BRAY GROUP Ltd

Avoca by Bray

Silver Nitrate Overview

Clinical Review by Bray Group Ltd

Avoca by Bray Silver Nitrate

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1. A Metal with a 2,000-Year Medical History

Silver's antimicrobial and healing properties have been recognised across every era of medicine. Silver nitrate remains BNF-listed and in daily clinical use — 2,000 years of evidence-based medicine supporting every Avoca applicator.

Era	Name / Event	Significance
400 BC	**Hippocrates**	The Father of Medicine documented silver's healing and anti-disease properties, recommending silver preparations for wound care and ulcer treatment.
1st Century AD	**Roman Empire**	Romans stored water and wine in silver vessels to prevent spoilage. Roman soldiers used silver to dress wounds in the field.
1614 / 1700s	**Early Chemistry**	Angelus Sala first documented silver nitrate for topical use. By the 18th century it was widely referred to as 'lunar caustic' in surgical texts.
1880s	**Carl Credé**	German obstetrician Carl Credé introduced 1% silver nitrate eye drops to prevent neonatal ophthalmia — credited with saving millions from blindness worldwide.
WWI & WWII	**Battlefield Medicine**	Silver compounds used extensively in wound management during both world wars. Silver foil and silver-impregnated dressings reduced infection rates and mortality.

Era	Name / Event	Significance
Today	**Modern Medicine**	Silver nitrate remains BNF-listed and is used daily across ENT, burns, gynaecology and minor injuries. Nano silver and silver-impregnated dressings represent the latest evolution.

What is Silver Nitrate ($AgNO_3$)

Science & Mechanism

Silver nitrate is a chemical compound widely used in healthcare for its antimicrobial and cauterising properties. It is commonly used in the treatment of minor wounds, warts, and verrucae.

Silver nitrate exerts its antimicrobial effect through the release of silver ions, which are toxic to bacteria and other microorganisms. This helps reduce the risk of infection and supports normal wound healing.

In addition to its antimicrobial action, silver nitrate acts as a chemical cauterising agent. When applied to tissue, it causes controlled coagulation and destruction of superficial cells, which may assist in achieving haemostasis.

Clinically, it is used to treat minor bleeding points, hyper granulation tissue, and small superficial lesions. It is also used in the management of anterior epistaxis by cauterising visible blood vessels within the nasal mucosa.

In dermatological practice, silver nitrate is effective in the treatment of warts and verrucae by destroying the superficial layers of the lesion. This results in local tissue necrosis, with the treated area darkening and turning black before the devitalised tissue is gradually removed, often with the aid of an emery board.

In gynaecology, it may be used in controlled clinical settings for conditions such as cervical ectropion or minor post-procedural bleeding, where targeted application allows superficial cauterisation.

Many silver nitrate formulations contain potassium nitrate, which helps stabilise the compound and regulate the cauterising reaction.

2. Key Properties & Clinical Importance

2.1 Broad-Spectrum Antimicrobial

Silver ions (Ag^+) released upon activation are toxic to bacteria, fungi, and other microorganisms.

- Silver ions disrupt bacterial cell membranes and interfere with DNA replication
- Penetrates and disrupts established bacterial biofilms in chronic wounds
- Bactericidal at therapeutic concentrations — kills rather than merely inhibits
- Resistance to silver is extremely rare versus conventional antibiotics

2.2 Caustic & Keratolytic Action

Silver nitrate reacts with tissue proteins to create a controlled cauterising effect.

- Reacts with tissue proteins to form silver proteinate eschar
- Selective destruction of hyper granulation tissue and small blood vessels
- Keratolytic effect breaks down abnormal keratin in verrucae and warts
- Haemostatic — seals capillaries via protein denaturation and vasoconstriction
- Depth of action proportional to concentration and contact time

2.3 Low Antimicrobial Resistance (AMR) Profile

Unlike antibiotics, silver acts on multiple bacterial targets simultaneously.

