Regulatory oversight and risk control measures in tattoo and piercing premises in London and England: Environmental Health perspectives

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Abstract

This study examines the different regulatory regimes that govern tattoo and piercing businesses in the UK. Currently, regulations are minimal in most of England and Northern Ireland and regulators have few powers to inspect such businesses. High standards of hygiene and management are required to control body modification risks and there is little data to indicate whether this is being achieved. To investigate this, this study interviewed Environmental Health Officers in London and wider England to explore the strengths and weaknesses of their respective regulatory systems. Findings suggests the wider England registration system generates inconsistent, localised regulation that is highly reliant on informal approaches. London participants, meanwhile, were generally satisfied that their license system controlled tattoo and piercing risks and could be adapted to changing trends. Both groups were in favour of formal qualifications for practitioners and a national licensing scheme. Notable problems included inadequate handwash arrangements and inappropriate chemical disinfection, both key elements for robust hygiene in tattoo and piercing practice. Overall, the findings point to policy suggestions which can be explored in future research.

Abbreviations

APP - Association of Professional Piercers (US professional body)
BBVs - Blood-borne viruses
CIEH - The Chartered Institute of Environmental Health (UK professional body)
CIEH Toolkit - CIEH Tattooing and Body Piercing Guidance Toolkit
EMM - Enforcement Management Model
HABIA - The Hair and Beauty Industry Authority (UK professional and standard setting body)
HASAWA - Health and Safety at Work etc. Act 1974
HBV - Hepatitis B virus
HCV - Hepatitis C virus
HDV - Hepatitis D virus
HPV - Human papillomavirus virus
HSE - The Health and Safety Executive
HSV - Herpes simplex virus
IPAC - Infection prevention and control
KAP - Knowledge, Attitudes, and Practices
LGMPA - Local Government (Miscellaneous Provisions) Act 1982
LA - Local authority
LLAA - London Local Authorities Act 1991
Management Regs - The Management of Health and Safety at Work Regulations 1999
NEHA - The National Environmental Health Association (US professional body)
RSPH - Royal Society for Public Health (UK professional body)
SPM - Semi-permanent make-up
TPIU - Tattoo and Piercing Industry Union (UK union)
UKAPP - The United Kingdom's Association of Professional Piercers (UK professional body)
UKHSA - The UK Health Security Agency

Glossary

Autoclave - Sterilising machine that uses steam and pressure to destroy pathogens.
Mycobacterium (atypical) - Large family of pathogenic bacteria found in soil and water, which causes skin, lung, and lymphatic infections. 'Atypical' types do not cause Tuberculosis or Leprosy.
Pseudomonas aeruginosa - Common multidrug resistant opportunistic pathogen found in soil and water. It typically causes wound, bloodstream, and respiratory infections.
Serosanguineous fluid - Pinkish-yellow body fluid composed of red blood cells and blood serum, a common wound discharge after surgery.
Staphylococcus - Family of multidrug resistant bacteria found on the skin or in soil, which can cause skin or respiratory infections.
Statim - Brand of fast-cycle cassette style autoclaves marketed to dentists.
Vibrio vulnificus - Pathogenic bacteria species found in marine environments, commonly causing food-borne illness, but also capable of skin infections and sepsis.

Regulatory oversight and risk control measures in tattoo and piercing premises in London and England: Environmental Health perspectives

1. Introduction

Tattoo and piercing businesses require high standards of hygiene and management, yet in the UK, legal provisions for inspections are typically limited, with few requirements for tattoo artists or piercers. This may lead to increased risk of bacterial or viral infection from poor practice. On the other hand, the industry may be able to self-regulate well, or regulation may be achieved through informal approaches. Standards may also be maintained through health and safety regulation or local byelaws that enhance the registration process.

Is the current regulatory approach of tattoo and piercing businesses in England and Northern Ireland sufficient? Given the limited data on the effectiveness of their legal frameworks, this study explores the perspectives of the regulatory officers who work within them. In addition, to explore variation in more or less prescriptive regulatory regimes, this study compares experiences of districts within London, which has more prescriptive regulation for body modification with regular inspections, to areas with less prescriptive regulation in the rest of England.

The study found four interconnected main themes and one minor one. First, inconsistency is generated from localised regulation in individual local authorities. Second, handwash requirements are interpreted differently by industry and regulatory, leading to recurrent issues. Thirdly, qualifications are considered necessary by participants but not required in most jurisdictions. Fourthly, there are limitations on enforcement action. Lastly, the industry may self-regulate to some degree. These findings help indicate the adequacy of oversight, their respective strengths and weakness, and highlight problem areas.

1.1 Research Questions

a) What regulatory frameworks for tattoo/piercing premises are being used in England?
b) How effective do current regulators feel they are in protecting public health within this framework?
c) What improvements would benefit regulators in protecting public health?

1.2 Research Objectives

- Research the current regulatory frameworks in England and London and assess their capacity to protect public health.

- Research the capability of regulators in England and London to assess risk in tattoo and piercing businesses.
- Research health risks that arise in regulating tattoo and piercing premises in England and London.

1.3 Background

Tattoos and body piercing are popular forms of body modification in the UK. Surveys indicate 25-30% of UK adults under 40 have a tattoo (Swami, 2015; YouGov, 2015), in line with EU estimates of 24% for adults under 35 and 12% of the total population (Serup, 2015; Piccinini, 2016). There is limited data regarding piercings, but Bone et al. found that in the UK the prevalence of non-earlobe body piercings was 10% (2008).

