

# Root Causes of Lack of Adherence to Metabolic Bone Disease Medications in Dialysis Patients

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#### Introduction

- Adherence with metabolic bone disease (MBD) medications among end-stage renal disease (ESRD) patients is estimated to be only 50%.<sup>1</sup>
- Dietitians, the primary professionals managing MBD in hemodialysis patients, are challenged to determine accurate root causes of missed doses and to perform interventions that improve adherence.

### Objective

The purpose of this study was to determine the root causes for binder non-adherence in a sample of hemodialysis patients. Social workers worked together with dietitians to determine if a collaborative effort was more effective than dietitians working alone.

### Methods

- Fifty patients across 17 hemodialysis clinics were interviewed on a weekly basis over a 12-week period to determine the root causes for missed MBD medication doses.
- The patients selected had out-of-range phosphorus values for 2 of the 3 previous months.
- Dietitians teamed up with social workers to execute this project. Each team
  worked with 3 patients, with the social worker and dietitian alternately meeting
  with patients weekly, using a "Patient Encounter Tool" to identify root causes for
  missed doses.
- During the first encounter with the patient, the dietitian asked the patient to bring in his/her MBD medications for review. Using the web site www.mymedschedule.com, the dietitian printed out an MBD medication schedule for each patient.
- During each subsequent encounter, either the social worker or the dietitian asked the patient if he/she had missed any MBD doses that week. If the patient had missed doses, the social worker or dietitian questioned further to determine the reason(s) for the missed dose(s) using the Patient Encounter Tool provided.
- Upon determining the reason(s) for the missed dose(s), the social worker or dietitian performed interventions specific to each root cause listed on the Encounter Tool.
- At the end of the encounter, the social worker or dietitian checked with the patients to see if they needed any assistance obtaining medications for the following week.

### Results

- Among the 50 patients, 76% reported having missed doses of MBD medication during the 12-week period (Figure 1).
- 66% missed fewer than 5 times
- 10% missed 5 times or more
- 24% never missed a dose
- Table 1 shows the frequency of cited reasons for missing MBD doses.
- The most frequently cited reason for missing doses was "Forgot to take" at 41%.
- The second most frequent reason was "Ill and not eating that many meals" at 10%.
- Patients reported having financial barriers to obtaining their medications only 4% of the time.
- Because the majority of patients reported "Forgot to take" as the reason for missing doses, we looked at this further to see how many doses patients forgot to take (Figure 2). Most (76%) forgot to take their medication 3 times or fewer.
- Each patient's last monthly phosphorus value was reported starting from the month prior to the study and then throughout the following 3 months.
   30% of patient had lab values within range during all 3 months of the study.
- 28% had labs within range for 2 of those 3 months.

# Table 1. Reasons Cited for Missing Metabolic Bone Disease Medication and Frequency

Reason	Percentage
Forgot to take	41%
Ill and not eating that many meals	10%
Don't understand importance	7%
Difficulty swallowing	7%
Reluctant to talk	6%
Side effects	6%
Don't understand timing	5%
Depressed	4%
Other	4%
Forgot to refill	3%
In donut hole	2%
Hospitalized	2%
High co-pay	1%
Prior Authorization problems	1%
Physician changed prescription	1%

