

## McINDOE'S GUINEA PIG CLUB THE GOOD, THE BAD AND THE UGLY<sup>a</sup>

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### Abstract

*Sir Archibald Hector McIndoe (1900 – 1960) was a pioneer in the field of facial reconstructive surgery during the Second World War. To this day, his name can be frequently heard in operating theatres as many instruments were devised by him. In addition to inventing new techniques and instruments, McIndoe was also famous for establishing the Guinea Pig Club in June 1941 in East Grinstead, Sussex. Initially set up as a drinking club for his aircrew patients and the doctors working at Queen Victoria Hospital, it quickly became a rehabilitation community where patients suffering severe burn injuries could integrate back to civilian life in an informal and non-judgmental setting. He is reputed to have only recruited “pretty” nurses to work on his wards. Reports show that some of them went on to marry the Guinea Pigs, but recent research has uncovered reports that not all these nurses who attended members of the Guinea Pig Club have happy memories of their time at East Grinstead. Some left within weeks of starting, but most of them stayed on through a sense of duty to the war effort. They described how McIndoe turned a blind eye to all of this as he thought that his patients had already suffered enough. McIndoe died in April 1960, but his legacy lives on in the lives of hundreds of soldiers and airmen who were given a second chance in life. Many of them continued to travel across the world to attend the annual reunion at East Grinstead until their last official meeting, which was held in 2007.*

### Introduction

Sir Archibald Hector McIndoe (Figure 1) was a pioneering surgeon, primarily in the field of reconstructive plastic and maxillofacial surgery. Some will remember him for his pedicled flaps or his revolutionary treatment for burns; some keep his legacy alive by daily use of various surgical instruments which still bear his name, such as the McIndoe dissecting scissors, but the “Maestro” is mostly remembered for his famous Guinea Pig Club and his tireless efforts in the rehabilitation of mutilated wounded airmen during World War II.

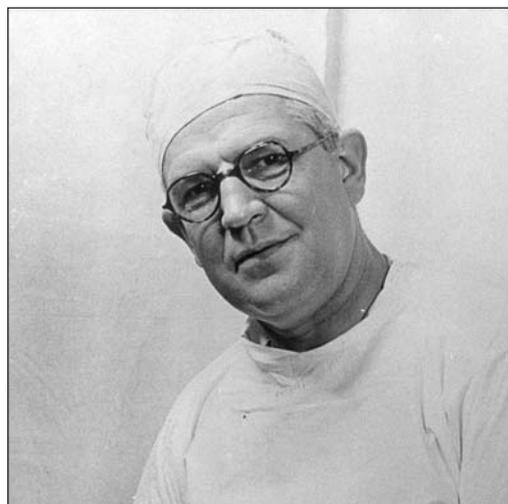


Figure 1. Sir Archibald Hector McIndoe

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The Guinea Pig Club were McIndoe's patients who were young airmen and bomber crew who had survived aeroplane crashes but suffered life-changing burn injuries. The Club served not only as a socialising group for men who had undergone years of various reconstructive operations, needing prolonged hospital stay, but it also provided a peer sup-

<sup>a</sup> This title was first presented to the British Society of the History of ENT at the Royal Society of Medicine on 30th November 2017 by Anastasha Herman. “The Good, the Bad and the Ugly” was the name of a 1966 Italian epic Spaghetti Western film directed by Sergio Leone.

port network which proved vital in their recovery. In an era decades before the advent of the so-called biopsychosocial approach to patient management, McIndoe promoted the importance of their successful reintegration back to civilian life after the War. He firmly believed that a surgeon *'should always remember that eventually any real and lasting satisfaction which this kind of work affords is derived from his own interest in what the patient does with what the surgeon achieves, rather than from the purely technical aspect of the repair'*.

Looking through past journal articles and media coverage about McIndoe and his Guinea Pig Club, one can easily find high commendations made by fellow surgeons, Guinea Pig club members and the general public towards his truly innovative and unconventional work. Little can be found, however, about the experiences of the other side of McIndoe's treatment front line – the nursing staff. What was it like to be part of a revolutionary surgical team and nurse these wounded disfigured soldiers back to health?