As tattoos and piercings involve skin penetration, there is critical need for suitable infection control. Unhygienic practices may lead to both localised infection and transmission of blood borne pathogens (p.4 CIEH, 2013). *Staphylococcus*, *Pseudomonas*, and *Mycobacterium (atypical)* have caused post-procedure skin infections with a variety of sources implicated: equipment, hands, water washes, inks, surfaces and even disinfectant (Conaglen, 2013; Fenelon, 2023).

The transmission of blood-borne pathogens may result from poor sterilization processes, needlesticks, or contamination from blood/serosanguineous fluid (Serup, 2015). Instances of HIV, HBV, HCV, HDV, HSV, HPV and Tetanus transmission have been found in the literature (Rhee, 2005; Islam, 2016; Breuner, 2017, Cohen, 2021). Systematic reviews have consistently found tattoos are a risk factor for contracting HCV and HBV (Jafari, 2010; Jafari 2012; Tohme, 2012; Khodadost, 2017; Lim, 2022). However, it remains unclear if tattoos are causative or a confounding variable for other high-risk behaviours (e.g. drug use, unsafe sex).

Most reviews include studies on special populations (inmates, drug-users, hospital patients) for which there is a strong association between tattoos and blood-borne viruses (BBVs), particularly those received in non-professional settings (Jafari; 2012; Khodahost, 2017; Lim, 2022). When community sample estimates are isolated from overall odds ratios, the association is weaker but still present. These are summarised in the table below. Most of these studies suffer from high heterogeneity, reducing confidence in these estimates.

Odd Ratios Among Community Samples - Tattoos and Blood-borne Viruses				
Pathogen	**Meta-analysis**	**Odds Ratio (95% CI)**	**Studies**	**I-square**
Hepatitis B (HBV)	Lim, 2022	1.41 (0.98-2.03)[1]	16	85%
	Jafari, 2012	1.47 (1.12, 2.2)	8	58%
Hepatitis C (HCV)	Lim, 2022	2.94 (2.32-3.73)	18	70%
	Khodadost, 2017	2.38 (1.83, 3.10)	43	78%
	Jafari, 2010	2.79 (1.95, 4.00)	24	75%
HIV	Lim, 2022	2.73 (1.35, 5.54)	5	64%

[1] Adjusted for publication bias.

Until recently, most body modification businesses 'reprocessed' used instruments with enzymatic cleaners and autoclaves. This is a labour-intensive process with many failure points, requiring checks and challenge testing (pp.30-34, CIEH, 2013; NEHA, 2022). There has been a transition to single-use tools which greatly simplifies this process, i.e. those used in so called 'disposable studios'. However, some studios retain autoclaves to sterilize jewellery, single-use tools, or parts of tools, complicating the picture (NEHA, 2022). These hybrid approaches may create opportunities for microbial cross-contamination if processes are not carefully validated.

Since 2010, there has been growing evidence on the possible harms of tattoo inks (Klügl, 2010; Kluger, 2012; Serup, 2017; Schubert, 2023). Pigments for such inks are not always designed for internal use, being originally manufactured for cosmetics, construction, or automobile industries (Laux, 2016). Impurities such as undeclared heavy metals, preservatives, and binders can act as irritants and allergens (Giulbudagian, 2020, Piccinini, 2016). Strong evidence suggests tattoo pigment is gradually absorbed into the body via lymph nodes, leading to its presence within organs (WHO, 2023[1]). The effect of this is unknown, but lymphoma is a possible risk. This is now the focus of several longitudinal studies by the WHO's International Agency for Research on Cancer (WHO, 2023[2]).

Another risk is microbial contamination of ink, which can occur at multiple stages during production or distribution, or at point-of-use (Deickman, 2016). Use of non-sterile water or non-sterile mixing cups are frequently implicated for point-of-use (Conaglen, 2013). In 2016, use of unsterilised water in a piercing aftercare solution led to a national outbreak of 160 *Pseudomonas aeruginosa* infections (Shirdley 2018; Evans, 2018).

In terms of adverse events, UK prevalence of infection originating from tattoo & piercing procedures is unknown, as it is not notifiable (Fenelon, 2023). A 2013 literature review for the CIEH also concluded available literature is sparse (Aiyedun, 2013). Surveys among clients do have cause for concern though. Among those pierced in 2008 (UK), Bone found 8% experienced complications, with 13% of those being serious enough to warrant seeking further help. In total, 0.5% to 3% were admitted to hospital (Bone, 2008). A systematic review by Deickmann meanwhile reports 0.5% to 6% of those with tattoos experienced bacterial infections (2016). Another UK survey regarding any procedure, found that 2% experienced infections (RSPH, 2019).

Complicating the epidemiological picture is the fact that causes are difficult to differentiate. Typical signs of infection (e.g. swollen, bleeding, and discoloured skin) may be due to poor technique, ink or jewellery allergies, cross-contamination, or client behaviour (Wenzel, 2013; p.35 NEHA, 2022)[2]. In 2017, a tattoo client ignored warnings to not go swimming and subsequently died from *Vibrio vulnificus* induced septic shock (Hendren, 2017).

