

THE MEDICAL SERVICES

**HARD FOUGHT: AUSTRALIA IN THE
MEDITERRANEAN THEATRE
1940-1945**

BRETT COURTENAY

ORTHOPAEDIC SURGEON ST VINCENTS SYDNEY

COLONEL (RTD) RAAMC

OUTLINE

- **Preparation leading up to deployment**
- **Structure of service provision**
- **Outstanding Individuals Medical and Nursing**
- **Medical Advances accelerated by WW2**

HEALTH GROUPS INVOLVED

- Medical Corps which included Dental in 1940 and medics
- Australian Army Nursing Service
- RAAF
- RAN
- Australian Army Medical Women's Service

LIST OF RESERVE OFFICERS IN AAMC - 1938

Officers		Military District					Total
	1 st	2 nd	3 rd	4 th	5 th	6 th	
Administrative Medical Officers	5	4	17	3	4		33
Consultants	3	8	10	3			24
Hospital Executive	5	17	6	8	3	2	41
Hospital Staff	21	140	53	36	10	8	268
Specialists	31	72	98	22	21	8	252
Field Medical Units	65	186	156	41	57	12	517
Dental	25	85	75	14	12	15	26
Pharmaceutical	4	19	18	3	8	4	56
Science			1	1			2
Massage			6	1			7
Quartermasters	6	7	13	5	3	2	36
Totals	165	538	453	137	118	51	1462

Northern CMD	Qld	1MD
Eastern CMD	NSW	2MD
Southern CMD	Vic	3MD
	SA	4MD
	Tas	6MD
Western CMD	WA	5MD

AAMC READINESS IN 1939

- Recruitment was robust and hospital by hospital
- In 1934 50% of Junior MOs at Sydney RPA were on active list
- However minimal formal training – less than 12 days annually
- Training was not reflecting current medical management
- Minimal equipment and much ex WW1
- Equipment budget annually £5000
- Senior Officers were ageing
- Drugs scarce

DRUGS ON STANDBY IN 1939

- Post WW1 there had been a policy of producing locally
- By 1930 most drugs produced in Australia
- January 1939 – Panic – Cabinet approved £65,000 drugs and equipment
- More than the total of the previous 20 years
- Individual AAMC members encouraged civilian hospitals to order 1 year supply in stock
- Portsea quarantine station became the storage facility for most supplies.

CALL TO ARMS - STATUS AAMC 1940

- Experienced Medical Officers from WW1 were not clinically up to speed
- Medical conditions stopped recruitment.
- Difficulty finding sufficient recruits to fill all posts
- AAMC reservists had however been formed into Field Ambulance groups so establishments formed
- Very short on equipment but 2/1 Australian General Hospital deployed

STRUCTURE OF FACILITIES



DRESSING STATIONS



- Dressing Stations were manned by medics
- "TRIAGE" wounded brought back from the frontline after
- Treated at a RAP (Regimental Aid Post)
- manned by Infantry soldiers trained in First Aid and basic Nursing duties (Stretcher Bearers)
- RAPS also had a AAMC Medical Officer who are attached to Regiments their where also AAMC soldiers attached to the fighting units who assisted the MO and helped with the training of the Stretcher Bearers.
- Wounds checked and Re-Dressed and some minor treatment would take place
- Fractures stabilised and the control of haemorrhage
- Once the wounded where stabilised they could be taken by a Field Ambulance unit back to a Field Hospital for further treatment.

FIELD AMBULANCES



CASUALTY CLEARING STATION

- A Casualty Clearing Station (CCS) is a medical facility behind the front lines
- CCS located beyond the range of enemy artillery (generally)
- Near transportation facilities (e.g., a railway)
- CCS receives battlefield casualties from RAPs
- Casualties are stabilized there before being transported to a General Hospital
- Limited Holding Capacity
- Limited procedures were performed – life and limb saving procedures.