### Beginnings

McIndoe was born on 4 May 1900 in Dunedin, New Zealand and graduated from Otago Medical School in 1923. As a bright young doctor, he aspired to become an abdominal surgeon. After winning the first New Zealand fellowship to study pathology at the Mayo Clinic (United States of America) in 1924, he became a surgical assistant the following year and started publishing articles on hepatic and splenic disease. His talent particularly caught the attention of Sir Berkeley Moynihan, a notable British abdominal surgeon, during one of his visits to the Mayo clinic. As the President of the Royal College of Surgeons of England at the time, he persuaded McIndoe to move to London, implying that he would be given a post as professor of surgery <sup>(1)</sup>

He was initially disillusioned when the family arrived in Liverpool in 1931. He went to London and realised that Lord Moynihan had misled him and was quite dismissive. He told him he had no job for him. He evidently told him, "Bless my soul, the hospital isn't even built yet, I can hardly give you a job if the place doesn't exist can I?"<sup>(2)</sup> "and sent him away telling him rather indifferently that "Something good will turn up."

McIndoe left Moynihan's rooms in a disconsolate mood and went to London Zoo, where he sat and brooded as to what to do next. It was there that he pulled out of his pocket a letter from his mother in New Zealand, suggesting that he should look up his older cousin (another Kiwi), Sir Harold Delf Gillies. Gillies had established his career there as an ear, nose and throat surgeon with outstanding contributions to facial plastic surgery during World War I, for which had been knighted (KCBE)<sup>b</sup>. Harold welcomed his younger cousin, Archie and happily gave him a job as his assistant. This partnership was to prove one of the greatest surgical partnerships of the 20th century. After working as a clinical assistant to Gillies at St Bartholomew Hospital London, McIndoe became attracted to plastic surgery as a career and went on to take his Fellowship of the Royal College of Surgeons in 1932. A year following his appointment as Consultant Plastic Surgeon to the Royal Air Force (RAF) in 1938, he established the Centre for Plastic and Jaw Surgery at Queen Victoria Hospital, East Grinstead (Figure 2). When the World War II broke, this became one of the few specialised RAF Burns Units, where he would treat severely wounded and disfigured RAF soldiers <sup>(3)</sup>.

### Groundbreaking Improvements in Burns Surgery

The sudden unprecedented number of wounded airmen posed a new challenge for McIndoe and his team at East Grinstead. Recent technological advancements in aircraft manufacture led to a rise in the numbers of fighter planes used, which subsequently changed the types of injuries compared to those sustained in World War I.

Thousands of surviving RAF pilots sustained severe full thickness burns with approximately two thirds of them suffering burns in functional areas such as the hands and face. Around 600 of the more severe facial burns were transferred to Queen Victoria Hospital. In one of his last lectures in 1958, McIndoe said that his main aim was to *'make a face which does not excite pity or horror. By*

<sup>b</sup> *The Most Excellent Order of the British Empire is a British order of chivalry. Appointments are awarded to an individual as an honour by the Queen, rewarding contributions to the arts and sciences, work with charitable and welfare organisations, and public service outside the civil service. Gillies was granted Commander of the British Empire in 1920 and this was upgraded to Knight Commander in 1930.*



Figure 2. Queen Victoria Hospital, East Grinstead in 1939

*so doing, we can restore a lost soul to normal living.*<sup>(4)</sup>

The conventional treatments for burns during the 1930s had been non-surgical and mainly involved the application of tannic acid, which acted as a coagulant to protect the wound by reducing exudation<sup>(5)</sup>. However, tannic acid had side effects, including impaired healing, which over time caused worse scarring/keloids and reduced function of vital areas such as eyelids, fingers and toes. In severe cases, contraction of the eyelids following tannic acid application led to corneal ulceration and blindness. The exposed area was not only unviable as a potential grafting site, but the remaining eschar was very susceptible to infection, which could lead to gangrene and death from sepsis. This was particularly important for McIndoe, whose patients would present some weeks after their initial injury. His suspicions were confirmed when a young Australian fighter pilot called Richard Hillary was wheeled into McIndoe's surgery, completely covered in tannic acid by the medics at the Field Hospital. The acid had coagulated his burned skin and he could not move his fingers and toes. His eyelids were so stiff and immobile that it looked as if he would be permanently blind. McIndoe and his nurses were successful in removing the solution with lukewarm brine and the young pilot was eventually able to see again<sup>(6)</sup>. But this incident had so shocked McIndoe that he began writing letters, firstly to his superiors in London and then to the

War Wounds Committee demanding that tannic acid no longer be used as a treatment. But now he needed to find a suitable substitute.