There are, however, indications of poor hygiene practices being present in the industry. Public Health England sampling surveys of tattoo/piercing premises in 2013 (XR14) and 2019 (XR36)

[2] Further, clients unfamiliar with the tattoo healing process may confuse elements of the normal healing process with bacterial infections e.g. inflammation and plasma discharge (NEHA, 2022).

both detected elevated bacterial counts. Study XR14 (~600 samples) found 1.5% of treatment areas had *Staphylococcus* and 6% high aerobic colony counts. Study XR36 meanwhile found harmful organisms in 25% of green soaps (tattoo disinfectant) and 20% of inks. Only 54% of premises had completely satisfactory results (Fenelon, 2023).

2. Literature Review

Reducing the risks of infection and blood-borne pathogens requires strict adherence to a comprehensive set of procedures. These can be categorized under hygiene practices, structural elements, and management controls, similar to the Food Hygiene Rating Scheme utilised in food hygiene inspections (FSA, 2021). A non-exhaustive list of recommendations has been summarised below from well-regarded standards.

Hygiene	Structure	Management
Effective handwashing	Suitable premises layout	Staff IPAC training
Use of nitrile gloves; washing hands prior to gloving; covering wounds.	Handbasins (ideally foot operated) with hot water, soap, and paper towels	Hygiene procedures, cleaning procedures, and cleaning schedule(s)
Practices to avoid cross-contamination	Designated 'clean rooms' for re-processing instruments	Autoclave training, maintenance, and validation
Correct procedure technique that does not introduce contaminants	Separate deep sink with hot/cold water for instrument washing	Client health screening, informed consent, and aftercare
Appropriate sharps handling and disposal	Suitable storage for needles, instruments, inks, etc.	Emergency procedures and first aid
Ink dilution with sterile water in sterile vessels (e.g. ink pots)	Air filtration to reduce airborne contamination (particularly for branding procedures) (Only: NEHA, 2022)	Record keeping for cleaning, sterilization, autoclave cycles, needlesticks, & accidents
Use of ultra-sonic baths for instrument cleaning	Sufficient light levels	Ink management, expiry & source
PPE where splashing of blood and body fluids is reasonably expected	Suitable operating bench and chair with non-porous surfaces	Public liability insurance
Appropriate Tuberculocidal disinfectants used, appropriate dilutions and contact time	Smooth, durable, impervious surface materials than can be easily disinfected	Employee immunisation (e.g. Hepatitis B, Tetanus); sick employee policy
(CIEH, 2013; BSI 2020; NEHA 2022)		

There are no national standards regarding appropriate practice but there is guidance (the "Toolkit") created jointly by the Charted Institute of Environmental Health (CIEH), Public Health England, and industry representatives (CIEH, 2013). However, it was released in 2013, and may not reflect current practice - which places greater emphasis on disposables and

Statim-like point-of-use autoclaves (NEHA, 2022). Nevertheless, UKHSA scientists have highlighted it would be helpful to know industry utilization (Fenelon, 2023).

The CIEH Toolkit was created in part to be an authoritative source of information for regulatory officers. If EHOs are to regulate the body modification industry in any format, it is important that they have the requisite skills and knowledge to spot uncontrolled hazards. However, there is no data on whether current understanding is sufficient for tattoo/piercing studio inspections, or level of competence and training. In the US, industry representatives have criticised their regulators for overly prescriptive inspections that do not account for new approaches to sterilization, contributing to a culture of distrust (NEHA, 2022).

The regulations for body modification businesses vary widely across the UK. In most of England and Northern Ireland, registration is one-off for businesses, can only be revoked upon prosecution and must be granted if basic conditions are met. Inspection occurs only upon registration. EHOs have few powers and rely on Health & Safety legislation to address issues (RSPH, 2019). In London, however, councils grant annual licenses, with new inspections upon relicensing. Boroughs can set conditions for licensing and refuse granting them, with fines for unfit premises. Training is not required, but EHOs must assess practitioner competency (CIEH, 2013; RSPH, 2019; Peate, 2020).

Scottish regulations are similar to those in London. Licence period can be varied from 1-3 years, with inspection upon relicensing; Public Liability insurance is required. As of 2023, Wales has phased-in comprehensive regulations too. Welsh local authorities can serve formal notices, fines, and revoke licenses. Both businesses and practitioners must be licensed every 3 years and can be inspected unannounced. Approved training is mandatory and EHOs have standardised enforcement guidance (RSPH, 2019; Peate, 2020; Welsh Government, 2023).

Region	**Inspection rate**	**IPAC training**	**Public liability insurance**	**Regulations**
England & N. Ireland (except London)	Once (upon registration)	Not required	Not required	1. Local Government (Miscellaneous Provisions) Act 1982 2. Local Government (Miscellaneous Provisions) (NI) Order 1985
London	Annual	Not required	Sometimes required	London Local Authorities Act 1991
Scotland	1-3 years	Not required	Required	The Civic Government (Scotland) Act 1982, (Licensing of Skin Piercing and Tattooing) Order 2006
Wales	Upon registration & unannounced at discretion	Required	Required	Public Health (Wales) Act 2017

(RSPH, 2019)

This regulatory landscape has been criticised as inconsistent and lacking national standardisation (Chalmers; 2009). The registration system for England and N. Ireland in particular is regarded as unfit for purpose, giving little assurance to the public that premises are safe or practitioners appropriately trained (Perry, 2018; RSPH, 2019; Peate, 2020). Also, there is little intelligence to monitor if proper infection prevention and control (IPAC) practices are undertaken, as visits can only occur if Health and Safety reports are made.