CASUALTY CLEARING STATION



AUSTRALIAN WAR MEMORIAL

020316



AUSTRALIAN WAR MEMORIAL

014077

FIELD HOSPITALS

- Formed within days
- Highly mobile – easily relocated
- Limited holding capacity 250 – 400
- Troops who would return to battle in short time



AUSTRALIAN GENERAL HOSPITALS AGH

- Generally well behind the front line
- Planned capacity was 1200
 - Nurse patient ration 1 to 80 – assisted by medics and AAMWS staff
 - Often went up to 2000 – staff did not change!
- Needed to be flexible enough to be relocated in a reasonable time as the battle changed
- Would hold patients who would return to combat
- Would stabilise and treat patients who were to return to Australia
- Generally transferred to the British Hospital in Alexandria
- Suez remained open except for one short period when magnetic and acoustic bombs were dropped

AGHs Mediterranean 1940-45

- 2/1 AGH formed Sydney Oct 1939 to support 16th BDE 6th Division left Jan 1940 initially 600 beds
 - Gaza Ridge, Palestine; Merredin & Guildford, W.A.; Bootless Bay, Papua, Torokina, Bougainville
- 2/2 AGH formed El Kantara Egypt 15 Apr 1940 1200 bed capacity
 - El Kantara, Egypt; Watton Siding, Hughenden; Rocky Creek, Atherton Tablelands, Dargy, Victoria.
- 2/3 AGH opened Godalming Surrey, 1st Aug 1940 late 1940 moved to Palestine and effectively disbanded
 - Left Sydney May 1940 mid Indian Ocean diverted to UK post Dunkirk 27 May to 6 June 1940
- 2/4 AGH formed Puckapunyal Military Camp 28 May 1940
 - Tobruk, Libya; Jerusalem, Palestine; Redbank Queensland; Labuan, Borneo
- 2/5 AGH formed Greta June 1940
 - Rehovot, Palestine, Greece, Armidale, Bootless Bay New Guinea, Morotai
- 2/6 AGH formed Sydney 22 July 1940 1200 beds
 - Gaza Ridge, Palestine; Jerusalem, Palestine; Agria, Greece; Canea, Crete; Atherton, Australia; Labuan, Borneo
- 2/7 AGH formed Victoria 1 July 1940 1200 beds
 - Kufr Balu in Palestine, Syria, Buseilli in Egypt and Lae in New Guinea

2/1 AGH

- Gaza Ridge in Palestine Feb 41
- 8 Jun 1941 484 patients.
- Joined by 2/2 AGH
- During the Syrian campaign the 2/1st's bed state rose to nearly 2,000



2/4 AGH

- Between 1940 and 1945, they operated at Tobruk, Redbank, Jerusalem, Colombo and Labuan.
- AGH through siege of Tobruk
- The 2/4th AGH examined 34,000 casualties, admitted 13,497 and treated a further 14,808 at aid posts. They lost 234 patients. They averaged 15 operations a day but at one time performed 108 operations in eight hours. On another occasion, they operated in shifts for three days until no further casualties were waiting.
- 10 April 1941 targeted by Germans 32 patients killed



2/5 AGH

- Formed Greta NSW 1940
- Served with 6th and 7th Divisions
- 9th April 1941 deployed to Greece
- As situation deteriorated female and some male staff evacuated to Palestine
- 165 remained including 6 MOs
- All became POWs on 27 April 1941
- Later all sent to POW camps in Germany



HOSPITAL SHIPS

2/1 HMAHS MANUNDA



- Commissioned 22 July 1940
- The Commanding Officer of the General Hospital that was based on "HMAHS Manunda" was Lt. Col. John Beith. Members of the Australian Army Nursing Service (AANS) also served on board "Manunda" under the command of Matron Schumack.
- The "Manunda" made 4 trips to the Middle East between November 1940 and September 1941.
- Thursday 19 February 1942 "Manunda" received a near miss which sprayed shrapnel across its decks killing four people. 76 holes were peppered in her plates

2/2 AHS WANGANELLA



- Wanganella converted to a hospital ship
May 1941 sailed to Singapore in July 1941
then to Suez to collect wounded for return to
Sydney and Brisbane
- After two more voyages to the Middle East
the ship was ordered to Port Moresby in
May 1942 to collect injured for return to
Australia.
- Her 13th voyage was from Sydney in March
1944 for Bombay where the British
ammunition ship Fort Stikine exploded on 14
April 1944.
- During her period as HMAHS she travelled
251,611 nautical miles and carried 13,389
patients.

