40TH ANNIVERSARY OF THE FIRST REPORT ON METHADONE MAINTENANCE

Methadone maintenance the original

Now 40 years old, methadone maintenance began in a New York hospital as a small scale experiment. Even its originators doubted it could work when everything else had failed. The 'miraculous' transformation it brought about in the first patients can still be seen today.

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CURRENTLY AROUND 100,000 people are in methadone maintenance or allied treatments in the UK. Across the world, methadone is the major medical therapy for heroin dependence and the only therapeutic response clearly and consistently shown to reduce illicit opiate use.

This revolution in therapy was first brought to public attention 40 years ago when the *Journal of the American Medical Association* published research from Vincent Dole and Marie Nyswander of New York's Rockefeller Institute for Medical Research.[1] Their paper is not just a historical milestone but remains of contemporary significance – a reminder of how methadone maintenance was first and arguably should still be done.

The 'maintenance' element was not the innovation, rather it was the technical advance represented by methadone. As long ago as 1926, Britain's Rolleston committee had secured the option of indefinite doses of opiate-type drugs for the small band of mainly respectable, middle and upper class addicts.[2] Among these were some "capable of leading a fairly normal and useful life so long as they take a certain quantity, usually small, of their drug of addiction, but not otherwise." When withdrawal attempts had failed, meeting this need was accepted as legitimate medical practice. It was not treatment, but it was humane common sense.

a FINDINGS commentary

With acknowledgements to Dr Andrew Byrne of the Byrne Surgery in New South Wales who drew attention to the 40th anniversary of the first research paper on methadone maintenance and to its continuing significance. Full references on request.

Morphine and heroin were the drugs the committee was thinking of, and at first heroin prescribing continued to be the prime response to the (in relative terms) mass addiction problem of the '60s and '70s. But within a few years methadone had become the preferred vehicle for transforming Rolleston's individually-focused treatment into a collective response to the new breed of rather less respectable addicts – "beatniks (mainly from the upper socio-economic classes), and latterly ... members of the working class, many with a considerable record of juvenile delinquency."[3]

BACK TO THE FUTURE

In Britain and the USA, the expansion of methadone maintenance which followed the early research departed from the Rockefeller prototype, abandoning elements which British services are now being encouraged to revive in the attempt to also revive the early results. Professor Dole's team individualised dosing, carefully titrating the amount they prescribed to eliminate each patient's desire to supplement methadone with heroin and to render their usual heroin dose ineffective. At around 80–120mg a day, dose levels were way above those which became typical and which in Britain are now seen as having been sub-optimal.

The Rockefeller approach was also avowedly maintenance, analogous to long-term corrective (not curative) treatments for the metabolic diseases such as diabetes in which Professor Dole specialised. But the new British clinics often emphasised eventual reduction and withdrawal, though over a varying and often indeterminate time scale, a fudge which experts now want to see bifurcated into maintenance *or* detoxification, not both. Finally, the emphasis 40 years ago on intensive support and most of all on reintegration into work and education has been rediscovered by England's National Treatment Agency and is being emphasised in Scotland – with one important difference: Professor Dole's team saw their reintegrated patients as continuing on methadone, while in Britain today reintegration is seen as a way of ending treatment without unduly risking relapse.


DR MARIE NYSWANDER

Though it dates back 40 years, in these respects the Rockefeller prototype comes closer than many of today's programmes to what is now aspired to as good practice. Almost certainly this partly accounts for its startling success, but there may have been other reasons not so readily replicated today. Patients were selected to be relatively free of major mental illness and of dependence on other substances, and had volunteered for a new and exciting treatment conducted by motivated and well trained staff. Foremost among these was the late Dr Marie Nyswander, a psychiatrist with extensive experience in addiction treatment. Her recollections are a testimony to the degree to which these pioneers became involved with their patients.

'I WAITED EVERY NIGHT IN TOTAL TERROR'

The 'eureka' moment came when, a year before the first research was published, two of Dr Nyswander's patients were switched to methadone. They were among six admitted to Rockefeller's research ward in the search for a substitute drug which would prevent withdrawal from and craving for heroin and normalise physiological functioning. For convenience and to avoid perpetuating the risks entailed in injection, ideally it would be taken by mouth. Ideally, too, a single dose would hold patients over an entire day and the effects would come on and fade gently, avoiding heroin's multiple daily steep ascents into euphoria and descents into withdrawal.

Morphine and other short-acting opiate-type drugs were tried but, as with heroin, their roller-coaster cycles meant patients were nearly always feeling the effects of the previous dose or anxiously awaiting the next,[4] dominating their lives and impeding rehabilitation. Separately, Dr Nyswander and her colleague Mary Jeanne Kreek had both seen signs that methadone might fit the bill. It could be taken by mouth, prevented withdrawal, had been used for detoxification, and seemed longer-lasting and more even-paced than the alternatives.

Early in 1964 it was tried on the first two patients. Their behaviour changed dramatically: "They got up, got dressed, stopped obsessing about drugs and began going to night school", recalled Dr Nyswander.[4] Still, she remained unconvinced that methadone could counter the temptations on the streets, waiting "in total terror every night" for her charges to return to the ward. Temptations there had been in the form of people scoring drugs, but rather than join in, the pair "went and got an ice cream". The re-

Background text
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The first 22 patients

Table as originally presented in 1965.