On the other hand, there is no evidence to suggest the frequent inspection rate of London Boroughs improves overall standards. The depth and uniformity of such inspections is also uncertain. It can be said that perceived inadequacies of the registration system are what led Scotland and Wales updating their regulation in 2006 and 2017, respectively (Peate, 2020). Specific regulator guidance is available to improve consistency in both regions (RSPH, 2019).

The question of appropriate oversight takes place against a larger backdrop of deregulatory trends in food hygiene and health & safety. According to Tombs, the UK has transitioned from a 'social protection' regime to one of greatly reduced inspection and enforcement since the early 2000s (2016). Tombs and others, like the NGO 'Unchecked' argue this may undermine public health protections (2022). Currently, the body modification industry is, in essence, largely self-regulating in England outside London. It would be informative to assess if such self-regulation is working well.

As mentioned, management of body modification risks may be attained through health and safety regulations. Under the Health and Safety at Work etc. Act 1974, employers must take steps so far as is reasonably practicable to protect the health of employees and non-employees (UK Government, 1974). For instance, the risk of Hepatitis B transmission from needle sticks, blood, or body fluid exposure can be eliminated via immunisation for employees (p.22 CIEH, 2013). While some US states require this law (NEHA, 2022), in the UK this control could be the logical conclusion of a risk assessment. On the other hand, there is no Approved Code of Practice (ACOP) for piercing or tattoo premises, and the CIEH Toolkit is only guidance.

3. Method

This study used a qualitative design; semi-structured interviews (SSIs) were selected to obtain high-quality exploratory data from tattoo and piercing regulators. Ethical approval was granted by The University of the West of England (UWE) Ethics Committee. Reporting follows the Consolidated Criteria for Reporting Qualitative Studies (COREQ) (Tong, 2007).

As the landscape is understudied, an inductive approach was chosen over hypothesis testing. Interviews were chosen to provide depth among a small population, with follow-up questions that can explore unanticipated areas of note (OHID, 2018). SSIs were preferred to open interviews to collect data from broadly the same question set.

Recruitment and data collection was conducted by the study investigator: a male trainee EHO working in local government (MPH, MSc EH - in progress). He volunteers for the NEHA Body Art Committee, a public-private group updating environmental health code for US body art

facilities. This project partly inspired this UK-based study. Other relevant training includes short courses in IPAC, bloodborne pathogens, and inspecting body art facilities (see Appendices).

3.1 Recruitment

Data was collected from local authority (LA) environmental health departments in London and greater England, enabling comparisons between the experiences of regulators in different jurisdictions. London businesses have high levels of mandatory oversight, with the rest of England having relatively little. To recruit participants with adequate experience, purposive sampling was used (see table for inclusion/exclusion criteria). For both groups, LAs were contacted prioritised on population size; LAs serving larger districts tend to have officers who specialise in certain fields, meeting inclusion criteria and potentially adding depth to the interviews. Such districts are also more likely to have more tattoo/piercing businesses.

Participants were recruited via emailing LA environmental health departments. Posts about the study were also circulated on professional message boards (Knowledge Hub). The investigator had no prior relationship with participants. LA districts were listed by largest population size and contacted in batches of 20 until sufficient interviews were obtained.

	Inclusion Criteria	**Exclusion Criteria**
London Cohort	Any London based local authority environmental health officer who has inspected 5 or more piercing and/or tattoo premises in the last 5 years.	Environmental health officers who consult for tattoo/piercing studios. AND/OR Officers not working for a local authority. AND/OR Professionals from other fields, e.g. health & safety training only, private housing, public health.
Wider England Cohort	Any England based (excluding London) environmental health officer who has inspected 5 or more piercing and/or tattoo premises in the last 5 years.	
Both groups	Environmental health professionals who function as inspectors for piercing and/or tattoo premises but have alternative job titles. E.g. licensing officer, technician, trainee, health specialist.	

Note: An inclusion period of 5 years was selected to account for COVID-19 lockdowns when inspections were not carried out.

3.2 Sampling

Sampling size for qualitative studies is established by data saturation (Moser, 2018). A ‘saturation point’ is reached when further data collection adds little to no information beyond what has already been collected (Guest, 2008). This point must be decided during the study upon review of current results, ending further sampling. However, estimates can be made based on the data depth and participant variety (Moser 2018). While the participant variety

is unknown for this study, the depth of data is expected to be high - the nature of the profession requires EHOs to be well-educated and articulate.

Sample size was predetermined by data saturation estimates and pragmatic considerations for data processing[3]. Qualitative methodology literature suggests a lower limit of 5-6 interviews for collecting most themes, resulting in ~70% saturation (Morgan, 2002; Guest, 2006; Francis, 2010). Namey found 8 interviews led to 80% saturation; Morgan and Guest found 10-12 led to 90%[4] (Morgan, 2002; Guest, 2006; Namey, 2016). Mindful of this range, 6-10 interviews per cohort were initially sought, capped at 15 for time constraints.

3.3 Interview Framework

Interview questions were formulated from the research aims and questions, touching on three areas: a) regulatory capacity, b) suitability of legal frameworks and c) routinely detected issues. 'Regulatory capacity' refers to the expertise, knowledge, and confidence of officers as well as availability of the resources that they can draw on (e.g. training, standards, guidance). Without an informed approach, officers will not be able to properly advise businesses or spot practices that elevate risk.

