

A lifetime's creation

CREATE Fertility founder and medical director Professor Givi Nargund talks about its pioneering approach to IVF

Pregnant with opportunity

Lincoln International's Matt Lee looks at why fertility is a growing market for private equity

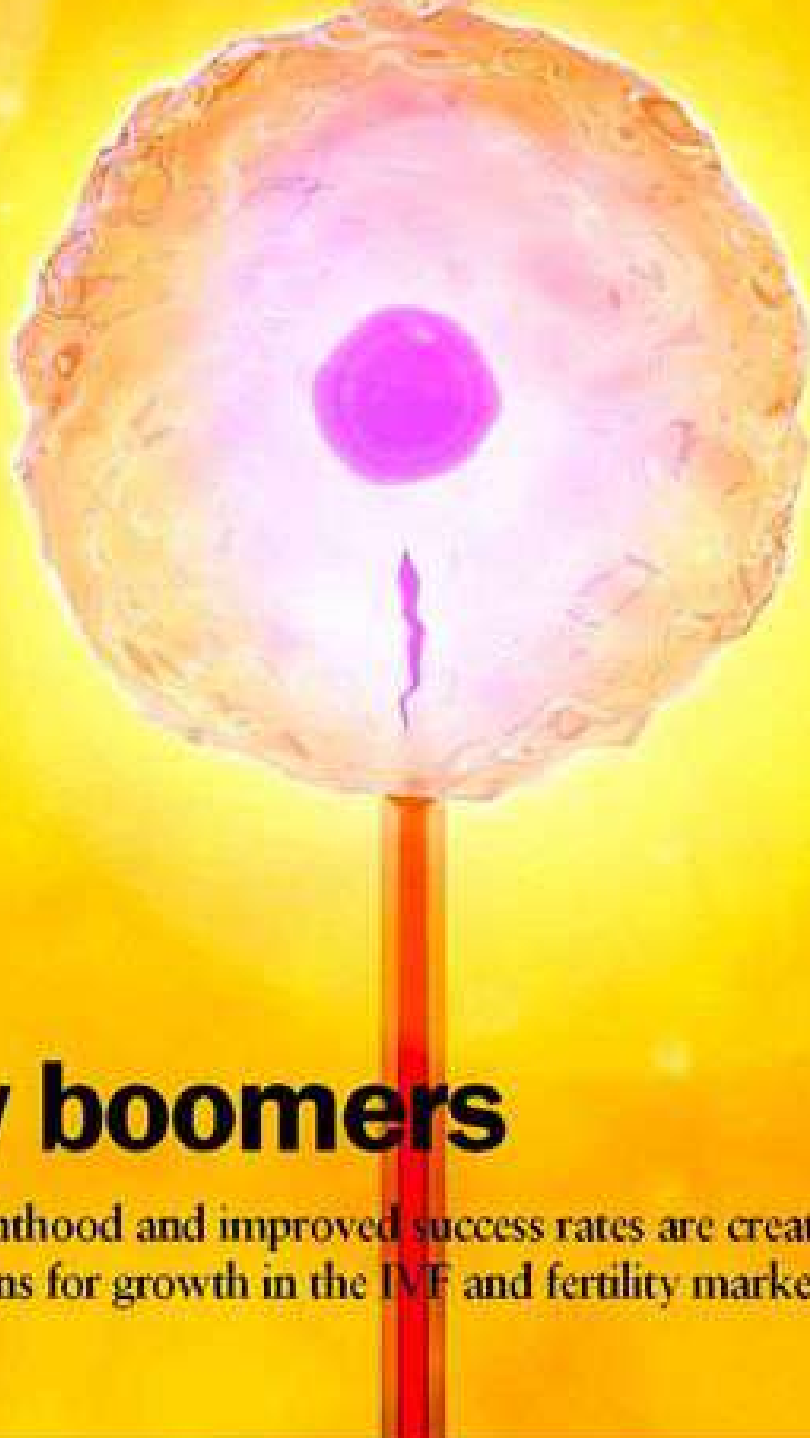
Safety first

Quality and safety top the agenda at the Private Acute Healthcare Conference

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Healthcare Markets

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In focus

Baby boomers

Delayed parenthood and improved success rates are creating ideal conditions for growth in the IVF and fertility market