2/3 AHS CENTAUR

- The *Centaur*, 2/3rd Australian Hospital Ship, was a motor passenger ship converted in early 1943 for use as a hospital ship. In November 1941 it had rescued survivors of the German auxiliary cruiser *Kormoran* after it had sunk and been sunk by HMAS *Sydney*.
- It was sunk without warning by a torpedo from a Japanese submarine on 14 May 1943 at approximately 0400 hours, its position being approximately 27°17' S, 153°58' E about 50 miles east north-east of Brisbane.
- Of the 332 persons on board, only 64 survived.
- Sister Ellen Savage, the only one of twelve nursing sisters on board to survive, though injured herself, gave great help to the other survivors and was awarded the George Medal for this work.



AUSTRALIAN ARMY NURSING SERVICE

- Embedded within Army but not part Army
- Direct control of Government
- Commissioned officers
- Post WW2 became part of Army
- 1951 RAANC formalised
- Only commissioned nursing officers



AUSTRALIAN WAR MEMORIAL

004493

COLONEL ANNIE MORIAH SAGE CBE RRC

- Born on 17th August 1895 at Somerville, Victoria
- Annie trained at the Melbourne Hospital and studied midwifery at the Women's Hospital,
- On 1st January 1940, Annie was commissioned into the AANS
- appointed matron of the 2/2nd Australian General Hospital
- Embarked for the Middle East in April 1940
- Annie served at Gaza Ridge, Palestine, and at Kantara, Egypt, before being appointed matron-in-chief AIF Middle East in May 1941
- **Royal Red Cross 1st Class (RRC)** in 1942 for 'exceptional tact and administrative ability'
- For her war service, she was awarded the **Florence Nightingale medal** in 1947 by the International Red Cross.
- **Commander of the Order of the British Empire (CBE)** in 1951
- Founding president (1949-50), treasurer (1950-52) and an honorary fellow (1967) of the College of Nursing, Australia





SISTER SYBIL FLETCHER, 2/1ST AUSTRALIAN GENERAL HOSPITAL

- 3,477 women joined the AANS with 71 members losing their lives (23 in battle and 18 as a result of accident or illness).
- Thirty-eight nurses became Prisoners of War.
- A total of 137 decorations were awarded to members of the AANS, including two George Medals
- 1948 the service was renamed as the **Royal Australian Army Nursing Service**. It became part of the Australian Regular Army the following year, eventually becoming a corps in February 1951

AUSTRALIAN ARMY MEDICAL WOMEN'S SERVICE (AAMWS) ESTABLISHED IN DECEMBER 1942.

- A total of 8500 served in WW2
- Free up men to serve in combat
- Came from Red Cross and St Johns Ambulance
- Not nurses but worked as nurse's aides, clerical and technical roles
- Additional 600 in Navy and RAAF
- Disbanded in 1951 joined RAANC



SIR ERNEST “WEARY” DUNLOP



AUSTRALIAN WAR MEMORIAL

117361

- Surgeon at St Mary's Hospital, Paddington.
- He enlisted in the AAMC (6th Division) on 13 November 1939
- Posted, Headquarters, Jerusalem, and appointed Acting Assistant Director of Medical Services. He was promoted to Major on 1 May 1940 and appointed Deputy Assistant Director of Medical Services on the staff of the Australian Corps Headquarters and AIF Headquarters in Gaza and Alexandria.
- Appointed as AIF Medical Liaison Officer on the staff of the Deputy Director of Medical Services of Lusterforce, he served in both Greece and Crete. On 18 July 1941 he was appointed to command 2/2 Casualty Clearing Station (2/2 CCS), but he was dissatisfied with staff work and declined this promotion. He remained with this unit as senior surgeon (and second in charge) and subsequently served with them in Tobruk.
- With the withdraw of the 6th and 7th Australian Divisions from the Middle East, the 2/2 Casualty Clearing Station (and Dunlop) were transferred to Java. Here he was promoted to temporary Lt Colonel on 26 February 1942. He was in command of No.1 Allied General Hospital at Bandoeng (Bandung) when Java fell to the Japanese, and he became a prisoner of war.

