Cervical cancer screening goes high tech in Africa

When technology, medical research and local knowledge converge, it provides an opportunity to beat one of the leading killers of African women.

“Cervical cancer is six times more prevalent in poor or developing countries as it is in the more developed regions of the world. There is a strong humanitarian imperative to address the issue of prevalence among African women, particularly in light of the vital social role women play in communities,” explains Professor Magnus Knebel von Doeberitz, medical director, Department of Applied Tumour Biology, Institute of Pathology, Heidelberg University Hospital.

Professor Magnus Knebel von Doeberitz, medical director, University of Heidelberg, Dr Omenge Orango’o, Moi University Nairobi and Dr Gilbert Saggia, SAP Africa’s managing director: East Africa

The World Health Organisation (WHO) conservatively estimates that HPV infections cause 68,000 cases of cervical cancer in African women every year, although the lack of available data means this figure is likely much higher. “Cervical cancer is the second most prevalent cancer among Kenyan women, and the most lethal. Our immediate priority with this solution was to reduce the mortality rate resulting from what is an entirely preventable cause of cancer by making effective screening widely available, and improving patient tracking,” he explains.

Cultural knowledge is critical

The current screening method, called emerging technologies in cervical cancer screening (ETiCCS), was developed by the Heidelberg University Hospital. The SAP Design and Co-Innovation Centre partnered with von Knebel Doeberitz to supply the technology platform required to implement it at scale. In addition, Dr Omenge Orango’o of Moi University in Nairobi provided on-the-ground insights and support.

“It is critical to have an accurate and realistic view of actual on-the-ground conditions to ensure any solutions developed in a laboratory are effective when implemented in the field. Dr Omenge’s insights into challenges relating to infrastructure and culture were invaluable during our test implementation,” says von Knebel Doeberitz.

Offline mobile solution

In many lower-income countries, cancer screening is virtually non-existent, mainly due to logistical reasons. “While testing can be conducted in a centralised laboratory, the challenge is to ensure effective tracking and longer-term care of women who return a positive diagnosis. We developed a biomarker that we used in our cervical cancer diagnosis, but the key

missing element was an information transmission system that could provide access to accurate patient records no matter the location. Our partners at SAP then provided an offline mobile solution which can be connected twice per day to the SAP cloud platform as the backbone for our information handling system.

The data information handling system is critical to the success of the ETiCCS solution. Effective diagnosis and treatment of cervical cancer requires the availability of patient information at any time to ensure at-risk women can receive the services and support they need. These linkages of care are often missing from developing countries, so using SAP's cloud is an opportunity to integrate all information real-time in one place and overcoming local infrastructure limitations.

"The ETiCCS solution has been successfully tested in a pilot study in Kenya. The model will now be replicated in other countries. The solution is built on design thinking principles, and can be replicated in other countries fairly easily. There are two key elements to this: one is a keen understanding of the actual on-the-ground conditions in each country or region, which we gain by partnering with local experts. Secondly, data handling is crucial. With these elements in place, we can make a huge impact not only on preventing cervical cancer, but addressing other illnesses and diseases affecting the world's vulnerable populations," says von Knebel Doeberitz.