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A combination of cultural, societal and financial factors is driving heightened demand for fertility treatment in the Middle East and with it, emerging opportunities for UK firms to explore new markets. **Marina Gilic**, engagement manager and **Leonid Shapiro**, managing partner, at consultancy firm Candesic discuss the key differences between IVF in the Middle East and in Europe and what this means for investors and operators alike

IVF has struck gold

The Middle East - a market full of promise



Think IVF is done the same way all over the world? Think again. IVF in the Middle East is tough despite huge demand underpinned by high clinical need and government funding. The question becomes: why have many European or American IVF players not ventured into the region? And what is the outlook for investors who want to try their hand in this geography?

Humans are beautifully diverse across geographies and some consider genetic differences as a key driver of low fertility rates. Whilst this is true, it is not because people who live in the Middle East have genes that somehow make

them less fertile; there are multiple social, cultural, and environmental effects which drive lower fertility rates in the Middle East.

Childbirth is a very important part of Middle Eastern culture and seen as a government priority to help expand citizen population. As such, some wealthy states generously fund IVF for their citizens. Whilst not ubiquitous, it does create pockets of large markets in the region, which are, or could be, targeted by operators and investors. In this article, we discuss the differences we found between IVF in Middle East and in Europe and what this means for investors and operators alike.

IVF oil rush

Candesic reviewed IVF markets in the region and found significant increases in IVF volumes in the majority of them. Underlying growth rates in the Middle East range from -3.4% in Kuwait to 24.9% in Oman, and 33.6% in Abu Dhabi, compared to growth of 3.2% in the UK and 2.8% in Germany. There are several drivers determining demand for IVF; infertility is twice as prevalent in the UAE (33%) than in the UK (14%).

Keeping it in the family

Consanguinity, marrying close rela-

‘Consanguinity is common in the UAE, being present in as much as 60% of marriages. Fertility problems are associated with children of consanguineous relationships, rather than with the parents themselves. For example, the daughter of such a marriage is likely to have the eggs of a 60 year old woman when aged 20. If this practice continues, all children would be completely infertile after several generations.’

Professor Human Fatemi, IVI Middle East

tives, is common in the region. Hassan Abu Saad's study shows a clear link between consanguineous marriage and children with intellectual and developmental disability (IDD). The biological explanation is the presence of autosomal recessive disorder.

Essentially, if both parents carry the same autosomal recessive gene, there is a higher chance of their child inheriting two abnormal genes and, therefore, suffering from disease. Many Middle Eastern countries have deep-rooted cultural customs normalising consanguineous marriage. Studies suggest that between 30% and 40% of marriages in Oman and the UAE are consanguineous, with even higher rates (over 50%) in Saudi Arabia and Kuwait, compared to less than 1% in the UK.

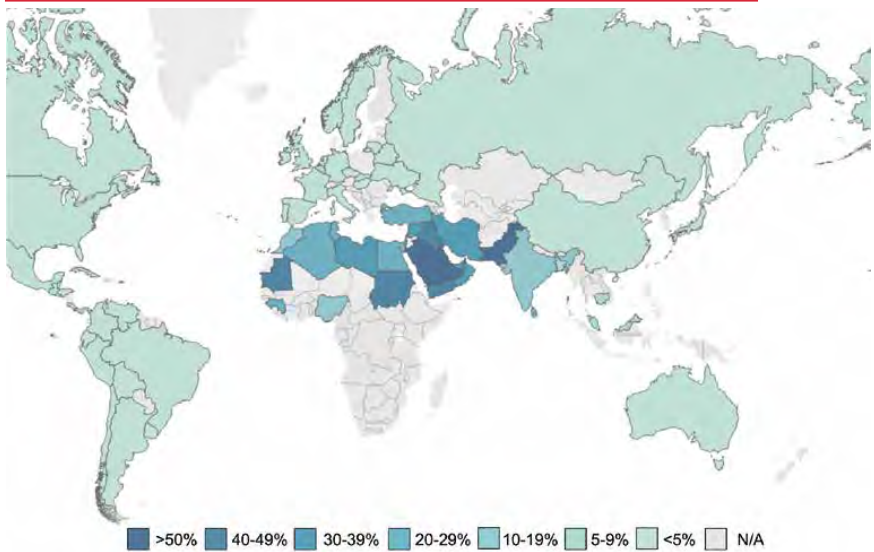
Therefore, the risk of IDD is higher and IVF allows for embryos to be tested for specific genetic diseases prior to being implanted: this is known as Preimplantation Genetic Screening or Diagnosis (PGS/PGD). Embryos are left to develop in-vitro for around five days, after which some cells are collected and tested, allowing parents to determine whether or not the embryo is free of genetic problems before starting the pregnancy. Couples concerned about how their consanguineous relationship might affect their children often elect to have PGD testing. Given the high consanguinity rates in the Middle East (Figure One), this is a significant demand driver for IVF services and is unlikely to change in the foreseeable future.