A keen observer, McIndoe noticed how pilots that landed into the sea presented with less extensive burns, which also healed faster than those who parachuted onto land. This became the foundation of his use of saline baths (Figure 3). It is a legacy of McIndoe's brilliance that his saline 'burns tank' is still being used as a treatment. He also promoted regular mechanical cleansing of eschar and debris (Figure 4) and the application of topical sulphonamide powder,<sup>d</sup> which had been developed by the Germans just before the war in 1935<sup>(7)</sup>.

Another notable contribution was his extensive use and development of the tubed pedicle flap (Figures 5 and 6) as one of his facial reconstruction techniques<sup>(8)</sup>. The tubed pedicle utilised a vascularised flap of skin and underlying soft tissue raised from neighbouring viable body parts to replace a large area of tissue loss. Initially introduced to this technique whilst working at St Bartholomew

<sup>c</sup> Battle of Britain pilot, RAF Flight Lieutenant Richard Hillary, whose book 'The Last Enemy' documented his experiences. Sadly, he was tragically killed in a flying accident while carrying out a night training exercise in his Blenheim Bomber in January 1943.

<sup>d</sup> Prontosil, as Bayer named the new drug, preceded penicillin and was the first medicine ever discovered that could effectively treat a range of bacterial infections. It was effective against streptococcal infections, including septicaemia, puerperal fever and erysipelas.



Figure 3. Saline baths were especially built made of ebonite which was saline proof. The saline levels and temperature were controlled electronically by a remote.



Figure 4. A patient was covered loose moist dressings soaked in petroleum jelly as this aided cleaning and regular dressings change, which was vital in burns recovery.



Figure 5. (and 6, p.287) Examples of tubed pedicles flap.

Hospital under the tutelage of Gillies (who had used it during World War I), McIndoe improved and perfected the technique by staging. He called this his 'waltzing tubed pedicles' and operated in multiple stages by using, for example, the wrist as an intermediate host in raising an abdominal flap to cover facial tissue loss. The Guinea Pig Club with its large numbers of patients who attended enthusiastically for follow-up, provided McIndoe with robust evidence of both low infection rates and superior cosmetic results using his combination of skin grafts and pedicled flaps.

Although microvascular anastomosis and the use of microsurgical free flaps have mainly superseded the tubed pedicle flap, McIndoe's forehead flap is still useful following nasal skin cancer excision. The excellent results with the forehead flap as a rhinoplasty technique became known as a 'McIndoe Nose' and after the War when he returned to private practice, he specialised in facial cosmetic surgery.

### The Guinea Pig Club

McIndoe vividly recalled his very first patient with severe facial burns. He took all of three years to complete the treatment and obtained acceptable surgical outcomes for this man. What he could never forget however was what happened to that patient next. When McIndoe learned that he had gone on to spend a total of 8 years in prison for committing various crimes, he was forced to reflect on his overall result and as a result, he made it his personal mission never to inflict a similar future on any of his future patients <sup>(9)</sup>.

McIndoe began by examining the ward conditions in which his patients were cared for post-operatively. He started making radical changes. He tried to create a more informal and lively atmosphere in



Figure 6



Figure 7. McIndoe frequently joined his Guinea Pigs in a sing along that he even asked the hospital to provide a piano for Ward 3 of Queen Victoria Hospital.