- Multi-modal action makes resistance development highly unlikely
- Particularly valuable in the current era of antimicrobial resistance
- Supports WHO AMR action plan — non-antibiotic antimicrobial strategy
- Decades of clinical use with no clinically significant resistance reported

2.4 Anti-inflammatory & Wound Healing

- Reduces pro-inflammatory cytokines at wound site, calming excessive inflammatory response
- Promotes transition from inflammatory to proliferative phase of wound healing
- Reduces wound exudate and odour in chronic infected wounds
- Supports re-epithelialisation by clearing obstructive hyper granulation tissue

2.5 Safety & Selectivity

- Highly localised action — minimal systemic absorption at therapeutic topical doses
- Solid applicator stick format provides greater precision vs liquid silver nitrate solutions
- Argyria only a risk with prolonged systemic exposure — not from topical applicator use
- Long track record of safe outpatient uses across adult and paediatric settings

3. Pharmacology, Chemistry & Clinical Mechanism

3.1 Pharmacology & Chemistry

Formula	$AgNO_3$ – inorganic salt of silver
Concentrations	Available in 40%, 75% and 95% w/w silver nitrate strengths
Form	Solid tip impregnated into a plastic pencil or on an applicator
Mechanism	Reacts with tissue protein → silver proteinate precipitate
Effect	Caustic/keratolytic – destroys granulation tissue & small blood vessels
Haemostasis	Seals capillaries via protein denaturation and vasoconstriction
Potassium Nitrate	Acts as stabilising agent — regulates cauterising reaction and maintains tip integrity

4. Avoca Strengths — Choosing the Right Concentration

All strengths are licensed medicines (PL held by Bray Group Ltd). Strength selection should follow clinical assessment and local protocol.

Strength	Description	Recommended For	Safety Note
40%	Mild caustic action	Umbilical granuloma in neonates; minor granulomas in sensitive anatomical areas; first-line in paediatric patients; useful for repeat applications where tissue is already sensitised; where surrounding tissue exposure risk is higher	*⚠ May require more applications to achieve full resolution vs higher strengths.*
75%	Moderate caustic action	Cervical ectropion; vault or vaginal granulomas post-surgery; aural granuloma around grommet sites; moderate hyper granulation in wound care settings; verrucae/warts where 40% has not resolved; good general-purpose strength for outpatient clinic use	*⚠ Standard precautions apply. Barrier protects surrounding tissue.*
95%	Maximum caustic action	Anterior epistaxis — rapid cauterisation of Little's area; significant hyper granulation in burns & plastics outpatients; resistant verrucae/plantar warts after paring; post-surgical wound granulomas; stoma site hyper granulation where rapid effect required	*⚠ Greater lateral spread risk. Strict barrier protection essential. Avoid unprotected mucosa*

5. Clinical Applications by Medical Sector

5.1 Minor Injuries, Dermatology & Podiatry

HIGH VOLUME

Verrucae & Warts

Plantar warts and common warts. After paring with scalpel, silver nitrate applied to de-roofed lesion. Repeat weekly. BNF listed indication. Clinical evidence shows 63.3% complete clearance with 10% solution — Avoca 40% is significantly stronger for efficacy. Study also confirms safe home self-application.

COMMON

Wound Granuloma

Hyper granulation in minor lacerations, puncture wounds, and abrasions failing to heal. Avoids referral to plastics or dermatology. Single or repeat application.

PROCEDURAL

Minor Haemostasis

Control of minor capillary ooze during minor surgical procedures, biopsy sites, skin tag removal, and shave excisions in outpatient or treatment room settings.

> *Practical Tips for Minor Injuries Staff: Always protect surrounding healthy skin with petroleum jelly before application. Single-use applicators — one stick per patient, never re-dip. Black/grey staining of surrounding skin is temporary — always warn patients in advance. Document application site, duration, and report adverse effects in patient record.*

5.2 ENT (Ear, Nose & Throat)

PRIMARY USE

Epistaxis (Nosebleed)

- First-line cauterisation for anterior epistaxis (Little's area
- Kiesselbach's plexus bleeding — superficial vessels respond well
- Apply under direct vision with thud chum speculum
- Bilateral use NOT recommended in same session — septal perforation risk
- NICE guidance supports chemical cauterisation in epistaxis management

SECONDARY USE

Granuloma / Polyp Formation

- Post-surgical granulomas following septoplasty, tonsillectomy
- Aural granulomas around grommet / ventilation tube sites
- Reduces need for return to theatre
- Outpatient clinic application — no anaesthesia typically required

SAFETY NOTE

> *⚠ Avoid contact with unaffected mucosa — use petroleum jelly barrier. Do not use on posterior nasal bleeds or if perforation suspected. Maximum application: 30 seconds per site. Topical anaesthetic recommended before application. 75% preferred for paediatric patients (RCT evidence — see Section 8).*

> *Clinical Evidence: 75% $AgNO_3$ demonstrated 98% resolution vs 90% for 95% in childhood epistaxis RCT (n=101) with mean pain score 1/10 vs 5/10 (p=0.001). Limbrick & Takwoingi 2019: 93% significant improvement in 134-patient prospective study.*

5.3 Plastics & Burns Outpatients

HIGH VOLUME

Hyper granulation Tissue

Over-exuberant granulation ('proud flesh') in healing wounds delays epithelialisation. Silver nitrate selectively destroys hyper granulation without damaging surrounding epithelium when applied carefully.

