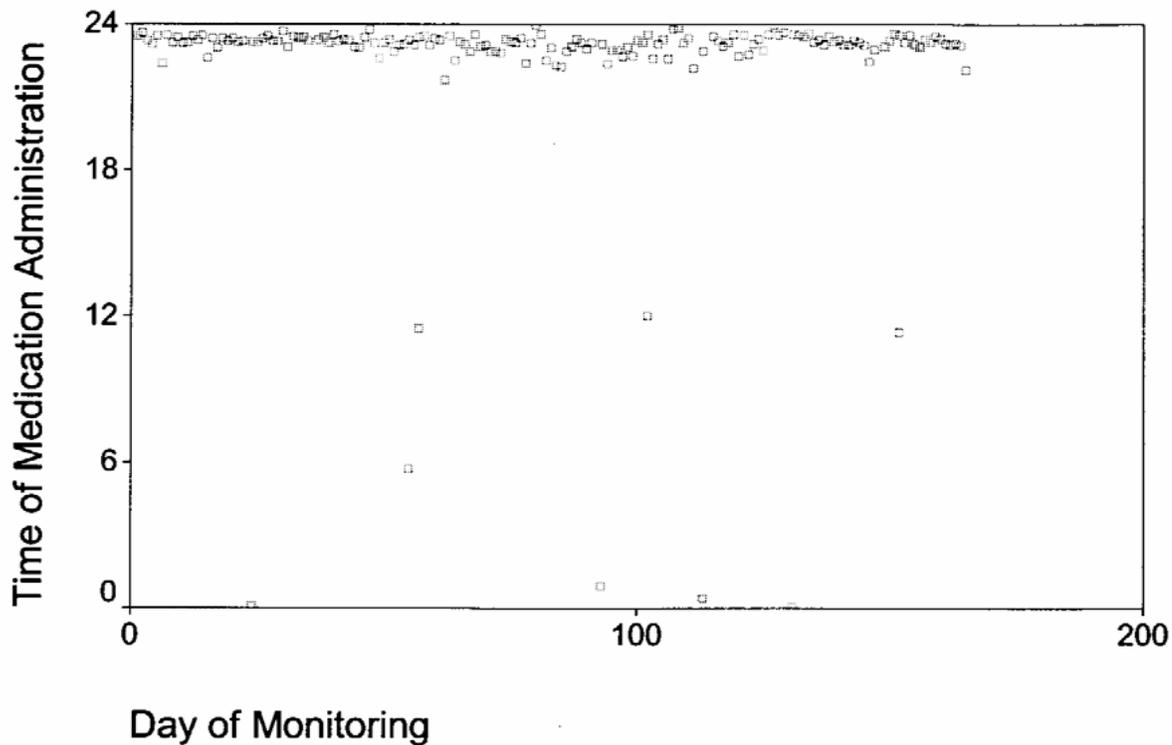


Case 1

Good Adherer

Time of Medication Administration versus Day

ID: 1609



100.61% pills taken

90.91% days adherent

90.91% interval adherence

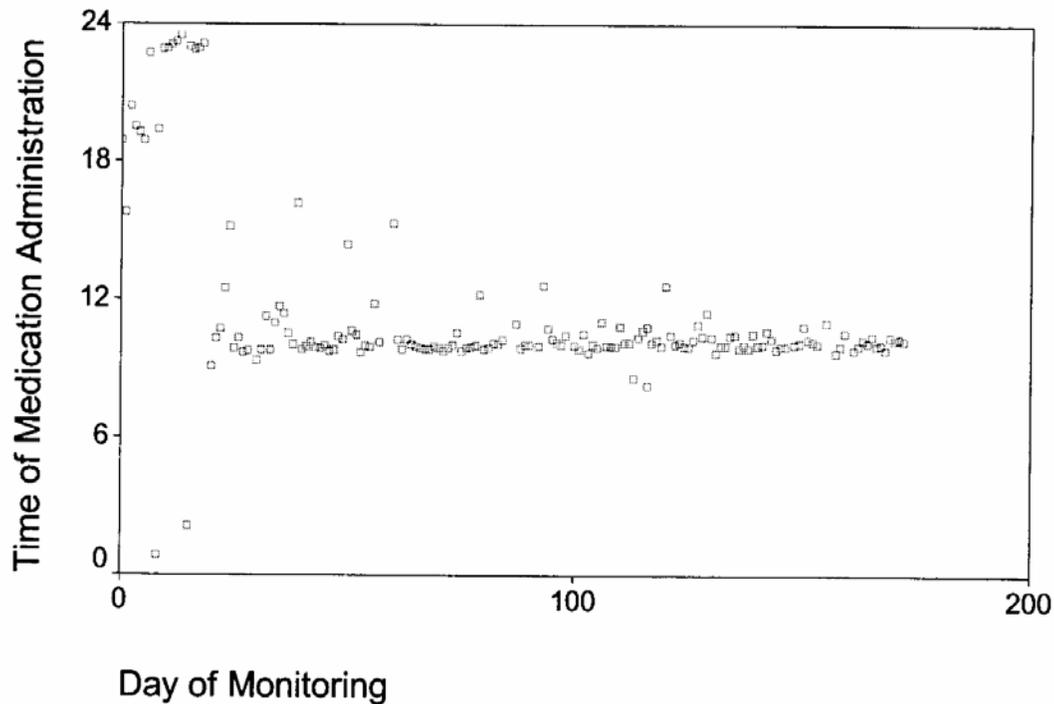
94.14% coverage

Case 2

Good Adherer

Time of Medication Administration versus Day

ID: 946



93.60% pills taken

90.12% days adherent

88.37% interval adherence

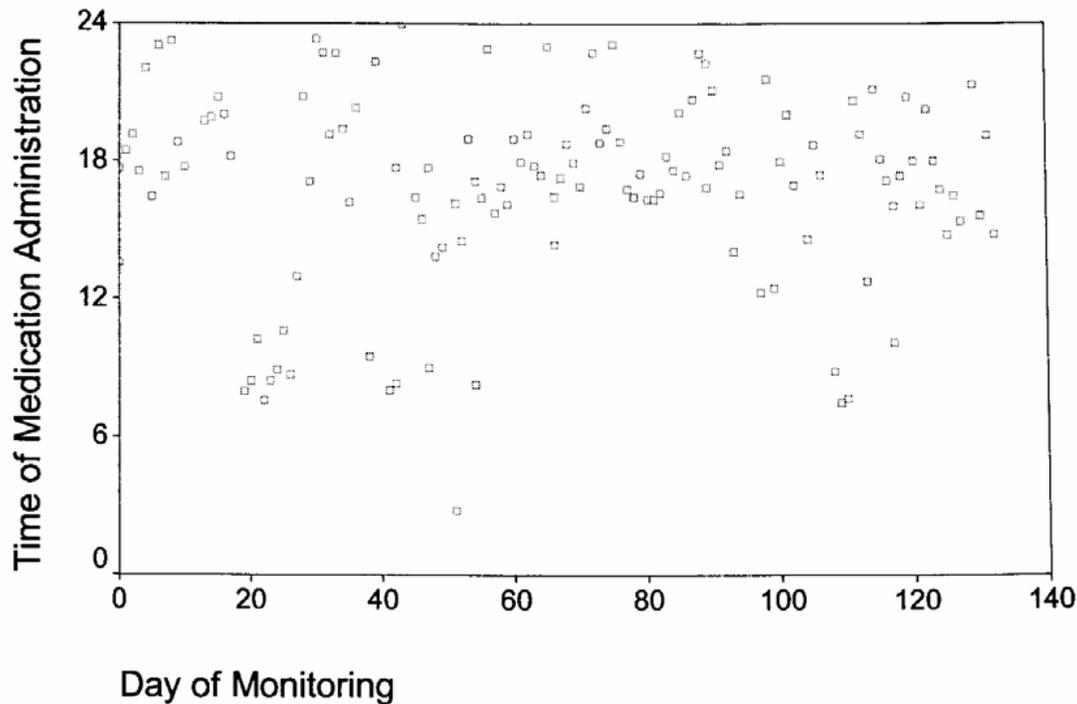
89.56% coverage

Case 3

Moderate Adherer

Time of Medication Administration versus Day

ID: 1173



73.41% pills taken

65.32% days adherent

61.85% interval adherence

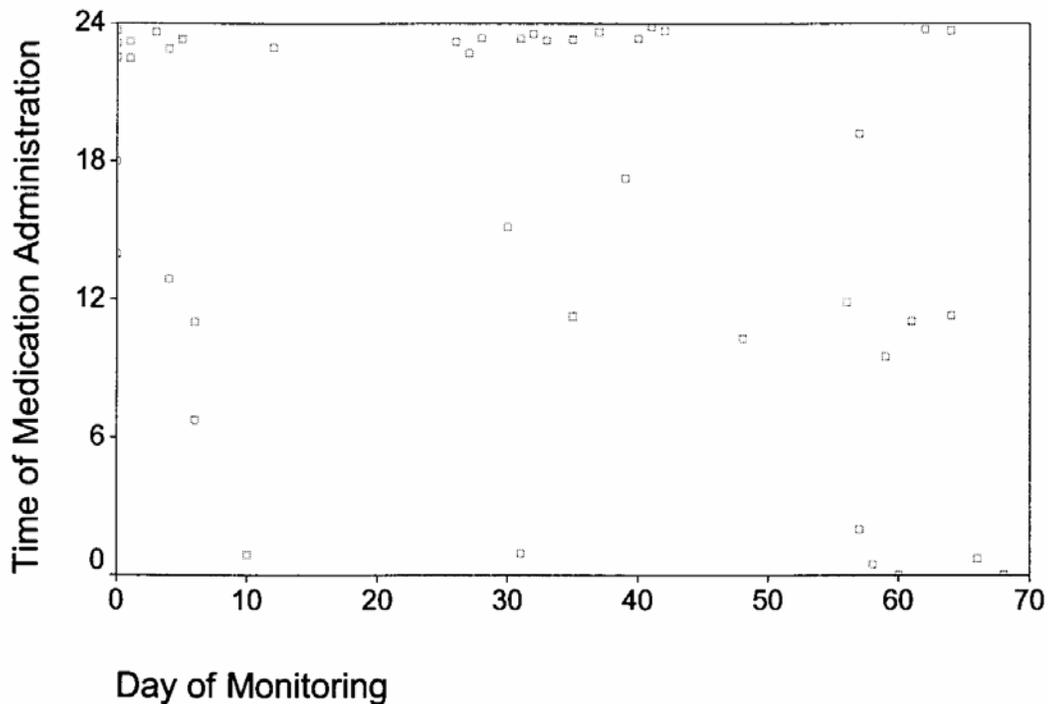
59.95% coverage

Case 4

Poor Adherer with Episodic Dosing

Time of Medication Administration versus Day

ID: 1228