Disease of affluence

Obesity is another key driver of IVF demand in the Middle East - with known causal links to low sperm count in males and to hormonal imbalances and polycystic ovary syndrome in females. Obesity in either parent can cause fertility issues. It is associated with reduced ovulation rates, increased miscarriage rates, and poor response to ovarian stimulation during assisted conception. These factors result in increased time to conception, and lower implantation and pregnancy rates following both spontaneous and assisted conception.

According to the WHO, Kuwait is the 11th most obese country in the world, with an obesity rate of 37.9%, just above the US (ranked 12th) and followed by Jordan, Saudi Arabia, Qatar, Lebanon, and the UAE. Obesity reduces the probability

FIGURE ONE
PERCENTAGE OF TOTAL MARRIAGES THAT ARE CONSANGUINEOUS



SOURCES A.H.BITTLES 2009; CANDESCIC RESEARCH AND ANALYSIS

of couples achieving pregnancy both naturally and through fertility treatments.

Lack of sun in the Middle East?

Vitamin D deficiency is another potential driver. Approximately 90% of Emirati females have vitamin D deficiency, caused by lack of sun exposure, as women often cover themselves for cultural and religious reasons wearing the burka or hijab and stay indoors due to intense climatic heat.

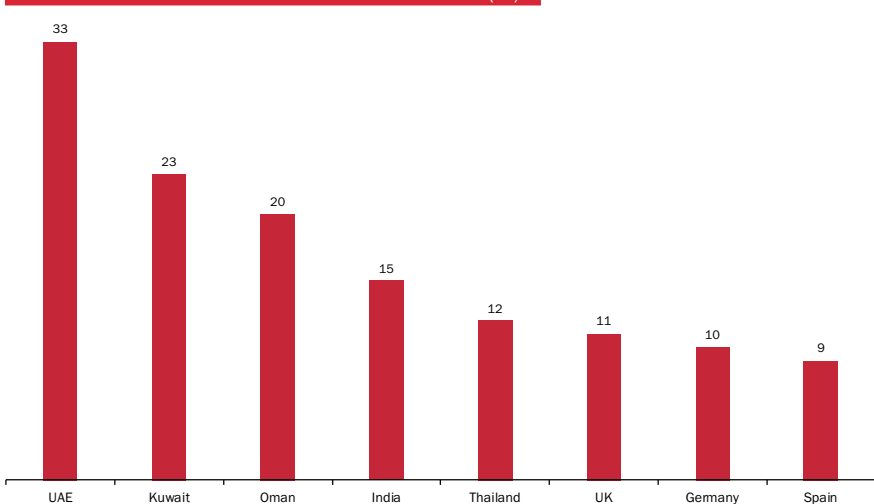
Chu et al. found that live births are

more likely to occur in women who had sufficient vitamin D compared to those who did not.

