

of the normative, if not the actual, behavior. □

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### References

1. Weniger BG, Limpakarnjanarat K, Ungchusak K, et al. The epidemiology of HIV

infection and AIDS in Thailand. *AIDS*. 1991;5(suppl 2):S71-S85.

2. *Statistics: June 1989 to December 1992 and Abstracts of Reports in Thai AIDS Journal*. Bangkok, Thailand: Institute of Health Research, Chulalongkorn University; 1993.

## Three-Year Follow-Up of an HIV Risk-Reduction Intervention That Used Popular Peers

In 1991 and 1992, Kelly et al.<sup>1,2</sup> reported populationwide changes in risk reduction by gay men following a controlled multiple-city test of a human immunodeficiency virus (HIV) prevention model targeting communities. We returned to the original communities 3 years later to compare current patterns of behavior with those observed immediately after the interventions.

Surveys were conducted for 3 nights at the gay club(s) in each city following the same procedures described in the original studies.<sup>1,2</sup> Two additional questions were used to clarify whether each respondent lived in the area at the time of the original investigation or recalled completing the survey 3 years earlier. Across the three cities, 54% of the men recalled completing the survey before, and 70% of all men

entering the clubs completed the measures. Univariate analyses of variance and chi-squared tests found no differences between men in each city who participated in the original study and those who participated only in this longitudinal follow-up investigation (all  $P > .05$ ).

Table 1 indicates the percentage of men in each city who reported engaging in each practice at baseline, following the original intervention, and 3 years later. Assessment of maintenance following risk reduction interventions has rarely extended across such a prolonged follow-up period, and the present findings indicate that, 3 years after the original investigation, all three cities show continued reductions in unprotected anal intercourse and increases in the percentage of anal intercourse occasions protected by condoms.

As a longitudinal field investigation, this study has a number of limitations. These include the possibility that other factors influenced the sexual behavior of gay men in these cities during the intervening years, and the imprecision inherent in sampling a communitywide population. Despite these limitations, this longitudinal assessment provides additional support for the effectiveness of targeted community-level interventions to lower HIV risk behavior.

**TABLE 1—Populations Surveyed, Number of 3-Night Survey Periods, and Percentages of Gay Men Who Had Engaged in Each Practice within the Past 2 Months, by City and Stage of Study**

	Biloxi			Monroe			Hattiesburg		
	Baseline (n = 295)	Post- intervention (n = 355)	3 Years Later (n = 274)	Baseline (n = 348)	Post- intervention (n = 185)	3 Years Later (n = 102)	Baseline (n = 117)	Post- intervention (n = 74)	3 Years Later (n = 105)
Number of 3-night survey periods	2	3	1	4	2	1	4	1	1
Unprotected anal intercourse occasions, %	37	28	20	43	34	30	34	30	25
Insertive unprotected anal intercourse occasions, %	31	22	17	36	28	21	26	22	21
Receptive unprotected anal intercourse occasions, %	27	19	14	31	23	17	27	20	17
Anal intercourse occasions protected by condoms, %	49	55	64	48	56	69	56	58	61
Men reporting more than one sex partner, %	42	35	36	41	33	37	38	38	30

This field study has also generated some sobering realizations. More than 10 years into the HIV epidemic and after intensive interventions in each community, upwards of 20% of the men in each city still report that they had engaged in unprotected anal intercourse within the previous 2 months, and nearly one third of anal intercourse occasions were not condom protected. Although the benefits from the original interventions are both statistically and clinically meaningful, further efforts are needed to promote risk reduction among individuals who continue to engage in risky behavior. □

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## References

1. Kelly JA, St. Lawrence JS, Stevenson LY, et al. Community AIDS/HIV risk reduction: the effects of endorsements by popular people in three cities. *Am J Public Health.* 1992;82:1483-1489.
2. Kelly JA, St. Lawrence JS, Diaz YE, et al. HIV risk behavior reduction following intervention with key opinion leaders of population: an experimental analysis. *Am J Public Health.* 1991;81:168-171.