20.99% pills taken

13.26% days adherent

12.15% interval adherence

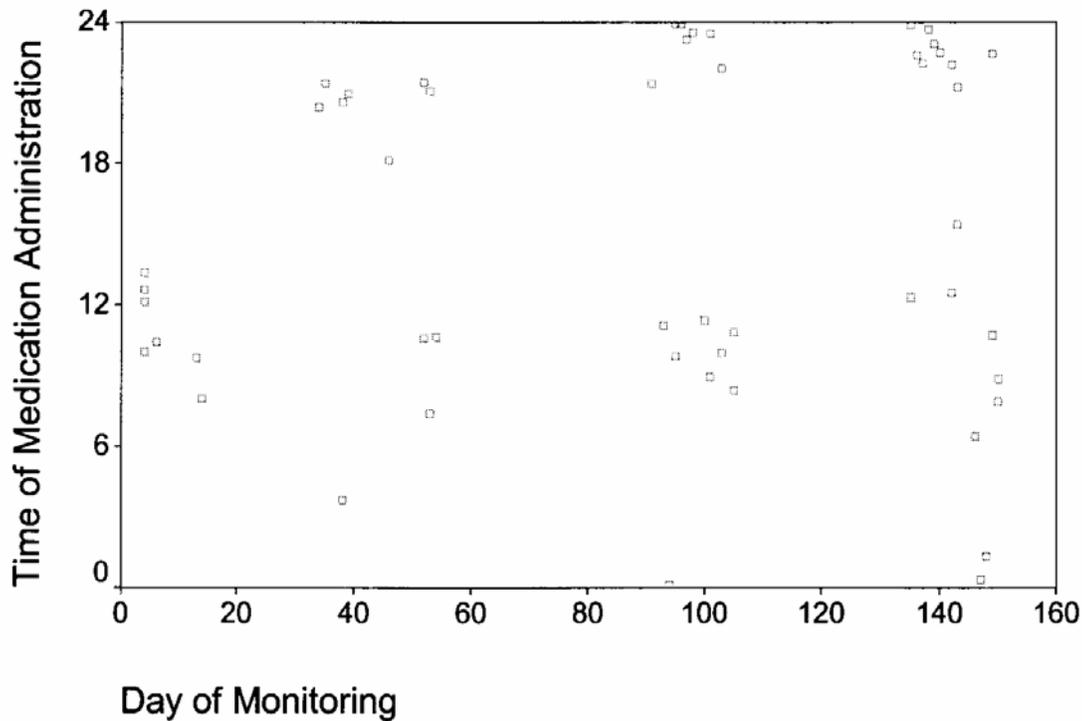
13.49% coverage

Case 5

Poor Adherer – Off and On

Time of Medication Administration versus Day

ID: 1620



30.91% pills taken

13.94% days adherent

12.12% interval adherence

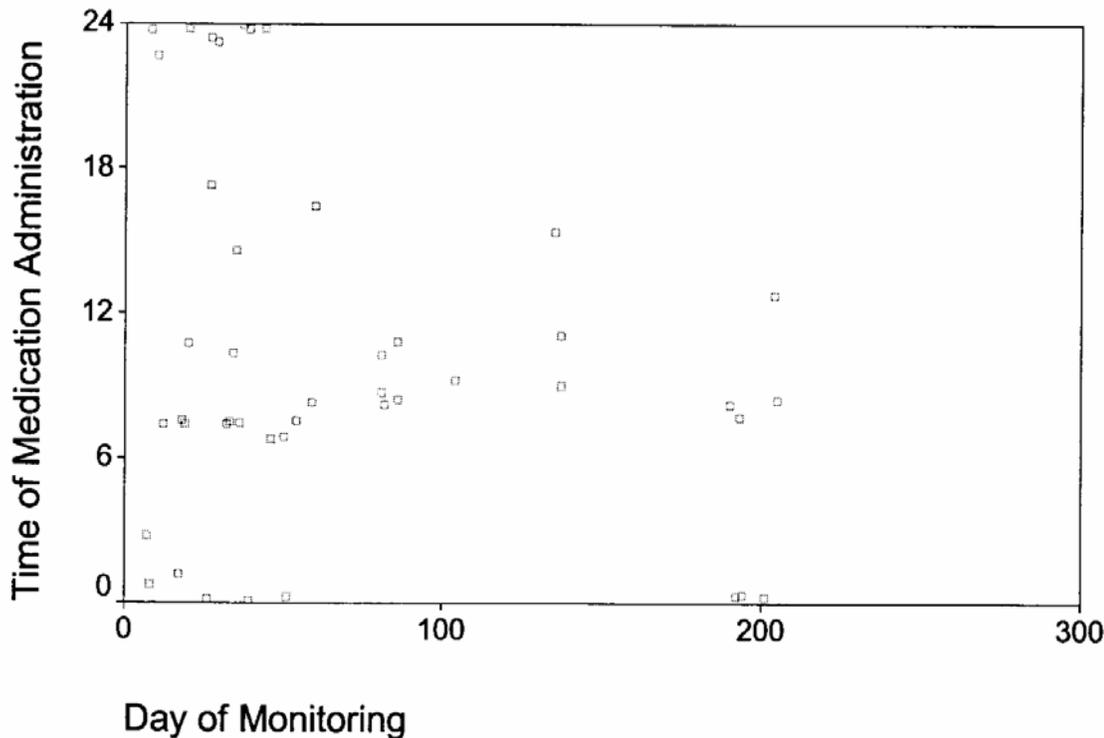
18.09% coverage

Case 6

Poor Adherer with Treatment Cessation

Time of Medication Administration versus Day

ID: 531



22.00% pills taken

15.00% days adherent

13.50% intervals adherence

16.95% coverage

Are There Gender Differences in Adherence?

ADHERENCE:	Male (N=97)	Female (N=83)	<i>t</i>	<i>p</i>
Percent of Pills Taken	<u>M</u> = 80.86 ± 28.8	73.15 ± 30.9	1.73	.085
Percent of Days Adherent	<u>M</u> = 59.24 ± 24.0	57.43 ± 26.2	.48	.629