Questions on the 'suitability of legal frameworks' queried on-the-ground practicalities of the law. What regulations are used, when are they used, and whether they are adequate for regulator goals. Questions on 'routinely detected issues' (e.g. poor hygiene) were designed to explore areas of concern in different jurisdictions (if any). When needed, 'tattoos' were clarified as excluding semi-permanent makeup/micro-pigmentation/micro-needling while 'piercings' referred to body piercing, excluding ear-lobes. For full questions, see Appendices.

Interview questions were first piloted (n=3), trimmed for time, and refined. To avoid bias during data collection, interview technique was practiced beforehand, aiming to adopt a neutral position (Grimm, 2010). Questions were designed as non-leading and open to avoid acquiescence bias, such as "What regulations do you use in this area?". The interviewer aimed to give neutral responses - "Mmm", "That's interesting", or "Okay" - with further prompts as appropriate. Questions of what the interviewer thought or had found so far were deferred until the interview was concluded.

3.4 Data Collection

Participant interviews were conducted 1-on-1 over Microsoft Teams for approximately 30 minutes between 14/07/2023 and 15/08/2023. 95% of participants consented to automated transcription and audio recording[5], which was supported by brief field notes. Transcripts were

[3] Statistical inference was not sought nor congruent with this approach, so probabilistic sampling for representativeness was unneeded.

[4] Braun and Clarke, the creators of Reflexive Thematic Analysis, have critiqued regularly used data saturation estimates as not in the spirit of their approach (2021). However, the data collection window was very short (6 weeks), so targets were necessary rather than a slower stepwise approach of collection-analysis-collection-analysis.

[5] One participant consented to automated transcription without audio recording.

checked for accuracy against audio recordings and anonymised. No repeat interviews were made, nor were transcripts/findings returned to participants for corrections or comments. No two participants were from the same LA.

Overall, 16 interviews were conducted for the England cohort. Due to a recording error, one interview was discarded and replaced. As analysis did not keep pace with collection, 15 interviews were collected before data saturation was found by 12 interviews. The remaining 3 were not analysed due to time constraints. For the London cohort, 6 interviews were conducted and analysed, leading to a total sample of 18 interviews.

Recruitment & Sign-up							
Cohort	Contacted	No Response	Declined	Accepted	Dropped Out	Discarded	Analysed
London	30	23	1 (no staff availability)	6	0	0	6/6
Wider England	60	41	2 (no staff availability)	17	1 (no reason given)	1 (recording error)	12/15
						Total:	**18**

Most participants were environmental health generalists (83%), working (or having worked) in a variety of areas. Areas included food hygiene, housing, environmental protection, public health, health & safety, and licensing. The remaining primarily worked or specialised in health & safety (17%). Many participants were highly experienced: 82% had 10 or more years experience, and 38% had 20 or more years. London had more male participants, but there was a roughly even gender split overall.

Sample Characteristics		**London**	**W. England**	**Total**
Gender	Male Female	83% (5) 17% (1)	42% (5) 58% (7)	56% (10) 44% (8)
Experience in role	0-3 years 4-9 years 10-19 years 20+ years	0% 17% (1) 50% (3) 33% (2)	8% (1) 8% (1) 42% (5) 42% (5)	6% (1) 12% (2) 44% (8) 38% (7)
Expertise	Environmental Health generalist Health & Safety specialism Licensing only Other	66% (4) 33% (2) 0% 0%	92% (11) 8% (1) 0% 0%	83% (15) 17% (3) 0% 0%

3.5 Data Analysis

Transcripts were analysed deductively using Braun and Clarke's six-phase Reflexive Thematic Analysis process (2006, 2022). This 'Big Q' approach understands qualitative analysis as necessarily subjective, acknowledging bias in interpretation rather than attempting to fully eliminate it. This places less emphasis on reliability and generalisability as findings (i.e.

interpretations) may differ from researcher to researcher according to their value framework (Braun, 2022). Reflexivity notes can be found in the Appendices. Reflexive thematic analysis was used rather than codebook thematic analysis, which is limited to predetermined codes based on prior data (Byrne, 2021). Limited literature in this area would make determining those codes challenging.

Transcripts were reviewed for data familiarisation and coded semantically (via explicit meaning) by the study investigator. An initial attempt in Nvivo generated 330 codes, which proved difficult to manipulate. Transcripts were re-coded on paper with revised codes before being used to generate initial themes. These themes were developed in an iterative approach and checked against transcripts, broadening or subcategorizing as appropriate.

Major themes were chosen from concepts that were repeatedly raised by participants and were highly relevant to the research questions. If raised less frequently, but still had bearing, they were considered as a minor theme. Finally, themes were defined, named, and written up. A reflexivity journal was kept for noting coding rationale, and reflecting on personal biases, assumptions, and considerations in this process (Braun, 2022).

4. Findings

Analysis of the 18 interviews generated several interconnected major themes, largely revolving around inconsistency and outdated legislation: 1) inconsistency from localised regulation, 2) problematic handwash provisions, 3) qualifications needed but not required, 4) limitations on enforcement action. There was a further minor theme, of positive viewpoints of tattooists and piercers in general: 5) industry self-regulation.

4.1 Theme 1: Inconsistency from Localised Regulation

Participants in wider England were generally not satisfied with the regulatory framework they operated under. Descriptions of the practices were not always consistent and showed attempts to move beyond what were seen as dated Byelaws. London participants had far fewer consistency issues but did have different rates of inspection.

