The Oldham Notebooks: A look back at one of the most remarkable scientific collaborations of the twentieth century

One of the most significant collaborations in the history of medical science between a clinician and a scientist was initiated in 1968 by the reproductive physiologist and experimental embryologist Robert Edwards from Cambridge University and the NHS consultant, obstetrician and gynaecologist Patrick Steptoe, who at the time was already a laparoscopy pioneer. Their teamwork led to the birth of the first in-vitro fertilization (IVF) baby, Louise Brown, in the summer of 1978, after years of intense studies, insistent and methodical modifications to protocols and numerous attempts at achieving an IVF pregnancy at the Oldham and District General Hospital (now the Royal Oldham Hospital) in a suburban town outside Manchester, UK.

Louise Brown’s birth was a transformational event that not only changed the course of infertility treatment for millions of couples, but also set in motion a revolution in human reproduction that continues to this day. A narrative of the collaboration that led to this historic birth emerged and has taken shape over the past thirty or so years, mostly based on information deduced from a handful of articles published by Edwards and Steptoe as well as from their book, *A Matter Of Life*, which was first published in 1980. However, the details of this story have not been clear. That is, until now. In 2010–2011, laboratory notebooks and some loose papers kept by Bob Edwards and his assistant Jean Purdy were found in an outbuilding at the farm where Edwards lived. Aware of the highly confidential nature of the names of patients contained within them, Ruth Edwards, Bob’s wife and scientific colleague, was uncertain what to do with them. Convincing that this material could provide an unprecedented new window into the early days of IVF, and given that some of the material related to the early days at Bourn Hall Clinic, she was encouraged by Martin Johnson (one of Bob Edwards’ first PhD students and an editor of *RBMO*online) to pass them in 2011 to the care of Kay Elder at Bourn Hall.

Elder and Johnson studied these notebooks, as well as the hundreds of loose pieces of paper, to assemble by August 2013 a preliminary record of the programme of clinical research undertaken between 1969 and 1978 by the IVF team. After Bob and Ruth Edwards’ deaths (in the spring and autumn respectively of 2013), a further notebook and loose sheets of notes were also found at the farm, which led to the data record being refined through several reiterative analyses until late in 2014. In the spring of 2014 all the many thousands of additional papers, found after Bob and Ruth Edwards’ deaths, had been catalogued by Jenny Joy (Bob’s daughter), and everything was passed to Churchill College archive for safe keeping. Bourn Hall likewise passed on the notebooks and loose papers later that year.

The research on this new information, combined with attempts at verification of their findings through interviews with eyewitnesses and extensive archival research, has produced an in-depth account of the Oldham days presented in a series of six excellent and informative papers published as a Symposium in the first issue of Reproductive BioMedicine and Society (RBMS). These papers describe in detail the documents, the actual patient treatment attempts, changes in protocols, and ethical quandaries of the team. They also reveal the critical role of the unassuming third collaborator, Jean Purdy, whose contributions – as it becomes clear – were largely underestimated in the past. Jean Purdy was not only a staunch supporter of Bob Edwards in many ways, she systematically annotated the experimental treatment and other data, prepared the culture media and equipment, coordinated the various strands of early IVF attempts, and ran

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the laboratories. What is perhaps surprising is her dedication
to the laboratory, rather than clinical, aspects of the work,
despite being a fully registered nurse by training.

Also of great interest is the revelation that a subset of the IVF
attempts were not previously mentioned in published articles.
While the reasons for this are unclear, the close accounting of
the cases and maintenance of the records is testimony to the
Oldham team’s integrity and commitment to historical accura-
cy. It is also true that differences in case counts can often be
explained by the varying definitions of what constitutes an
attempt or cycle of IVF. Similarly, several unreported biochem-
ical pregnancies are revealed; the lower sensitivity of HCG
assays in the 1970s may have led to an increased wariness in
reporting these apparently positive results.

The larger than expected number of unsuccessful cycles –
457 cycles involving 282 patients – prior to the first successful
human IVF raises the important question of how the ethical
dilemmas of early IVF were navigated. While many questions
cannot be answered, even with the benefit of additional
data, a consistent picture of painstaking efforts to ensure
patient volunteers were treated ethically emerges from
these accounts. This is especially true since, following the
1971 Medical Research Council’s decision not to fund Edwards’
and Steptoe’s work due to ethical and safety concerns about
patient volunteers, the issue of experimental procedures took
on added importance. The research conducted by Elder and
Johnson allows us to see more clearly than ever before how
these challenges were navigated.

Their analysis also reveals a previously unknown source of
the crucial philanthropic funding that supported the
development of IVF in Oldham and Cambridge. Lillian Lincoln
Howell (1921–2014), a pioneer of early American television,
contributed generous sums – estimated to be a minimum of
$95,000.00 – over the course of 10 years, from 1968 to 1978.
This sum, equivalent in today’s terms to nearly half a million
pounds, may well have made the difference between
successful IVF and a project that was abandoned due to
lack of financial support.

Edwards, Purdy and Steptoe were far ahead of their
time in predicting the importance of their discoveries to
future generations. The eloquent work of Elder and Johnson
unequivocally brings this message home to the readers of
RBMS.

More information about RBMS and its launch can be found
in a recent Editorial in Reproductive BioMedicine Online, volume
30, 561-562.