LTCOL LADY WINIFRED MACKENZIE

First Female Medical Practitioner AAMC

BM Uni Melbourne 1924

Sir Colin MacKenzie orthopaedic surgeon

323 female MOs in Australia in 1939

Volunteered for 6 months

Commissioned 1940

Recruited and deployed masseurs
(physiotherapists)

Did not go overseas

Victoria Barracks Melbourne





PHYSIOTHERAPIST NANCY ATKINSON

- Graduate in London and joined the Army on return to Australia
- She joined the Australian Army on 11 January, 1941. At that time, Nancy was appointed to Australian Medical Army Service and, prior to this, allocated to the Australian Army Nursing Service probably due to the fact she was a female, and that Australian Medical Army Service did not have female officers.
- Posted to 2/1 AGH Gaza
- Later New Guinea in 1944
- Personal memory in 2021 age 106 was endless supply of plasters and bandages for fractures



AUSTRALIAN RED CROSS

- Formed at the end of WW1
- Very active role in communication with families
- Embedded within the Australian Military
- On the front line
- Care packages for POWs



This Red Cross parcel despatched by the Australian Red Cross Prisoner-of-War Packing Department in Flinders Street
Returned from the International Red Cross Geneva, three years after it was despatched from Australia. The prisoner-of-war in North Africa to whom the parcel was despatched was repatriated before delivery. The contents were reported to be in perfect condition when opened (*The Herald*, 9 August 1944, AWM 141550).

WHAT WAS TREATED

- Battle Injuries
 - Emergency Resuscitation and surgery
 - Wound management
 - Definitive fracture management
 - Plaster casts
 - Internal fixation
 - Rehabilitation
 - Return to Combat or
 - Return to Australia
- Non Battle Injuries
 - Usually same number as Battle
 - Better sanitation than WW1
 - Vector borne – Mosquito
 - Parasite
 - SSDs
 - Dysentery
 - Hepatitis
 - All other medical conditions