## Clarification on the Coding of Hip Fractures

In a letter to the Journal, Wysowski and Baum examined the Medicaid coding of hip fracture from 1983 to 1986 by reviewing claims profiles and charts.<sup>1</sup> To include almost all hip fracture cases, they reviewed all cases with International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) hip fracture diagnosis codes (820 range), with the following: physician claims containing specific hip fracture treatment codes (Current Procedural Terminology [CPT] codes 27230 through 27248), and all cases with appropriate ICD-9-CM procedure codes in the fracture reduction (79), total hip replacement (81.5), or other hip arthroplasty (81.6) ranges. Based on their review, the authors concluded that hip fracture diagnoses can be used to identify cases, but that procedure codes

alone cannot. This latter conclusion is misleading because it results from their particularly broad choice of procedure codes.

None of the ICD-9-CM procedure codes is specific to hip fracture. The codes in the 79 range do not distinguish between hip and other parts of the femur, and some are used for separated epiphysis or for fractures with unspecified site. The arthroplasty codes frequently are used for reasons other than hip fracture, such as degenerative conditions. In contrast, CPT codes 27230 through 27248 do specifically imply hip fracture, including "pathological" hip fractures that are excluded by Wysowski and Baum.

Thus, while none of the ICD-9-CM procedure codes can establish the presence of hip fracture, the physician claim CPT codes should imply hip fracture of some sort (pathological or otherwise) and therefore they should be useful in selecting a hip fracture cohort. It would be of considerable interest if Wysowski and Baum were to calculate the predictive value of the CPT codes separately from the ICD-9-CM codes. □

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## References

1. Wysowski DK, Baum C. The validity of Medicaid diagnoses of hip fracture. *Am J Public Health.* 1993;83:770. Letter.

## Wysowski and Baum Respond

As Barrett and Baron point out in their letter concerning our study of the validity of Medicaid diagnoses of hip fracture (ICD-9-CM code 820, fracture of the neck of the femur),<sup>1</sup> there is a difference in the specificity of hip fracture diagnoses between the CPT-4 (physician claim) procedure codes and the ICD-9-CM procedure codes. In our study, after necessary exclusions of patients were made (from an original 32) primarily because of unattainable medical records, we determined that 19 patients without inpatient diagnoses of hip fracture had CPT-4 procedure codes specific for fractures of the femoral neck (27230 through 27248). Following review of profiles or medical records, we found that 14 patients had hip fracture diagnoses and 5

patients did not have hip fracture diagnoses (1 with a femoral shaft fracture [ICD-9-CM code 821], 1 with osteoarthritis [code 715.90], 2 with pathological fractures [code 733.1] of unknown sites, and 1 with "impending pathological fractures" of both femurs). Thus, for the CPT-4 codes, the predictive value positive would be 14 of 19 (74%).

By contrast, ICD-9-CM procedure codes for femoral fractures do not distinguish between those of the neck or shaft. Of the 34 patients reported in our letter with no diagnosis and with an ICD-9-CM procedure code, 14 patients had procedure codes that indicated a fracture of the femoral neck or shaft. Three patients had profiles that left unresolved the diagnosis, and their medical records were not available for review. Review of profiles or medical records of the remaining 11 patients showed the following: 7 patients with femoral shaft fractures; 0 with fractures of the femoral neck; 2 with fractures of the femoral shaft and neck; 1 with a pathological fracture; and 1 with a pelvic fracture. Thus, the predictive value positive would be 0 of 11 (0%) for fractures of the femoral neck alone and 2 of 11 (18%) for fractures involving both the neck and the shaft.

Consequently, we should amend the concluding statement in our letter to read that, based on this small study, inpatient hip fracture diagnosis appears to be a valid diagnosis for an epidemiologic study using Medicaid data, and that patients without inpatient diagnoses of hip fracture who have CPT-4 procedures specific for hip fracture have, in most instances, actual hip fractures. On the other hand, because ICD-9-CM procedure codes for femoral fractures do not allow one to distinguish between fractures of the shaft and neck, review of profiles or medical records is needed to validate fractures of the femoral neck when this diagnosis is missing. □

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The views expressed here are the authors' and not necessarily those of the Food and Drug Administration.

## Reference

1. Wysowski DK, Baum C. The validity of Medicaid diagnoses of hip fracture. *Am J Public Health.* 1993;83:770. Letter.