Figure 8. Silver lapel brooch showing membership of the exclusive Guinea Pig Club.

which patients could feel at home and relaxed. His overall aim was to get them to live as normal a life as possible. Ward 3 of Queen Victoria Hospital had its walls covered with the patients' personal photographs. As a complete innovation, there were also barrels of pale ale<sup>(10)</sup>, vases of flowers and background light music playing on gramophones; it is even said that nurses enjoyed dancing to Glenn Miller with their patients on the ward<sup>(11)</sup> (Figure 7). He encouraged them to wear their military uniforms, which he believed

would improve morale and restore their confidence.

The "Guinea Pig Club" was set up in June 1941 as an in-patient hospital drinking club by 39 of the wounded airmen themselves. The name alluded to the experimental nature of McIndoe's operative techniques. They were 'his guinea pigs.' They had originally called themselves the 'Maxillonian Club' in allusion to the Maxillofacial Unit, but "Guinea Pigs" was clearly a much better name. It was quickly endorsed by the 'Maestro' (Archibald McIndoe) and became the foundation for a strong camaraderie and mutual support among medical staff, patients and their families.

Eligibility for membership (Figure 8) was patients ("burned, scalded or fried") who had undergone two or more surgical procedures at East Grinstead. By the end of the war the club had 649 members. They also admitted the surgeons and anaesthetists who had worked on them. In 2016, when the Club celebrated its 75th anniversary, only 17 were still alive, the youngest being 88 years old and the remainder in their nineties. In May 2018, this had dropped to six<sup>(12)</sup>.

In order to further support his patient's welfare, McIndoe took an interest in ensuring that his patients would have a life to look forward to after hospital. In addition to promoting regular occupational therapy training (Figures 9 and 10), he reached out to people living in the nearby town, East Grinstead. He went down to the local pub and told the regulars about the work going on at Queen Victoria Hospital and the appearance of his patients. "They must not be treated or even looked at as abnormal".

"Talk to them" he said and "take them into your homes."<sup>(13)</sup> His charm and persuasive manner convinced local residents to welcome patients into their houses and invite them along to regular community activities (Figures 11, 12, and 13). By doing this, the patients felt they had integrated back into normal society. East Grinstead has ever since been known as 'the town that did not stare'. One of the 'guinea pigs' Alan Morgan (Figures 14 and 15), still lauded McIndoe decades later as he remembered how McIndoe 'made (him) feel normal



Figures 9. (and 10) Occupational therapy was a revolutionary part of McIndoe's rehabilitation programme for support in performing activities of daily living.

again.' He was idolised by patients and nurses. When one of his nurses asked him how he did what he did, he replied, "I don't know, I think God came down my right arm and helped me."

McIndoe believed his patients had gone through so much adversity that anything with the potential to ease their journey should be put in place. McIndoe even brought in showgirls to visit them from London to convince them that they could still talk to pretty girls<sup>(14)</sup>. The nurses certainly needed not to be squeamish, and it is said that he made it a positive point to employ pretty ones, some of whom mentioned that McIndoe would let these wounded airmen get away with forward and coercive behaviour as he thought this would help restore their dignity and confidence. During and after the War, the British civilian population displayed intense patriotism for their country, and solidarity



Figure 11. (and 12) Nurses of Ward 3 frequently go with the Guinea Pigs socially to the town centre.

with its wounded soldiers, regarding them as heroes deserving of respect and special consideration.

### Nurses Dilemmas

When a country goes to war, other essential front line personnel are those young women who volunteer as nurses. During the last century they were sometimes as young as fifteen. Their country was at war and helping wounded soldiers was seen as honourable for a girl as fighting the enemy was for a man. The prudish sexual mores of the times however, meant that these young lasses were ill-prepared for the nursing of naked adult males.

During the Great War, Army nurses were called "*the roses of no-man's land*,"<sup>e</sup> which underlines the perceived stereotypical gender norms of the day. Indeed contemporary military propaganda posters proclaimed that "Beauty on Duty has a Duty to Beauty."<sup>(15)</sup> As recently as 1978 the Royal Army Medical College taught its officers that "The value to the morale of an injured soldier of female nurses as near the front line as possible cannot be overemphasised."<sup>(16)</sup> The USA forces had a similar outlook during the Vietnam

<sup>e</sup> Lyn Macdonald wrote an excellent book about WW1 nurses with this title in 1980 (*The Roses of No-man's Land*. Michael Joseph, London ISBN: 9780241952405 )



Figure 13. Matron Hall (dressed in black, centre) was in charge of the nursing staff providing care for the Guinea Pigs.