KILLED IN ACTION – WAR GRAVES

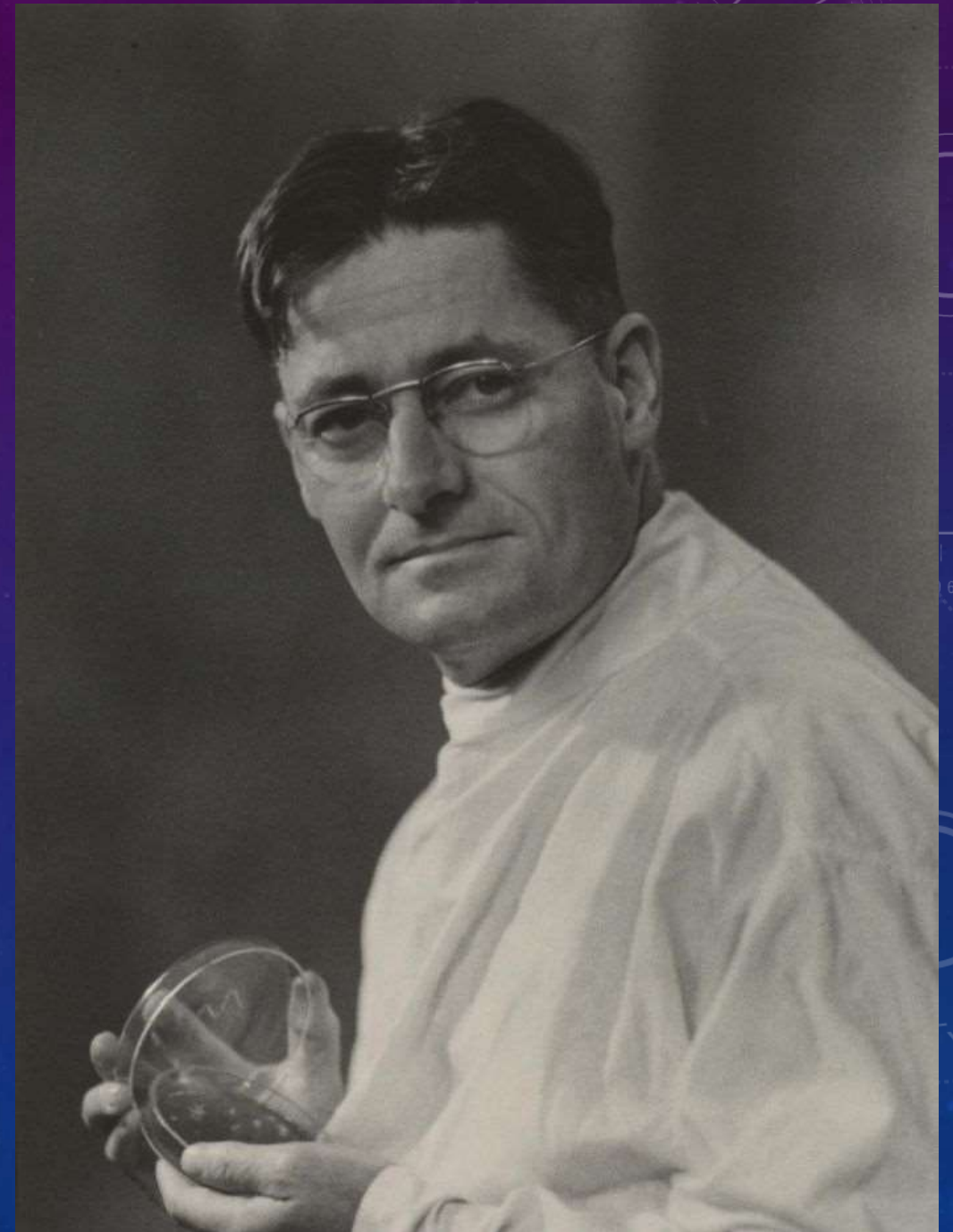


MEDICAL ADVANCES OF WW2

- ***“The only winners of war are medical and munitions technology”***
- Antibiotics – in particular Penicillin
- Blood Transfusion developments
- Wound debridement – repeated many times if required
- Internal Fixation fractures
- Vaccinations – In particular influenza

ANTIBIOTICS

- Sulphur drugs
- Gerhard Domagk German
 - Sulphanilamide the active ingredient
 - Effective but limited spectrum
 - Often not well tolerated
- Penicillin – the wonder drug
 - Effective against Staphylococcus and Streptococcus – the big killers
 - Alexander Fleming discovered the mould 1928
 - Named it penicillin
 - Could not isolate the active ingredient
 - Australian Howard Florey Oxford
 - Isolated, purified and produced as a drug
 - Mass produced in United States



BLOOD TRANSFUSION

- Developments in Cross matching, storage and delivery
 - Cross Matching ABO group and recent Rhesus
 - Antigens develop antibodies which then are lethal
 - Stopping stored blood clotting
 - Used sodium citrate
 - Did not damage the blood
 - Stored blood did not clot
 - Metabolised in body
 - Plasma and albumin separated



BLOOD TRANSFUSION DELIVERY

Continuous Drip Blood Transfusion

By H. L. MARRIOTT, M.D., M.R.C.P., and ALAN KEKWICK, M.B.

(From the Middlesex Hospital.)

THE material of this paper is derived from drip blood transfusions carried out at the Middlesex Hospital during the year 1935, namely :—

Total number of drip transfusions	...	...	...	...	87
Total volume of blood drip transfused (excluding citrate)	...	...	...	...	233.5 litres
Total duration of these transfusions	...	...	...	...	2,545 hours
Average drip transfusion	...	...	...	...	2.7 litres (= 5 pints)
Average duration of each drip transfusion	...	...	...	...	29 hours
Largest single transfusion	...	...	...	...	6.3 litres (= 11 pints)
Longest single transfusion	...	...	...	...	62 hours