Figure 1. Percentage of Patients Reporting Missed Weekly Doses

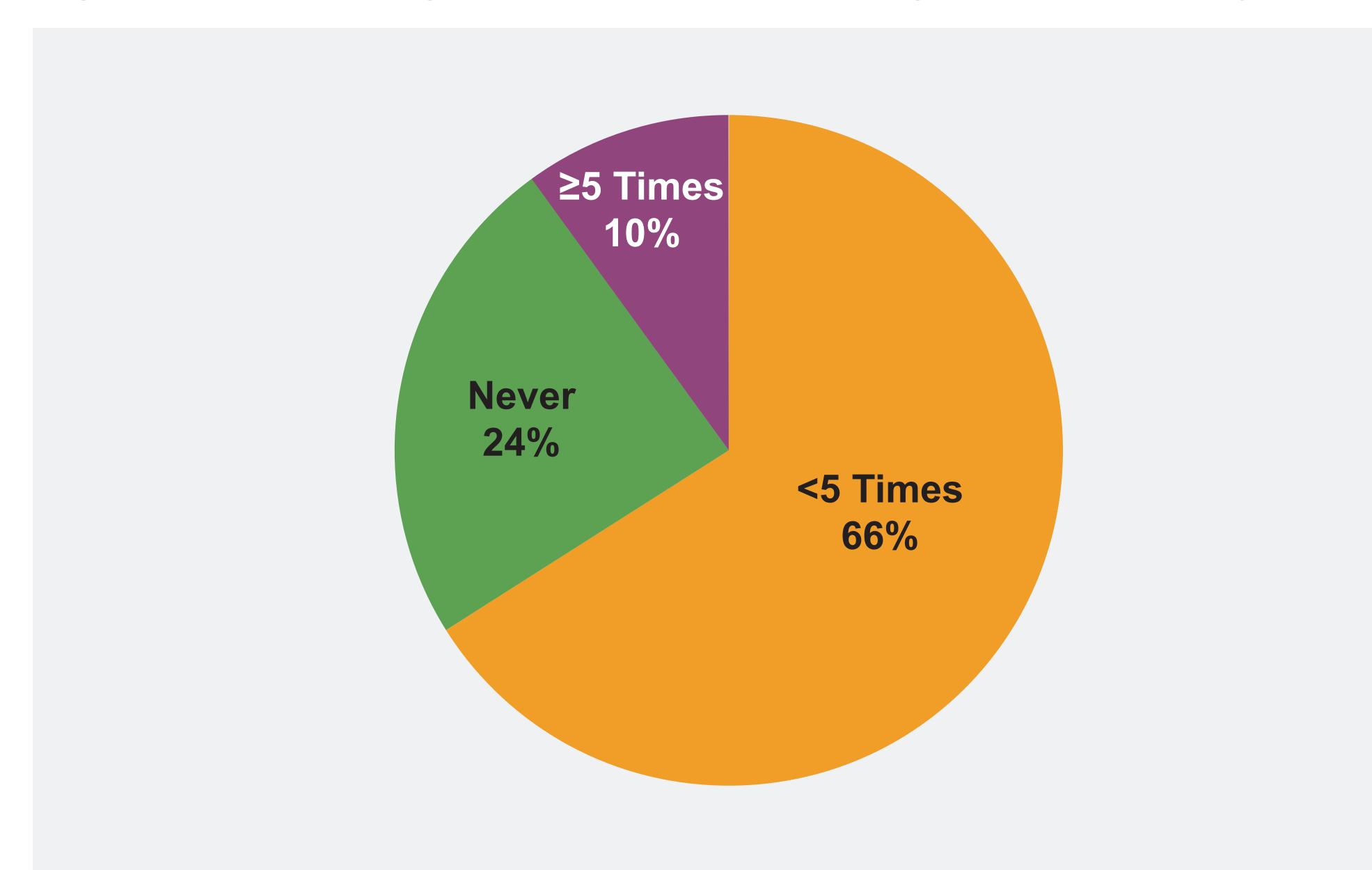
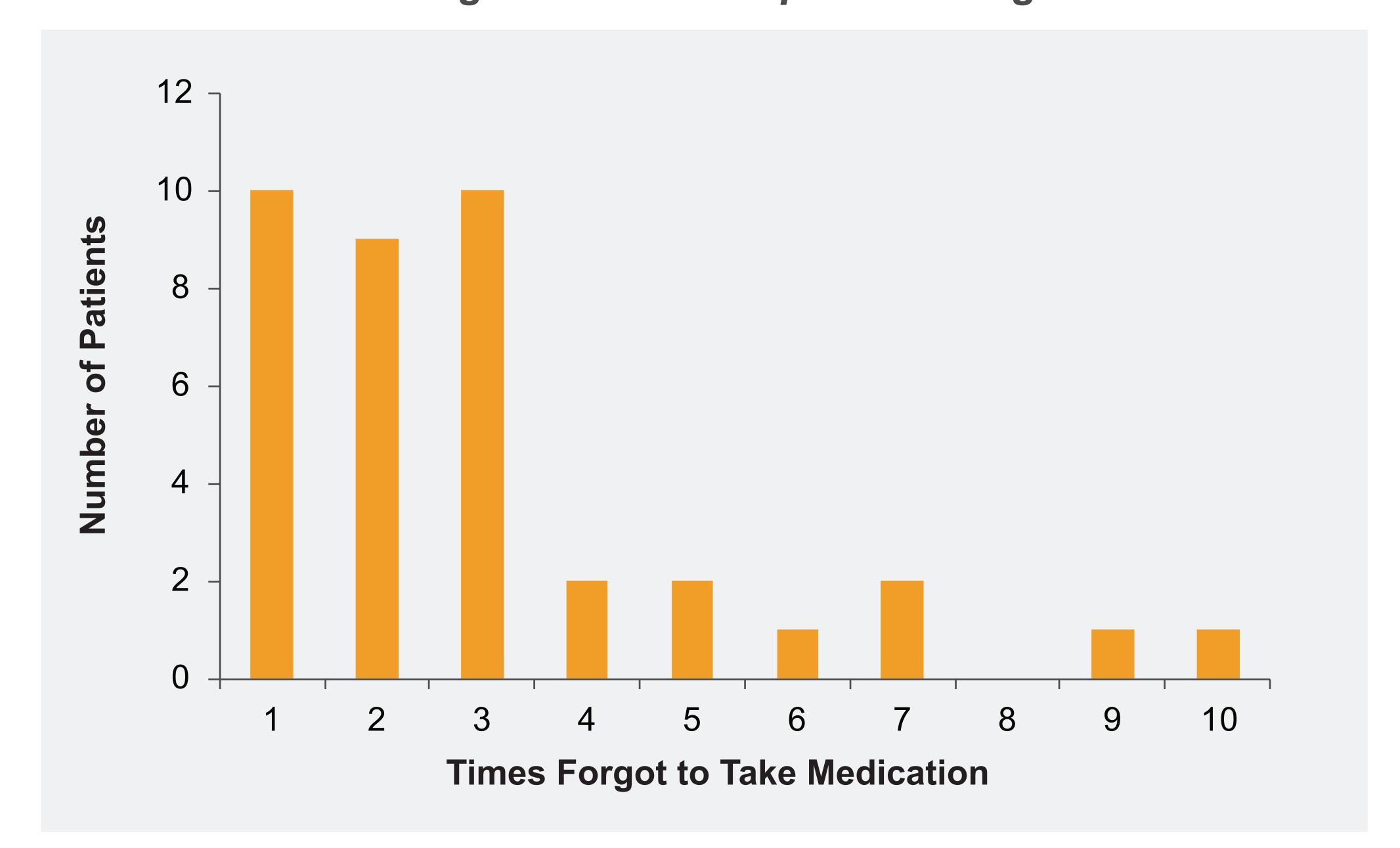