4.1.1 Registration & Standards in Wider England

The wider England registration system was notable for a variety of regulatory approaches. This occurs for two reasons: differing interpretations of legislation, and differing investment of LAs in regulating this area. While several participants mentioned utilising working groups to help standardise, in theory, adjacent areas could be very inconsistent in their approach.

As the CIEH states, 'there may be some local authorities which do not have such registration procedures in place and are relying on the general legislation to control these activities' (p.8 CIEH, 2013). Of those interviewed, all worked for LAs that had adopted the The Local Government (Miscellaneous Provisions) Act 1982 (LGMPA), and the model Byelaws under them. The consensus was the LGMPA is very limiting, being only a registration process and not permitting further contact.

"We only go on their first day essentially. It's the best they'll ever be. … You're having to make a judgment in terms of how likely they are to … suddenly start declining in terms of the standards". [#822England]

"There's no obligation of statutory requirement on the local authority to inspect against any adopted bylaws." [#445England]

This is significant as it is the primary legislation that regulates this area for wider England. Previously, EHOs could inspect workplaces under Health and Safety at Work etc. Act 1974 (HASAWA) at any reasonable time, including tattooing and piercing premises. This changed in 2011, with the HSE restricting health and safety inspections to a short list of priority areas, or being intelligence led (typically complaints) (James, 2012; HSE, 2023[4]). Interviews did reveal that opportunities to reinspect occur when businesses move premises, and sometimes if they gain new staff, if LAs choose to interview them in person.

Many participants did not have a high opinion of the model Bylaws that could be adopted, describing them as 'useless', 'not worth the paper' and 'slightly better than rubbish' (#303, #445, #822). This was due to their simplicity, their ambiguity, and age (now over 40 years)

leaving them inadequate to control risk. While they may have been adequate when "there were 5 tattooists in the borough" (#677), there was discussion of how the Byelaws did not reflect modern infection control, trends in tattooing/piercing, or conceptions of hygiene.

"It's based on a 1982 Act. Things have moved on tremendously since then. I would argue it's not fit for purpose." [#555England]

"That's where the Byelaws have not really moved with the times, because you don't come across any coil-operated tattooists anymore. They're all using these wireless pens." [#885]

Wireless or rotary tattoo machines are a popular industry trend as they are quieter and easier to manipulate (NEHA, 2022). However, many brands cannot be autoclaved and rely on protective 'wrapping' and needle cartridges with suitable backflow membranes to avoid contamination (Toronto Public Heath, 2016). The Byelaws do not account for such mechanisms and cannot be easier updated to reflect such technological developments:

"They are very outdated and we have looked into additional bylaws, but it's a lengthy process, well lengthy and resource intensive, and comes with a lot of costs." [#445England]

As many participants considered the Byelaws very basic or inadequate, some said they sought standards more in line with the 2013 CIEH Toolkit or the 2020 British Standards EN 17169. The latter has been adopted as a European standard for tattooing (BSI, 2020). This document is used by regulators as both a standard and to generate inspection pro-formas. However, being copyrighted material it lacks the distinct advantage of the CIEH Toolkit in terms of circulation and sharing with businesses.

"Generally, all I do is I'll just go through the Byelaws with the operators when I go out and do a visit, and literally just tick them off as I go along". [#822England]

"In terms of the British Standards for tattooing, safe and hygienic practice, I would say that that correlates more with what we do on an inspection than the bylaws. … That kind of illustrates the current status of the bylaws in the they are inadequate really to meet uh, or to allow or to instruct a tattoo or piercing practitioner or business to control their risks". [#555England]

Even with a small sample, this illustrates the range of possible inspections standards. None, when LGMPA/Byelaws are not adopted; the model Bylaws largely unchanged since 1982; the 2013 CEIH Toolkit; and the 2020 BS EN 17169. This inconsistency at a district level leads to a fragmented regulatory landscape, both suboptimal and unfair to industry. Some businesses will enjoy lax standards, or worse, poor performers can move to areas where standards are low. Several participants did mention utilising regional working groups, which could be used for consistency, but this issue was not explored in detail.

Among the 12 England participants analysed, there was also inconsistency in the registration process itself. Although all participants inspect, a few noted LAs do not have to, and alluded to some simply sending a registration upon receiving the details.

One participant's LA sends out the registration and then organises an inspection in post. Most inspect first and register the applicant soon after (hopefully compliant, but possibly not). Unexpectedly, several delay registrations post-inspection until compliance is achieved. Participants from these LAs were careful to clarify this was not a refusal, but putting the registration on hold until issues were addressed.

"We'll withhold register until we're happy that they've got the right things in place. Obviously we can't refuse a registration, but will say, you know, we want you to meet these standards before we're prepared to sign you off basically." [#245England]

Follow-up questions revealed two types. A 'soft delay', where the regulators would eventually release the registration if pressed. Meanwhile, a 'hard delay', where a registration would remain on hold even if challenged. These types are summarised in the table.

Type	Effects on Registration	Participants
A - Immediate registration with no inspection/interview	Compliance not checked	None in study
B - Immediate registration with inspection/interview after	Compliance is retrospectively checked	#885
C - Inspection/interview, then registration	Inspections check compliance	#822, #303, #555, #491, #589
D - Inspection/interview, potential soft delay	Applicants told they must be compliant. Registration will eventually be granted if challenged.	#654
E - Inspection/interview, potential hard delay	Applicants cannot complete registration until compliant	#245, #360

The hard and soft delay approaches are closer to a licensing process than a registration one, whereby granting is conditional on meeting certain standards. Normally, for approaches A, B, & C, if the premises are non-compliant, and informal approaches fail, the only recourse is prosecution. This is an expensive and time-intensive exercise which may not succeed, limiting its use. Interestingly, participants using hard delays (E), stood out as being confident that their regulatory framework could control risk. Most others were negative.