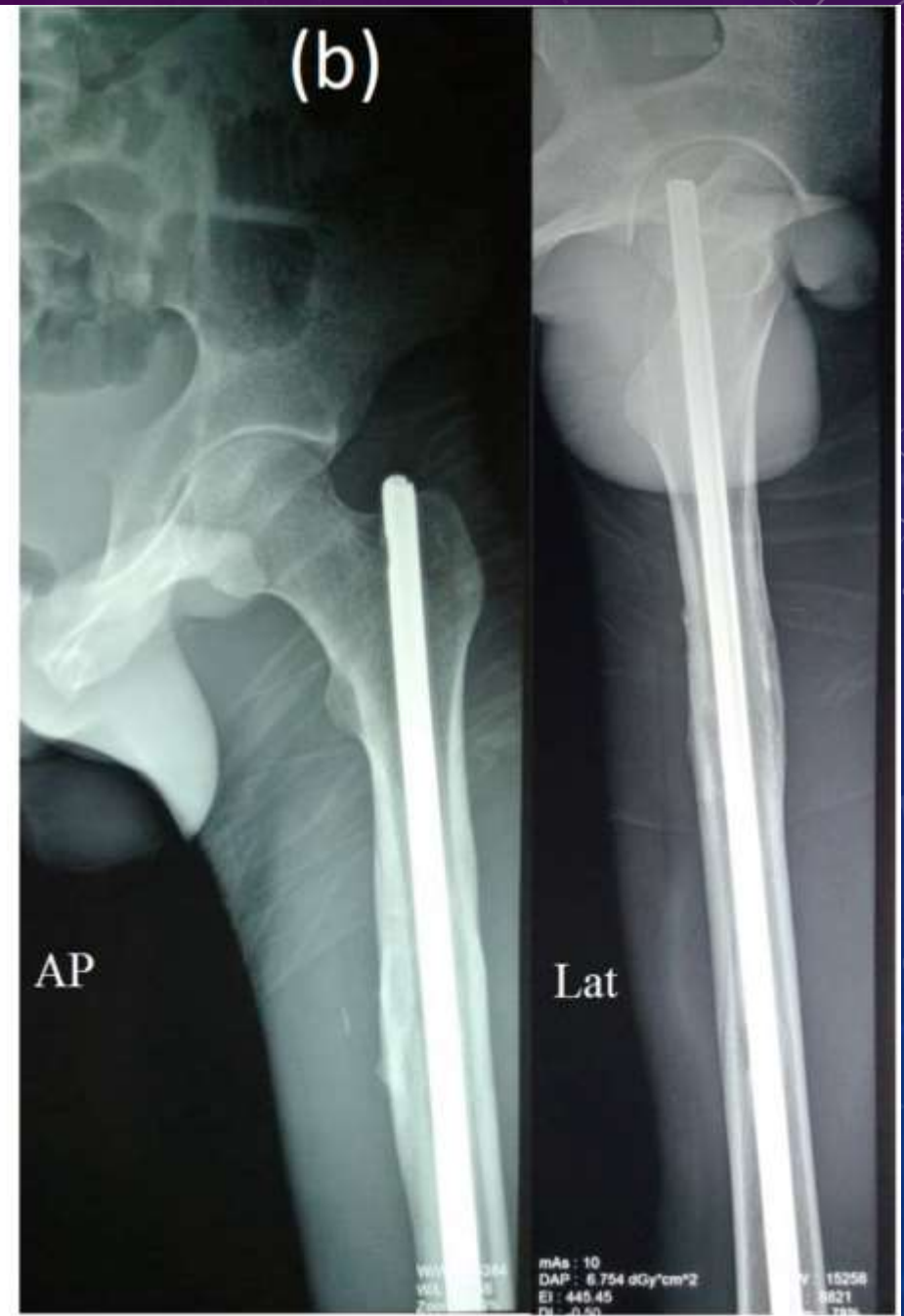
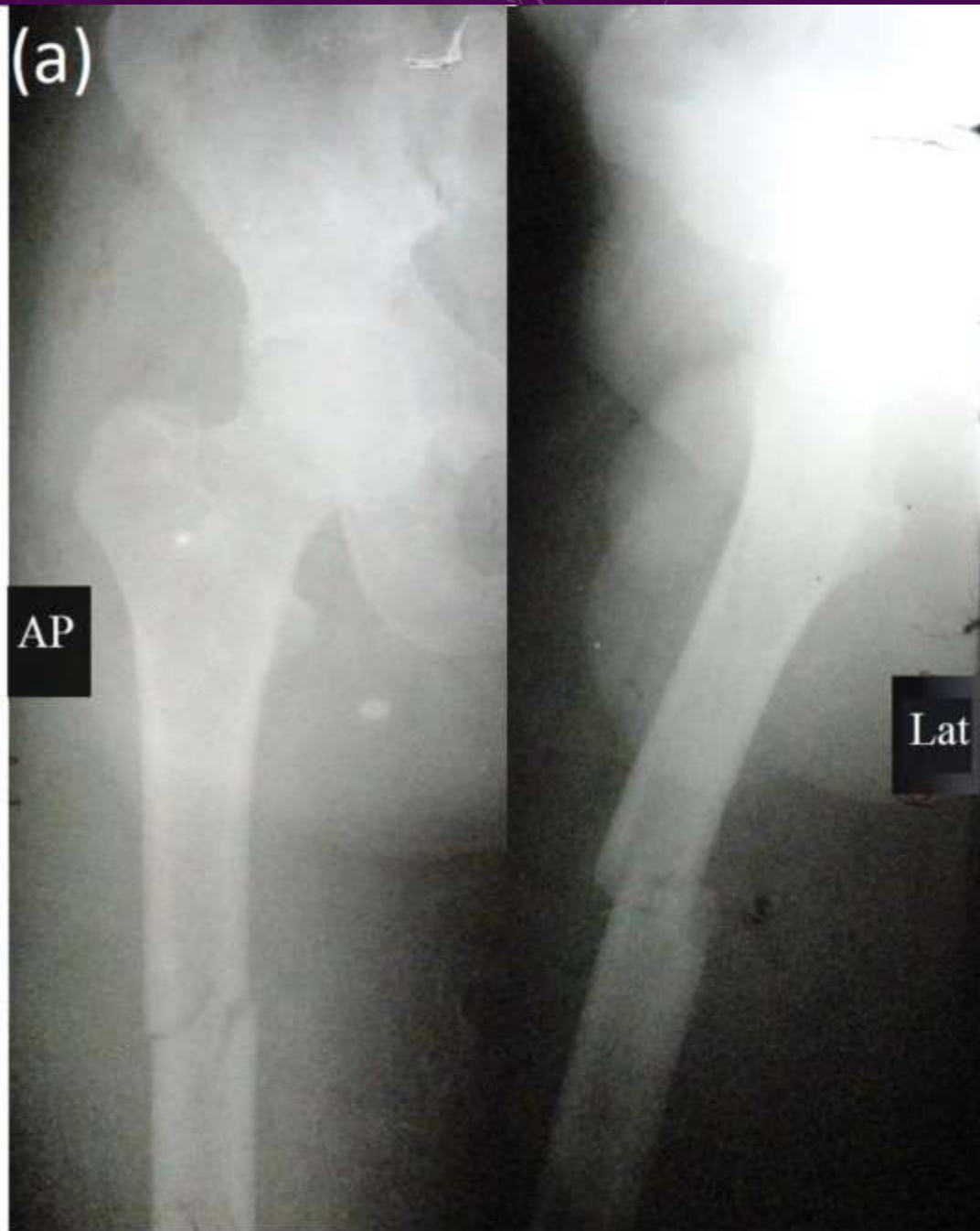
WOUND DEBRIDEMENT