Maintenance Therapy of Ex-Addicts With Methadone Hydrochloride, Summary of First 15 Months (February 1964 to May 1965)

			Status Before Admission to Program								Status Since Admission				
Ethnic	Age, years†		Previous Treatments‡												
Group*	FD	A	F	S	M	P	Arrests	Education	Best Job§	Military Service, Years ‖	Time on Program, Months	D¶	P#	HS**	Present Activity
E	16	22		3	3		6	8th grade	Truck driver		15	150	Ia	Cert	Preparing for college (Sept 1965)
E	18	31	3	3	2		8	1 year high school	Odd jobs (few months each)		15	180	Ia	Cert	Horticulture school
P	21	33	2		4		14	2 years high school	Office clerk		10	100	Ia	Cert	Employed (rehabilitation work)
E	20	30	1	2	3	1	1	Graduated high school	Store manager	A 3	10	180	Ia		Employed (usher/cashier in theater)
E	17	22			6		4	2 years high school	Shipping clerk		11	100	3		Employed (parking lot foreman)
E	21	25				12	1	2 years college	Musician		10	100	3		Employed intermittent (musician)
E	18	25			2		6	Graduated high school	Radio operator in military service	N 4	3	100	2		Employed (office work)
N	17	32	1		2		9	2 years high school	Clothes presser		1½	100	1	NS	Seeking employment
N	22	37		1	1		3	2 years high school	Truck driver	A 4	1½	80	1	NS	Seeking employment
P	15	23					1	2 years high school	Head usher	A 3	1½	90	2	Cert Army	Working as waiter
N	16	27	1		4		1	3 years high school	Stock clerk	A 5	1½	130	1	NS	
E	18	22	3		3	2	4	1 year college	Mason		1	100	1		Seeking employment
P	25	35	1		2		3	1 year high school	Paint sprayer		½	110	1		Employed
P	20	32	1		4		9	2 years high school	Supervisor of shipping department		1	100	1	NS	Employed
N	18	30	2				6	3 years high school	Shipping clerk	AF 4	¼	70	1	NS	Seeking employment
E	18	24			10		0	8th grade	Installing window srceens		3	115	2	NS	Employed
P	14	30					2	2 years high school	Office clerk	M 3	3	70	2	NS	Welfare (seeking employment)
P	19	25			16		10	2 years high school	Office clerk	AF 2½	3	110	2	NS	Employed (hospital record room)
E	17	19			1	1	0	Graduated high school	None		3	120	2		Vocational school (barber)
P	13	20				1	2	3 years high school	Stock boy		3	50	2	NS	Employed (hospital laundry)
E	19	26			2		8	2 years high school	Construction laborer		1½	100	2	NS	Seeking employment
N	14	30					2	8th grade	Shipping clerk	AF 4	1½	10	2	Cert	Leather goods company interpreter

*For comparison with other treatment series, patients classified into three groups: Western European ancestry (E), Puerto Rican and Cuban (F), and Negro (N). †Age first used diacetylmorphine (FD); age at admission (A). ‡Number of admissions to Federal Hospital—Lexington, Ky (F), state hospitals—Manhattan State, Central Islip (S), municipal hospital—Manhattan General, Metropolitan, Riverside (M), private clinics and groups, including Synanon (P). §All but two patients were employed at time of admission. Job indicated is best position ever held. ‖Time in Army (A), Navy (N), Marines (M), or Air Force (AF). ¶Dose methadone hydrochloride given orally, mg/day. #Phases of treatment: Ia—four patients, residents on metabolic ward of Rockefeller Institute; 1—new patients being stabilized on methadone therapy, they sleep in hospital but may leave during day for school, shopping, or job; 2—patients newly discharged, living at home or rooming house, needing social support; 3—ambulatory patients who are self-supporting. **High school equivalency status: If not a high school graduate, each patient was encouraged to enroll in night school to prepare for high school equivalency certificate. Those who have completed this course, passed examination, and received certificate are indicated by 'Cert'; those now in night school indicated by "NS".

maining four patients were switched to methadone with similar results. Eventually all six found jobs while maintained on doses ranging from 100 to 180mg a day.

Dr Nyswander's trepidation was typical of her caring and dedicated attitude. While other therapists and clinicians dismissed the addicts' stories as the ramblings of disturbed minds, she insisted that much could be learned by carefully listening, and encouraged the rest of her team do the same. Not surprisingly, her compassion and rapport with the patients were legendary.

By May of the following year Dole's team had documented methadone's impact on the 22 patients in the first research paper (◤ *table*, as originally presented), establishing that for most it was indeed the substitute they had been looking for – a once-a-day oral drug which kept craving and withdrawals at bay and which (in high enough doses) neutralised normal doses of heroin, enabling patients to get on with their lives.

MAINTENANCE FOR THE MASSES

While the team's relationships with their patients may have elevated outcomes, clearly this was not enough until the right drug was found, and it was the drug element which became the focus for later expansion to cater for the (wrongly) anticipated tide of addicts returning from Vietnam. By 1973, over 300 new US clinics had enrolled 80,000 patients.

Dr Nyswander should have been delighted, but instead came to see the hands-tied implementation of her and her husband's discovery as limiting methadone "to a fraction of its potential".[4] While the science was fairly clear about what should be done, it was rarely fully implemented. The stigma attached to addicts and to what some attacked as a collusive treatment meant the new clinics were over-regulated and punitive, encouraged withdrawal rather than maintenance, discharged non-compliant patients, capped doses, under-dosed, and failed to individualise treatment. Additionally, the hasty expansion had relied on poorly paid and poorly qualified staff who could not have been expected to match the experience and dedication of the pioneers.

Meantime, too, the economic climate had changed and patients more often had multiple needs while their reintegration was impeded by diminished access to housing and jobs. Miracle transformations were now less the norm than incomplete though still worthwhile reductions in crime and drug use and improvements in functioning.

REFERENCES

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