Figure 2. Number of Times Metabolic Bone Disease Medication was not Taken Among Those who Reported "Forgot to Take"



### Discussion

- In this study on lack of adherence to MBD medications the most frequently cited reason was "Forgot to take."
- Patients in this study did not report having many problems accessing medications. Being in the donut hole, having high co-pays, and having problems with prior authorizations were reported less than 4% of the time.
- The majority of missed doses were the result of a large segment of the study sample forgetting to take their medication less than 5 times per week. A smaller segment of the sample forgot more than 5 times per week.
- This suggests that dietitians and social workers might be more efficient by focusing on the large portion of the ESRD population who forget some of the time rather than the smaller portion who forget most of the time.
- Clinical interventions should perhaps focus on ways to help patients remember to take their pills, such as placing pills in a readily visible area, setting alarms when doses are scheduled, and carrying pills with them.
- The phosphorus values of 58% of patients improved during the 3 months of the study, possibly demonstrating the effect of a weekly team approach to MBD counseling.

#### Conclusions

This study, which explored the reasons why ESRD patients missed doses of their MBD medications, found:

- The most cited reason for missing doses was that the patient simply forgot to take the medication.
- A large number of patients reported missing < 5 doses per week; only 10% of the patients in the study reported missing more than 5 doses each week.
- The phosphorus values of more than half the patients improved during the 3 months of the study, possibly demonstrating the effect of meeting with patients weekly using a team approach.

### References

1. Schmid H, Hartmann B, Schiffl H. Adherence to prescribed oral medication in adult patients undergoing chronic hemodialysis: A critical review of the literature. Eur J Med Res. 2009;14(5):185-190.

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