- WW1 with no antibiotics and limited access to transfusion amputations provided the best outcomes
- Antibiotics and advances in surgical reconstruction changed that dramatically
 - Techniques of wound debridement with antibiotics and protection from tetanus
 - Often multiple operations to clean a wound and then grafting and internal fixation
 - Femoral Shaft fractures
 - Amputation rate WW1 80%
 - Reduced to 25% with traction
 - Amputation rate in WW2 less than 5%

INTERNAL FIXATION FRACTURES

- Intramedullary Nailing Femoral fractures
- Outrage by all traditionalists
- Gerhard Kuntscher – German 1936
- Not accepted and worked in the North
- Repatriated airmen to Britain





VACCINATIONS

- Between wars extensive research in influenza vaccination occurred as flow on from Spanish Flu Pandemic of 1918
 - Influenza Virus isolated 1933
 - First monovalent (1 strain) 1938
 - First bivalent (Influenza A & B) 1942
 - Extensive vaccination of US troops pre deployment
- All military were given typhoid, small pox and tetanus
 - US soldiers also given yellow fever – a contaminated batch led to hepatitis B

The background is a gradient from dark purple at the top to deep blue at the bottom, speckled with white stars. On the left side, there are several overlapping circular and semi-circular patterns. Some are solid white lines, while others are dashed. A prominent circular scale with tick marks and numbers (140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260) is visible. Arrows indicate a clockwise direction of movement for these patterns.

THANK YOU