Figures 14. (and 15) Alan Morgan (b. 1923). McIndoe created stumps on his hands after he lost eight fingers to frostbite injury during his airplane crash.

(Second Indochina) War (1955-1975) and their CIC, General Westmoreland is quoted as saying that “when soldiers came to hospitals, he wanted them to see nurses wearing white uniforms and lipstick, with their hair styled,”<sup>(17)</sup>

Much has been written about society’s changing morals during times of total war<sup>(18)</sup>. It has been said that “Distinctions between what is right and wrong change pro-



Figure 16. A nurse was changing the head dressing of a Guinea Pig.

foundly in wartime. Not only the individuals who are directly involved in combat, but the whole society undergoes radical morality changes.”<sup>(19)</sup>

What of the Nurses who tended to the needs of the Guinea Pigs? (Figure 16)

A Canadian nurse, Marion Mortimer paints a rosy picture of halcyon days. She tells stories of going to shows in London on the bus and of going to the races. She says she certainly went out with them. “We had a lovely life, It was such a wonderful feeling in the hospital. I loved every minute of it there. The men had their beer there and music and singing. I can’t tell you how different it was from ordinary hospital life. It was a wonderful atmosphere.”<sup>(20)</sup> It was not unusual for the nurses to marry the Guinea Pigs (21). Bob Marchant, the club’s Hon. Secretary in post war years says that Some of the wives left the men because they couldn’t stomach the disfigurement, but some of the men married the nurses from the hospital as they got used to seeing past the injuries.”<sup>(22)</sup>

Sadly not all the nurses who worked for Archibald McIndoe share Marion Morti-

mer's bright and cheerful memories of their time on Ward 3. In 2015, an Australian journalist, who had been born and grown up in East Grinstead just after the Second World War published a fascinating book, dedicated as she put it to the women who nursed, loved, married and danced with the Guinea Pigs. The book is called *In Love and War – Nursing Heroes* <sup>(23)</sup>. As a child, the grotesque burnt faces of these airmen had filled Elizabeth Byrski's nightmares. Her family then emigrated to the Antipodes but in her late sixties, she came home to make peace with her memories and to speak not only with the Guinea Pigs – but more especially with the nurses who had played such a vital and unorthodox role in their treatment, and occasionally as she found, at a significant personal cost.

Her sensitively written book tells of some nurses, like Bridget from Dublin who loved their work at the Victoria Hospital; they seemed to be the majority. However it also tells of a few like Joyce from the East End (of London) who did not enjoy their introduction to nursing. "I don't have happy memories of East Grinstead," she says. "I was so ignorant that it scared me. I knew it would be hard work, and the patients would have nasty injuries, but I didn't expect... Imagine the shock, I'd never seen a penis and in my first week I had to change a dressing on one. So I didn't only see my first penis but by the time I'd finished with it I'd seen my first erect one! I can laugh about it now and all nurses have to get used to that sort of thing." <sup>(24)</sup> Another nurse from (Guinea Pig) Ward 3 says that "... some women were coerced into things they didn't want to do. But it was probably what saved those young men's lives, made them want to live. It's an interesting moral dilemma isn't it?" This was not reported as bullying (or as it is now termed sexual harassment). This did not happen in the 1940s. Some left shortly after starting, but most of them stayed on.

It was said that McIndoe "kept beer on the ward and recruited the prettiest nurses" <sup>(25)</sup> to improve the morale and life style of patients destined for long, painful post-operative care. The whole sexual dynamic of working in a hospital has changed fun-

damentally since then (26). Then it was definitely a Patriarchy. As one East Grinstead nurse remembers.