"We try not to give the registration until we're happy with the standards … but we're conscious that if we're challenged … we would be in a difficult situation, we would have to give them it and then immediately they would be noncompliant with the byelaws." [#654]

This quote epitomizes the dilemma regulators face. If businesses do not meet the standard, and insist on not meeting the standard, regulators may not be able to act.

4.1.2 Licensing & Standards in London

All London participants considered their regulatory framework as suitable (even if somewhat 'clunky' [#199]) for controlling risk in tattoo and piercing premises. Under the London Local Authorities Act, all such premises must be annually licensed, for which LAs can set terms and conditions for public safety, suitable practitioner qualifications, and hygienic premises and equipment (1991). This creates a broad mandate to set conditions as considered appropriate.

"It's fairly robust because of our conditions ... particularly in regards to infection control" [#199London]

These conditions can be changed with a 3-month lag period, which allows continuous updating as necessary. This could lead to a diverse range of conditions, but London participants had comparatively little variation in their standards. This was due to utilising the London Special Treatments Working Group, which has a unified process of setting licensing terms and conditions.

"All the London LAs they get together and they kind of adopt the same thing." [#311]

"[London LAs] do tend to adopt very similar regulations, but then each local authority could have slight nuance… changes in their regulations and conditions on how they regulate it" [#990London]

A unique condition mentioned for one borough, was a ban on genital piercings; the regulators considering them high-risk procedures[6]. The ability to ban services outright was surprising - quite a powerful tool for regulators, but one that has potential be used inappropriately.

Most London LAs are part of the working group, leading to far more consistency than wider England. This group also serves as a hub for training and sharing materials, helping cement a similar regulatory approach. One area that was inconsistent was the regularity of inspections. While premises must renew their license annually, the decision to inspect lies with the LA. Each participant's department used internal risk-rating of businesses to guide inspection rate. Some were formalised, while others sounded more 'off-the-cuff'.

"Often it's a yearly inspection, at times you might sort of risk assess because, you know, a lot of local authorities have faced a lot of resourcing issues over the years. … I've heard that that's been happening quite a bit now." [#311London]

"Investigator: So how often do they get inspected? Typically these days.
Participant: Only if we get complaints now, yeah.
Investigator: Oh really? So if I got licensed two or three years ago and there's no complaints?
Participant: If you renew your license, nothing's changed, no practitioners, you won't hear or see from us." [#223London]

Other participants cited a maximum of 2 years between inspections. Under strained budgeting and/or staffing difficulties there is a threat is that this area slips further into the background, supplanted by statutory duties.

[6] Participant unnamed for confidentiality reasons.

"There's a lot of work to be done in each local authority. Probably nobody puts that much attention on special treatments." [#731London]

4.1.3 Inconsistency from Localised Regulation - Theme Takeaway

The key legislation that wider England utilises is seen as outdated and unfit for purpose among most participants. This leads to inconsistent approaches as some regulators use more modern standards to guide inspections, whereas others follow the Byelaws as they are. There was also variation in the registration process itself, with a few participants taking a 'delay' approach to ensure compliance. In London, participants stated there was less variation in standards, helped by joint decision-making in their working group and adopting similar conditions. However, London LAs do risk-rate their premises differently and some may not re-visit for extended periods.

4.2 Theme 2: Problematic Handwash Provisions

Tying in with the inconsistency of the first theme, a common problem was interpretation of the model Byelaws for handwash and equipment sink provisions.

4.2.1 Wider England Participants

When England participants were asked about issues they routinely encountered, handwash basins were cited most. Many concerns revolved around substandard implementation and proximity to the operating area.

"Handwash facilities are usually one of the first things we are always focusing on. Have you got a handwash basin? Is it solely for handwashing? Has it got hot water and is it in the treatment area?" [#885England]

"They'll want to get away with using a handwash basin in the toilet, or using one that's in like a shared kitchen area, or one that's a bit of distance from the treatment room. … This is the main one where we sort of butt heads with people" [#245England]

These provisions are a significant concern - handwashing is a key infection control activity. In tattooing and piercing it should be performed before and after procedures, prior to handling sterile instruments/jewellery, any time gloves are compromised, or infectious material is handled. One professional from the US Association of American Piercers stated he handwashes at least twice per operation (APP, 2023). For this to occur reliably, facilities must be readily available. Dedicated basins avoid conflict with other uses and possible cross-contamination - a common precaution in all well-regarded standards (CIEH, 2013; BSI, 2020; NEHA 2022).

"Now my interpretation of [handwash basins], which is supported by my line manager and peers is: You've got to have a sink in the room where you're piercing skin." [#112England]

"At the moment … [it] just says on the premises, so the legislation needs to be updated" [#491England]

Not all regulators agreed on what was required by the legislation, which has implications for consistency. The Byelaws (where adopted) require '(i) suitable and sufficient washing facilities appropriately located for the sole use of operators, including an adequate and constant supply of clean hot and cold water, soap or detergent; and (ii) suitable and sufficient sanitary accommodation for operators.' (CIEH, 2013). The ambiguity of the statements 'suitable and sufficient', 'sole use', 'adequate and constant' permits various interpretations. There is no indication of proximity, how many staff per basin, whether portable facilities are permissible, and if they must be distinct from toilet washbasins.

