The urban epidemic of PCP abuse—laboratory and clinical studies

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A glass-capillary gas chromatography nitrogen detector (GC^2-N) method for phencyclidine (PCP, angel dust, wack, etc.) was developed which allows detection of as little as 1–5 pg/ml in the original sample of blood, urine, saliva, or CSF (PITTS *et al. J. Chromatog.* **193,** 157, 1980). The sensitivity and specificity of this method was established by GC-MS corroboration of known and unknown sample analysis. Other clinical methods are insensitive and give at least 90% false negatives with intoxication. The GC^2-N method was applied to various populations to assess the frequency of use of PCP, the persistence and clearance of PCP, and the relationship of PCP use to clinical manifestations. Of 150 consecutive patients admitted involuntarily to a public psychiatric hospital in Los Angeles, 78.5% had PCP in the admission blood sample (ANILINE *et al. Biol. Psychiat.,* in press, 1980). Forty-four per cent of 163 consecutive patients seen in a Los Angeles public psychiatric hospital emergency room had PCP in the admission blood sample; a record study revealed that all patients with PCP in blood had at least one evidence of toxic psychosis although only about 20% of the PCP-positive patients had the proper clinical diagnosis (40% were called schizophrenic and 40% affective disordered) (YAGO *et al. J. Clin. Psychiat.,* in press, 1980). A prospective clinical study of 200 consecutive patients admitted to Los Angeles public psychiatric beds revealed that 70% had PCB in blood, and all those positive for PCP had evidences of toxic psychosis and/or acute delirium to a systematized minimental-status examination; only a few of the patients manifested the nystagmus, hyperthermia, hypertension, seizures and other manifestations thought to be characteristic of PCP abuse (PITTS *et al.,* in preparation, 1980). Three of four consecutive major burn cases admitted from explosive fires had PCP in blood, although all denied making and using the drug (YAGO *et al., Biol. Psychiat.,* in press, 1980). A 65-yr-old psychotically depressed Chicana complained that she was being poisoned by first floor neighbours putting fumes into her bathroom from below; she was found to have PCP in blood from the fumes and azotropes from the illegal PCP lab in the flat beneath hers (ANILINE *et al., J. Clin. Psychiat.,* in press, 1980). Law enforcement personnel confiscating and handling PCP report clinical intoxication symptoms, and have PCP in blood samples; those not handling PCP have negative blood for PCP; one laboratory officer who had been away for more than 6 months on other duties without PCP contact (after several years' handling of the confiscated materials) had 78 ng/ml in blood which cleared completely into urine with acidification but recurred (presumably from lipid stores) 2 weeks after discontinuance of the NH_4Cl (PITTS *et al.,* to be published). Infants born of mothers who have used PCP, and wives and infant children of "dusters" have been found with PCB in blood; the former receive PCP from cord blood and the latter presumably have inhaled PCP smoke from the air in their households (PITTS *et al.,* to be published). Studies of dusters have revealed variable phenomena indicating multiple compartment transportation-storage of PCP in humans with persistence for periods of at least 6–12 months after last contact (PITTS *et al.,* to be published). There is a specific relationship between PCP in urine and urine pH; no matter what the blood level of PCP (up to 10 mg/ml in our current experience) there is no PCP in urine of pH 6.7–6.8 and above. Below pH 6.7, however, much or nearly all of blood PCP is rapidly excreted into urine (ANILINE *et al.,* to be published). Vast

quantities of PCP are stored in lipids of brain and other organs after PCP use and equilibration, and these stores can provide the source of continued low blood levels for extended periods. Gastric fluid (if acidic) and saliva levels of PCP are always higher than those of blood. Continued use of PCP over extended time can result in a toxic psychosis ("wack attack") in users who have apparently experienced only mild euphoria and dissociation with each prior usage. Alternatively, PCP can infrequently cause toxic psychosis with the first use due to large dosage and/or idiosyncracy. The half life of PCP in blood after initial dosage is 2–3 hr, and PCP blood levels do not always correlate with the degree or type of clinical manifestations. Then, too, clinical tolerance develops. For these (and other) reasons we have seen patients with "wack attacks" with only picogram/ml blood levels and persons with minimal symptoms with milligram/ml blood levels. Urine PCP is an unreliable method of diagnosis of PCP intoxications since patients with "wack attacks", or even PCP coma, often have alkaline PCP-negative urines. PCP is little metabolized, long stored, and has delayed psychiatric effects in man. It is not biodegraded and is manufactured in bulk (hundreds of kilos) in thousands of illicit sites in this country by unsophisticated persons using few or no precautions to prevent contamination of neighborhoods. The makers and users become extremely violent and dangerous to themselves and others. Chronic users (and non-users who have been exposed) manifest dulling of intellect and function that is semi-permanent or permanent.

PCP use is epidemic in urban areas, and its use is spreading to the very young (in elementary and junior high schools). Its use is also spreading to the middle and upper classes from the lower socioeconomic urban centers (and from certain ethnocultural groups to all American society). PCP represents one of the greatest public health threats to human society and deserves careful study so that effective treatments of intoxication and prevention of use-abuse can be developed.

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The urban epidemic of phencyclidine (PCP) use: clinical and laboratory evidence from a public psychiatric hospital emergency service.

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