KEY USE

Post-Burn Wound Care

Superficial burns with over-granulating edges. Application reduces excessive granulation, controls bacterial biofilm (Ag^+ is broadly antimicrobial), and promotes flatter, pliable scar formation.

COMMON

Split-Thickness Graft Donor Sites

Donor site hyper granulation is a common complication post-harvest. Silver nitrate cauterisation flattens tissue, reduces delayed healing and patient discomfort.

OUTPATIENT

Stoma Complications

Hyper granulation around stoma edges (colostomy, ileostomy, urostomy) causing bleeding or pain. Serial silver nitrate applications in outpatient clinic reduce need for surgical revision.

CLINICAL

Pilonidal Sinus / Wound Sinuses

Small granulomatous tissue within sinus tracts or chronic surgical wounds can be treated with silver nitrate, avoiding further surgical intervention.

5.4 Gynaecology

MIDWIFERY / PAEDS

Umbilical Granuloma (Neonatal)

Very common post-cord separation. Single or multiple applications of 40% silver nitrate to granuloma. Quick, well-tolerated, effective. Protect surrounding skin with barrier cream. Follow local trust protocol for neonatal use.

COLPOSCOPY

Cervical Ectropion

Symptomatic ectropion causing discharge or post-coital bleeding. Cauterisation with silver nitrate in outpatient or colposcopy clinic. Often used adjunct to or instead of cryotherapy for small ectropion areas.

POST-SURGICAL

Vaginal / Vault Granuloma

Post-hysterectomy vault granulomas or suture granulomas causing discharge or bleeding. Outpatient application avoids return to theatre. Serial applications may be required for complete resolution.

MINOR OPS

Bartholin's / Minor Cyst Complications

Post-marsupialisation hyper granulation at cyst site. Careful point application reduces excessive granulation tissue around healing wound edges.

6. Avoca by Bray Silver Nitrate Applicators

6.1 Product Specifications

Active Ingredient	Silver Nitrate — available in 75% w/w and 95% w/w strengths
Physical Form	Solid tip impregnated onto plastic applicator stick (~15 cm) Regular and Large size
Pack Sizes (UK)	50 / 100 applicators per box
Shelf Life	5 years (store away from light and moisture)
Regulatory Status	Licensed medicine (PL held by Bray Group Ltd)
UK Marketing	Bray Group Ltd / distributed via NHS Supply Chain
MIMS / BNF Listed	Listed for removal of verrucae, warts, and excess tissue
Global Licensing	75% strength license: MHRA · TGA (Australia) · Health Canada · FDA Registered · Hong Kong PPB. 95% strength license: MHRA
Manufacturing	GMP controlled environment · ISO 13485:2016 · Manufactured in Britain

6.2 Key Clinical Benefits

2 Strengths	75% and 95% available — right product for every clinical indication
Single-Use	100% single-use applicators — no cross-contamination risk
< 60 Seconds	Application time — rapid, efficient outpatient procedure
No Rx Required	Classified as P (Pharmacy) products (Pharmacists must be present to purchase products)

7. Avoca by Bray Silver Nitrate Pencils

7.1 Product Specifications

Active Ingredient	Silver Nitrate — available in 40% w/w and 95% w/w strengths
Physical Form	Solid tip impregnated in a plastic pencil
Pack Sizes (UK)	1 pencil per box
Shelf Life	5 years (store away from light and moisture)
Regulatory Status	Licensed medicine (PL held by Bray Group Ltd)
UK Marketing	Bray Group Ltd / distributed via NHS Supply Chain
MIMS / BNF Listed	Listed for removal of verrucae, warts, and excess tissue
Global Licensing	MHRA · Hong Kong PPB
Manufacturing	GMP controlled environment · ISO 13485:2016 · Manufactured in Britain

7.2 Key Clinical Benefits

2 Strengths	40% and 95% available — right product for every clinical indication
Single-Use	100% multiple-use pencil — single patient
< 60 Seconds	Application time — rapid, efficient outpatient procedure
No Rx Required	Classified as P (Pharmacy) products (Pharmacists must be present to purchase products)