The unmentionable hits social media

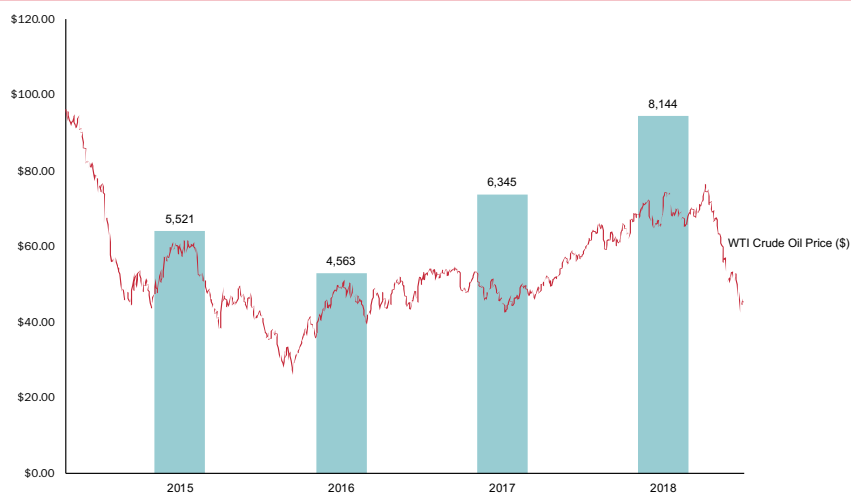
Improved awareness and social acceptance of fertility treatments is another demand driver. Increasing awareness of treatment options (partly due to better information dissemination via the Internet) is also contributing to more couples seeking treatment, although word-of-mouth remains the most common

CHART ONE
AVERAGE INFERTILITY RATE PER COUNTRY (%)



SOURCES HFEA; CANDESCIC INTERVIEWS

CHART TWO
NUMBER OF IVF CYCLES IN ABU DHABI PER YEAR AND WTI CRUDE OIL PRICES (\$)



SOURCES MACROTRENDS.NET; IVI MANAGEMENT; CANDESIC RESEARCH AND ANALYSIS

channel for couples when deciding on clinics in the UAE.

Brave new world

Technological and scientific progress has supported improving success rates over the last decade, which also drives demand.

Middle Eastern clinics often practise the ‘freeze-all’ strategy: by freezing all embryos at the blastocyst stage, they can then select only the best embryos for cultivation after day five. This leads to a success rate above 54% for most major clinics, which favourably compares with the average success rates for US and UK players of 46% and 22%, respectively. Customers view these results as better ‘value for money’ and are more likely to try the treatment.

Using IVF for gender selection (so called ‘family balancing’) is also legal in some GCC countries and is sought even by couples with no fertility issues.

Of note, Oman does not allow gender selection, meaning some couples travel and seek treatment in the UAE.

Overall, the growing complexity of

treatments (e.g., PGS/PGD and ICSI) is a market value driver, as complex treatments tend to be more expensive.

IVF and the economy

The availability of public funding varies significantly between countries, and even between Emirates within the UAE. The number of publicly funded IVF cycles varies. In Abu Dhabi, treatments are available for married couples in both private and public hospitals. Some countries, such as Kuwait, fund IVF only for certain types of treatment or under certain conditions.

Kuwaiti citizens can access up to five cycles, subject to the following eligibility criteria: funding is only available to Kuwaiti couples at two government hospitals; women must be under 43 years old and have fewer than three living children. In Oman, funding is only available to Ministry of Health and Armed Forces employees, who are reimbursed for IVF treatments. Government funding for IVF was scrapped in 2017 and is not expected to be reinstated.

Generous funding to encourage people

to have children is of crucial importance in Abu Dhabi. In 2016, the government attempted to reduce the number of reimbursed cycles from three to one per year, leading to a drop in the number of cycles from 5,521 in 2015 to 4,563 in 2016 (Chart Two). This prompted many complaints from citizens. Citizen complaints matter a lot in Abu Dhabi. Following public protest against co-payment, the government reinstated the reimbursement of three cycles per year later in 2016. Given the healthy economic environment in Abu Dhabi, experts do not expect another attempt to reduce government funding for IVF in the near future. By contrast, in economies like Sharjah and Dubai, where patients pay for their own IVF treatments, growth in cycles appears to be stagnant due to a lack of public funding.

Similar to Dubai, Oman, Kuwait, and the KSA are mostly cash markets and dependent on the number of wealthy people in the population. Even those who are eligible for public funding in these countries might have to wait months for an appointment. Thus, those with available funds are more likely to pay for private IVF treatment, especially if older and with decreasing chances of successful conception.

Patients’ perception of the value for money provided by private fertility treatments has been improving, despite the relatively high treatment costs. Given the challenging patient population in the Middle East, the treatment price for IVF ranges from \$6,750 to \$9,990 without medication, with three cycles usually being necessary (Chart Three). This is nearly double the price of equivalent treatment in the UK. With further payments for add-ons, such as PGS/PGD, the overall treatment may exceed \$50,000 in some complex cases.