Percent of Interval Adherent	<u>M</u> = 57.44 ± 23.7	56.21 ± 26.1	.33	.740
Percent of Time of Therapeutic Coverage	<u>M</u> = 69.53 ± 25.9	63.93 ± 28.1	1.39	.166

Are There Racial Differences in Adherence?

- ◆ One-month EEM adherence differences observed at baseline in group with hyperlipidemia

African Americans Mean = 48.57 SD = 34.86

Caucasians Mean = 67.40 SD = 28.22

**There is No Evidence That Adherence
Varies Significantly By Disease**

Reasons for Poor Adherence Patient Perspective

- ◆ Forgetting
- ◆ Symptom Management
- ◆ Schedule Disruptions
- ◆ Adequacy or Completeness of Instructions
- ◆ Multiple or Complex Regimens
- ◆ Concerned About Side Effects
- ◆ Condition Improved
- ◆ Thought Medication Wouldn't Help
- ◆ Did Not Need Medication
- ◆ Did Not Want to Take It
- ◆ Lost Medication
- ◆ Cost
- ◆ Not Available In Stores

**Poor Adherence is a Summary Term Which Refers to
a Variety of Behavioral Errors
Which May Occur Alone or In Combination Over
Some Period of Time Due to a Variety of Reasons**



Types of Behavioral “Errors”

- ◆ **Failure to Adopt the Regimen**
- ◆ **Early Stoppage of Treatment**
- ◆ **Reduction in Levels of treatment**
- ◆ **Over Treatment**
- ◆ **Variability in the Conduct of Treatment**
- ◆ **Dosage Interval Errors**
- ◆ **Performance Errors**

What Do We Need To Do?

- ◆ **Fundamental Research on Adherence**
- ◆ **Identify Patterns of Poor Adherence**
- ◆ **Evaluate Intervention Effectiveness for Specific Behavioral Errors**

**Any Questions?
Thank You!**