3.2 How to apply silver nitrate caustic pencil and applicator

1. **Moisen the Tip:** Touch the applicator or pencil tip briefly to water. The moisture activates the silver nitrate and initiates the cauterising reaction. The drop of water now contains silver nitrate. Do not over-soak — a brief touch is sufficient. *Tip: A moist wound surface will also activate the tip on contact*

2. **Apply to Target Tissue:** Apply the tip precisely to the target area using gentle, controlled pressure. A rolling motion ensures even contact. Black or grey staining of the tissue may appear straight away or sometime later as silver nitrate stains skin and surface areas. *Tip: Always protect surrounding healthy skin with petroleum jelly before application*

3. **Controlled Cauterisation**: Maintain contact for the required duration — typically up to 20 seconds depending on indication. Protein denaturation creates an eschar, sealing

small vessels and destroying granulation or target tissue. *Tip: Do not exceed 20 seconds per site near unaffected mucosa. Shorter durations for minor applications*

4. **Neutralise if Needed**: If lateral spread of the reaction needs to be limited, apply a saline wash or sodium thiosulphate solution to the area. This will neutralise the silver nitrate and halt the reaction. *Tip: Particularly important when applying near unaffected mucosa*

5. **Storage & Disposal**: Multi-use pencil: dab the tip gently with a clean tissue to remove excess moisture, then replace the protective cap. Single-use applicator: dispose of clinical waste per local protocol. Never re-use. *Tip: Store away from light and moisture. Shelf life 5 years.*

⚠ Single-use applicators — one stick per patient, never re-dip · Black/grey staining is temporary — always warn patients · Document application site, duration and report adverse effects

8. Avoca vs Alternative Treatments

Comparison	Avoca Advantages	Limitations to Discuss
vs Cryotherapy	✓ No capital equipment cost. No gas cylinder management. Greater precision for small lesions. No post-treatment blister risk. Can be used in any clinical room.	⚠ Less effective for thicker verrucae. Multiple applications may be needed. Not suitable for deeper lesions.
vs Electrocautery	✓ No capital outlay (£500–3,000+). No electrical safety requirements. No smoke plume — no COSHH extraction needed. Less training required. No patient discomfort from electrical current.	⚠ Less precise for deep tissue. Cannot be used for polyp removal in theatre.
vs TCA (Trichloroacetic Acid)	✓ Safer handling — solid form, no liquid acid risk. Precise application — no run-off risk. No COSHH storage requirements. MIMS/BNF listed for key indications.	⚠ Lower concentration flexibility than titrated TCA. TCA may penetrate deeper if required.

9. SWOT Analysis — Avoca Silver Nitrate

STRENGTHS	WEAKNESSES
• BNF-listed for key indications (verrucae, epistaxis, warts) • Well-established clinical evidence base — peer-reviewed RCT support • Three strengths (40%, 75%, 95%) — adaptable to every clinical setting • Pencil is multi-use, single patient — no infection control concerns • Applicators are single use – no infection control concerns	• Staining of surrounding tissue (temporary but patient concern) • Requires precise application technique — training important • Not suitable for posterior nasal bleeding (ENT) • Multiple repeat applications may be needed • Limited awareness in some departments — opportunity gap

• Familiar to clinical staff — low training burden • Cost-effective vs electrocautery and cryotherapy	
OPPORTUNITIES	**THREATS**
• Growing NHS focus on outpatient-first treatment pathways • Hypergranulation management: growing burns & plastics caseload • Neonatal granuloma — increasing midwifery-led care settings • Minor injuries expansion — increased clinical footprint • Formulary inclusion drives volume and standardises treatment	• Increasing use of cryotherapy devices in minor injuries • Generic alternatives undercutting on price • Procurement consolidation — risk of delisting from formulary • Staff turnover — awareness needs constant reinforcement • Risk-averse culture may prefer 'newer' technology over familiar

10. Clinical Evidence — Study Review

The following peer-reviewed clinical studies provide evidence for the safety and efficacy of silver nitrate across its principal clinical indications. All studies are PubMed-indexed unless otherwise stated.