"Quite a lot of sex went on<sup>f</sup> - and it was always in the air, if you know what I mean. So every day, going to work, you knew you'd not only have to do your job, but you'd have to cope with that. There was always someone trying to coax you into getting friendly or more than that... and some of them ... they'd laugh at you and call you snooty or other things. I was ashamed of being so ignorant and ashamed as though it was my fault. I didn't know what to do. And you couldn't complain because Mr McIndoe, he thought it was good for them."<sup>(27)</sup>

The lively high-spirited atmosphere and the general consensus of supporting the Guinea Pigs' recovery presented a new challenge for these young girls – a challenge perhaps overshadowed by the overwhelming horror of the war itself. As another nurse explained: "Back then the war was the excuse and explanation for everything. You did what you could for the war effort. I didn't know how to stand up for myself. And the men, they'd be acting familiar, like you were their girlfriend. It was very hard on us. You were being pushed into putting up with things you wouldn't put up with from anyone else, and that was really embarrassing, and... well ... not nice. The language and the jokes, the way they talked to you."

One Canadian nurse however tells an amusing tale of being pinched by a patient, "When I turned to go, he pinched me. Tears came to my eyes. It was a dreadful feeling. Turning around, I lost my cool and I said, 'Next time you do that, I'll punch you in the nose.' 'I ain't got one,' he said, and of course, he hadn't. 'I can wait, ' I said!" Evidently they did meet some forty years later at a reunion. He had had a nose now for years and they laughed together about the incident <sup>(28)</sup>.

The majority of nursing staff, however, preferred not to discuss such matters, and rather to focus on the positive aspects. Everyone was aware that McIndoe was in charge. He was personally devoted to the psychosocial well-being of his patients (most of them presumably  $\alpha$ -males), and did whatever he could to foster it. Some nurses would recall how the only alternative to acquiescence in the situation was to leave the hospital.

<sup>f</sup> Evidently a lot of sex went on inside British (and South African) hospitals right up to the end of the twentieth century. This is quite fully explored in *There's a Nasty Cancer in the Health Service* (Riddington Young, 2015).

How many did leave? We just do not know. Neither do we know exactly how many married or had loving relationships.

Some of the nurses interviewed displayed feelings of guilt, or reluctance to expose heroes to the moralising criticism of the international media.

“I’ve never talked about it, it seems disloyal to the men. A lot of them were lovely, I don’t want to say anything that ... makes them sound bad.”

“I didn’t mind it. I loved those boys. Some of the younger girls used to get a bit upset. But they were only boys, after all, and they’d been through something terrible. I used to tell the girls, ‘You be thankful you’re here and not stuck in a burning plane, make allowances but stand up for yourself. It’s the least you can do to give that bit extra for them, for the war.’”

Linen cupboards on hospital wards, (which still had bolts fitted on the inside of the door in the 1980s) would seem to be a favourite rendezvous for sexual assignations. “I’ll admit to a few rendezvous in the linen room myself, but it was only fun and you went along with it. Things were different; we were all out for the war and for getting these boys better. I don’t know why people make so much of it ... complaining. You did your bit and then a bit more.”

### Conclusion

The importance of psychosocial support during the rehabilitation period is well recognised in today’s medical practice and is part of the gold standard approach to patient management following any extensive life-changing surgery.

The old adage *Tempora mutant et nos mutamur in illis* (Times change and we are changed with them) is attributed to Emperor Lothar over a thousand years ago in the ninth century<sup>§</sup>. Ethics change with the times and certainly alter profoundly during wartime. It would be not only arrogant but inappropriate to take facts out of their historical

context and make moral judgements based on the so-called ‘politically correct’ values of today.

McIndoe was undoubtedly a pioneer – surgeon, social worker, psychologist, patient advocate. His tireless efforts in championing a holistic recovery for his patients was inspirational – but, as with any pioneer, part of the price was paid by others.

### Acknowledgement

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<sup>§</sup> *Lothar I (795 – 29 September 855) was Holy Roman Emperor, Governor of Bavaria and King of Italy and Middle Francia. He was the eldest son of the Carolingian emperor Louis the Pious. The usual version of the saying is given above, but Lothar’s original ninth century is probably Omnia mutantur, nos et mutamur in illis (Everything changes and we change with them).*

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