New approaches are employed to achieve better success rates among Middle Eastern populations. These are important for not only achieving better outcomes given the local challenges, especially consanguinity, but also attracting patients to clinics. The growth in

‘In the EU (and also the US), there has been a huge drive to a single embryo transfer, which has been very successful in reducing unacceptable multiple pregnancies without compromising the rate of live birth. Additionally, the necessity to have independent, reliable and audited data based on live births per embryo transferred is crucial. Until this is available, neither the patient nor the profession has any transparency of practice.’

Professor Simon Fishel, Founder and President of CARE Fertility and CEO of ProFaM

‘Although IVF is now a highly globalized business, only providers who adapt to local nuances and embedded cultural norms are likely to succeed. The Middle East is a typical example, where clinical approaches need to be altered to tackle local challenges such as high levels of consanguinity and vitamin D deficiency.’

Professor Stephen Smith, Candesic expert

‘word-of-mouth’ referrals is contributing to increased confidence and acceptance of privately funded fertility treatments. The internet is another valuable channel for sourcing patients, especially those coming to the UAE from surrounding GCC countries for treatment. Candesic estimates that medical tourism in the UAE accounts for 10%, with potential for future growth given increasing numbers of patients coming from Africa and India.

Conclusion

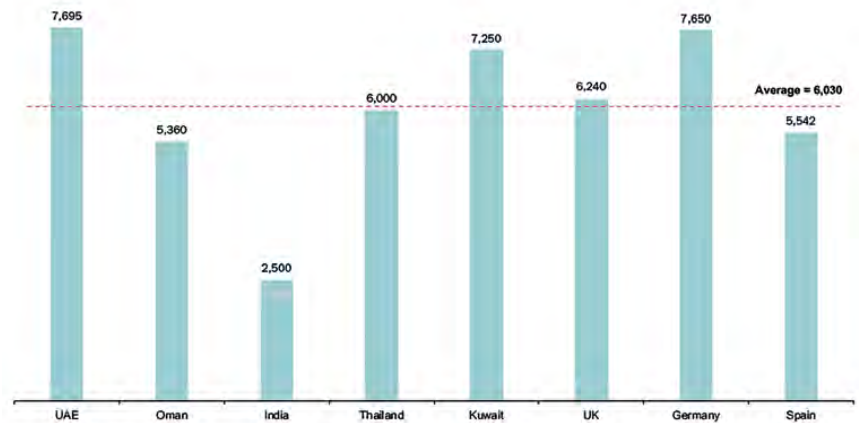
So how can investors and operators benefit from IVF in the Middle East? Clearly, government funding of IVF is a major driver of the market and investors should not only target countries with generous funding, but also look out for funding changes in currently unfunded countries. Improvements in techniques and acceptance of IVF combined with growing country wealth may drive governments to cover IVF for their citizens. Markets could open and grow quickly overnight.

Operators can also learn from IVF techniques practised in the Middle East. Much of the research into IVF is conducted on ‘straightforward’ cases with an attempt to maximise success rates. But difficult cases with multiple co-morbidities often require a more bespoke approach, and is somewhat of a black art. IVF practitioners in the Middle East have lots of experience with ‘complex’ cases and have developed their own techniques to maximise success, which could be shared with European operators.

For those investors looking to own an IVF provider in the Middle East, careful clinical, regulatory, and cultural differences need to be diligenced. While there are good operators, there are plenty of poor operators who claim to be good. The miracle of new life pulls on emotional heartstrings but also has existential ethical quandaries and areas where European investors should be careful treading on.

As IVF advances, operators are scrambling to up-sell new and ever more complex techniques. As a result, it is more important than ever to lift the lid on the entire process – operationally, medically,

CHART THREE
AVERAGE PRICE PER CYCLE PER COUNTRY (\$)



NOTES PRICES ARE EXCLUSIVE OF PGD AND PGS
SOURCES CANDESIC RESEARCH AND ANALYSIS

and ethically – before any investment thesis is agreed. However, the one thing everyone agrees on is that nothing is more beautiful than the creation of life itself.

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Candesic has extensive IVF experience in North America, Europe, Middle East, and Asia, as well as IVF experts and clinicians on our team.