98% Resolution at 8 weeks 75% $AgNO_3$, childhood epistaxis (Glynn et al. RCT, n=101)	**93%** Significant improvement Bilateral cautery, epistaxis (Limbrick & Takwoingi, n=134)	**63%** Complete wart clearance 10% solution (Avoca 40% stronger) (Ebrahimi et al., n=60)	**34%** Full verruca resolution (clinical) 95% $AgNO_3$ at podiatry clinic (Concannon, n=101)

Study 10.1 — Common Warts (10% Solution)

Efficacy of 10% Silver Nitrate Solution in the Treatment of Common Warts

Publication	International Journal of Dermatology (2007)
Authors	Ebrahimi S, Dabiri N, Jamshid Nejad E, Sarkari B
DOI	10.1111/j.1365-4632.2007. 02955.x
Study Type	Placebo-controlled, randomised clinical trial (n=60)
Source	PubMed / National Library of Medicine / NCBI

Background:

Warts are a common dermatological condition caused by human papilloma viruses (HPV), particularly prevalent in children and young adults. No definitive curative therapy exists; treatment is evaluated on efficacy, tolerability, and patient comfort.

Results & Conclusion:

- Complete regression achieved in 19 of 30 (63.3%) treated patients
- No significant side effects observed beyond temporary brownish skin discolouration
- Discolouration resolved within 1 week of completing treatment
- Placebo group showed no significant improvement

> *Avoca Relevance: The Avoca Wart & Verruca Pencil contains 40% silver nitrate — significantly higher than the 10% studied here. The 63.3% clearance rate at 10% supports strong efficacy expectations at the higher concentrations used in Avoca products.*

Study 10.2 — Verruca Pedis (95% — Clinical vs Home Application)

Effectiveness of Silver Nitrate ($AgNO_3$) 95% for Treatment of Verruca Pedis

Publication	International Journal of Pharmacy Practice, 2017; 25, pp.421–428
Author	Michael Concannon, Division of Podiatry, University of Huddersfield
Study Type	Randomised clinical study — clinical vs home application (n=101)
Setting	University podiatry clinic
Source	PubMed / National Library of Medicine / NCBI

Results & Conclusion:

- All participants reported a reduction in pain following intervention
- Clinical group: 34% full resolution, 26.4% partial resolution
- Home treatment group: 18.8% full resolution, 37.5% partial resolution
- No significant difference between groups in primary outcomes
- Study confirms silver nitrate is safe and effective for verruca pedis

> *Validation: This study directly validates the dual-use model of silver nitrate products — both clinically applied and as a patient self-treatment, with equal safety and efficacy outcomes.*

Study 10.3 — Evaluating Nasal Cautery Techniques in Epistaxis

Publication	The Journal of Laryngology & Otology
Author	Mr John Bastianpillai, Department of ENT Surgery, Northwick Park Hospital, London
Date	7 October 2019
Study Type	Educational / clinical review article

Key Clinical Findings:

- 60% of the population will experience epistaxis; ~6% require medical attention

- Silver nitrate cautery applicators commercially available in 75% and 95% concentrations
- Applied to visible vessels on the nasal septum — causes thrombosis and scar tissue formation
- 95% formulation associated with deeper penetration and higher risk of complications
- Topical anaesthetic recommended; use in children requires additional consideration
- Silver nitrate cautery requires minimal technical skill — used in ENT, GP, and A&E settings

Study 10.4 — Bilateral Nasal Septal Cautery (134 Patients)

Bilateral Nasal Septal Chemical Cautery: A Safe and Effective Outpatient Procedure

Publication	European Archives of Oto-Rhino-Laryngology, 2019;276(6):1845–1848
Authors	Limbrick J, Takwoingi YM
DOI	10.1007/s00405-019-05389-6
PMID	30895432
Study Type	Prospective study — 180 consecutive patients
Source	PubMed / National Library of Medicine / NCBI

Methods:

180 consecutive patients presenting with epistaxis to a general ENT clinic. Local anaesthetic (5% lidocaine + 0.5% phenylephrine spray) administered prior to cautery. Visible vessels in Little's Area cauterised bilaterally using two silver nitrate sticks per side.

Results & Conclusion:

- 134 patients (74%) seen at follow-up; age range 5–88 years (mean 25)
- 60% of study population were children (aged ≤16); 69% male in paediatric group
- 93% (124 patients) achieved significant improvement (0–1 re-bleeds)
- Only 1.5% relapse rate (2 children); 6% moderate improvement only
- No significant complications in study population

> *Validation: 93% significant improvement rate in a real-world prospective study of 134 patients confirms bilateral silver nitrate cauterisation as a safe, effective, low-complication outpatient procedure.*

Study 10.5 — Childhood Epistaxis: 75% vs 95% Silver Nitrate (RCT)

Prospective Double-Blind RCT: 75% vs 95% Silver Nitrate in Childhood Epistaxis

Publication	International Journal of Paediatric Otorhinolaryngology, Jan 2011;75(1):81–84
Authors	Glynn F, Amin M, Sheahan P, Mc Shane D
DOI	10.1016/j.ijporl.2010.10.014
PMID	21093066

Study Type	Prospective, double-blind, randomised controlled trial (n=101)
Source	PubMed / National Library of Medicine / NCBI

Outcome Measure	75% $AgNO_3$ (n=49)	95% $AgNO_3$ (n=52)
Total resolution at 8 weeks	98%	90%
Mean pain score (out of 10)	1 / 10	5 / 10
Statistical significance (efficacy)	p = 0.01	—
Statistical significance (pain)	p = 0.001	—
Adverse effects	Fewer	More frequent
Recommended for paediatric use	Yes	Not preferred

Validation: This RCT directly validates 75% silver nitrate applicators as the preferred choice for childhood epistaxis — superior efficacy, significantly lower pain scores, and fewer adverse effects vs 95%.

Study 10.6 — Educational Source: Silver Nitrate Sticks in Clinical Practice

Source	Wound Source — educational clinical website, USA
Published	30 April 2020
Category	Wound care, debridement, antimicrobial stewardship

Clinical indications confirmed by this source:

- Anterior epistaxis
- Non-genital warts, verrucae, skin tags
- Post-biopsy cervical procedures / cervical ectropion
- Hyper granulation tissue in wounds and stoma sites
- Umbilical granulomas
- Painful aphthous stomatitis (mouth ulcers)
- Vasomotor rhinitis
- Chronic skin ulcers and wound epibole

References

1. Ebrahimi S, Dabiri N, Jamshid Nejad E, Sarkari B. Efficacy of 10% silver nitrate solution in the treatment of common warts. International Journal of Dermatology. 2007. DOI: 10.1111/j.1365-4632.2007. 02955.x

2. Concannon M. Evaluation of clinical and home application of silver nitrate ($AgNO_3$) 95% for treatment of verruca pedis. International Journal of Pharmacy Practice. 2017; 25:421–428.

3. Bastian Pillai J. Evaluating nasal cautery techniques in epistaxis. The Journal of Laryngology & Otology. 7 October 2019.

4. Limbrick J, Takwoingi YM. Bilateral nasal septal chemical cautery: a safe and effective outpatient procedure for control of recurrent epistaxis. European Archives of Oto-Rhino-Laryngology. 2019;276(6):1845–1848. DOI: 10.1007/s00405-019-05389-6. PMID: 30895432.

5. Glynn F, Amin M, Sheahan P, Mc Shane D. Prospective double-blind randomised clinical trial comparing 75% versus 95% silver nitrate cauterisation in the management of idiopathic childhood epistaxis. International Journal of Paediatric Otorhinolaryngology. Jan 2011;75(1):81–84. DOI: 10.1016/j.ijporl.2010.10.014. PMID: 21093066.

6. Wound Source Editorial Team. Silver Nitrate Sticks in Medicine. Wound Source. April 30, 2020. www.woundsource.com

11. Why choose Avoca by Bray?

11.1 Clinically Validated

Peer-reviewed RCTs, prospective studies & clinical reviews across ENT, dermatology, wound care & gynaecology — including a double-blind RCT directly validating silver nitrate applicators.

11.2 Multi-Sector Reach

Used in NHS hospitals, A&E, GP surgeries, pharmacies, podiatry, dentistry and international markets.

11.3 Globally Licensed

MHRA licensed · GMP manufactured in Britain · ISO 13485:2016 · TGA · Health Canada · FDA Registered.

11.4 Right Tool, Right Dose

40%, 75% and 95% formulations matched every clinical indication — from neonatal granuloma to resistant epistaxis.

11.5 Proven Safety

93% improvement in 134 patients. 98% resolution in children (75%). Minimal complications across decades of clinical use.

11.6 Manufacture and Licensing

Avoca by Bray silver nitrate applicators and pencils are designed and manufactured in Britain and are regulated and licensed by the UK Medicines and Healthcare Regulatory Authority (MHRA). Products are also licensed by such bodies as the TGA in Australia, the Pharmacy and Poisons Board in Hong Kong and Health Canada and Avoca is registered with the FDA in the USA. All manufacturing is carried out in a GMP controlled environment in compliance with MHRA GMP, MHRA Manufacturer's licence, ISO 13485:2016 and EN ISO 13485:2016.

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