This lack of clarity creates inconsistency and potentially generates conflict between regulators and operators. Worse, for LAs that do not inspect, wholly inadequate interpretations may be followed - meaning handwashing is infrequent or less sanitary.

"The legislation isn't very strong and prescriptive on this. So people have believed that they can put in a temporary, sort of portable hand basin and interpret that as a constant supply of hot and cool running water" [#654England]

"We've seen a trend in people using these portable camping handwash basins where you're having to change the water every few hours, but then they weren't." [#445England]

Where regulators pushed for handwash basins in operating rooms, portable or camping basins are sometimes purchased. Their limitations, such as poor water pressure, requiring water changes, and regularly adding hot water make them impractical at best. Regulators may be concerned such arrangements are a tick-box exercise, with little actual use. Unfortunately, commonly used guidance does not clarify the matter. The CIEH Toolkit states "hand washing facilities should be adequate and conveniently located in treatment areas" with specifics for good design (p.16, 2013). However, it does not specify that toilet basins or portable basins cannot be used.

Regulators also mentioned issues around equipment sinks, with similar tensions between ambiguous Byelaws and good practice. When all studios reprocessed instruments, equipment sinks were needed to scrub down instruments prior to sterilization. The trend towards single use has led some operators in to question their necessity.

"The sort of thing that gets thrown back at us is saying 'Well, everything is single use. Why would we need an equipment sink?' and the reality is they do need an equipment sink because they have things like bottles that are used for green soap, or disinfectant, or kidney dishes…" [#555England]

"They say they're never gonna use equipment that needs washing. … if they get a piercer who uses a certain type of equipment they need different facilities" [#654England]

The Byelaws require 'adequate' facilities for cleaning (without specifying), and as well as 'adequate and constant hot and cold water'. Once again, whether washing equipment in the

toilet sink is permissible is not mentioned. The literature suggests such practice would create opportunities for cross-contamination, such as aerosols (Bergström, 2015; Schmidt, 2015).

This speaks to the age of the Byelaws, which are not congruent with modern approaches to hygiene and industry trends. While beyond the scope of this paper, they are also not helpful for novel procedures, particularly in the beauty industry. As highlighted, ambiguous language means there is a need for local interpretation, which then generates inconsistency and potentially regulator-industry conflict. This may also lead to subpar standards for structural design, which impacts the frequency and effectiveness of key infection control measures.

4.2.2 London Participants

When London participants were asked about structural/routine issues or routine problems in premises, the most common response was that there were none. One regulator brought up handwash basins as a recurrent issue among special treatments generally, which may have included businesses such as acupuncture, electrolysis, and semi-permanent make-up (#199).

The lack of mention of hand-wash basins may be due to prescriptive licensing conditions, which are difficult to dispute. Any time an element is considered insufficient or risky to regulators, the license is simply not granted. There is also a standard established across London due to repeat inspections, so novice practitioners learn what is acceptable from day one.

"Participant: I'd have to leave there being 99% sure that when I walk away, no one was gonna end up leaving there one day with a something horrible, so yeah.
Investigator: Or the license doesn't get issued?
Participant: Yeah." [#199London]

"Participant: It could be different in London because they get inspected every year. And what happens is there's a standard. … The tattooists are made aware that this is how you do things." [#311London]

4.2.3 Problematic Handwash Provisions - Theme Takeaway

Inadequate handwash provisions were the most frequent issue for wider England participants. This may be due to differing industry-regulator interpretations of the Byelaws and a lack of agreed upon guidance in the area. Here, even the CIEH Toolkit is not definitive. As basins are a key requisite for infection control this is quite problematic. For London participants, meanwhile, there was only one mention of handwash basins and it is not clear if this was about piecing/tattoo premises specifically. London regulators likely benefit from licensing conditions which are less ambiguous and must be adhered to.

4.3 Theme 3: Qualifications Needed but Not Required

All London participants (6), and most wider England ones (9), commented on the lack of standardised qualifications for tattooists. Most tattooists and piercers learn via informal

apprenticeship at existing studios, but some are self-taught (APP 2023; Kluger, 2015). There are a variety of tattoo 'schools', but none are accredited with OFQUAL.

For piercing, the situation was similar until 2022, when a 500-hour Level 3 Body Piercing Diploma became available (OFQUAL, 2023[2]). Industry uptake is yet to be seen - the UK Association of Professional Piercers does not recommend any course, stating they are a 'money-making enterprise' (UKAPP, 2023). On contacting them, they recommended learning through shadowing, conferences, and Facebook forums.

4.2.1 Qualifications in London

In London, suitable training is a license condition for most special treatments. This often takes the form of a named qualification, with minimum standards set for different therapies (see table for examples). Tattooing and piercing are exceptions, despite being considered 'high risk treatments'. Several London participants commented on this:

"There is no recognized qualification which is the bane of our life, especially as the minimum requirement for like manicure/pedicure is a Level 2, that's like 280 odd hours" [#223London]

"Sports massage [is a] Level 4 as you need to understand anatomy. You can do real damage if you do it wrong". [#311London]

Treatment	**Minimum Qualification Accepted (Merton, Richmond, Wandsworth)**
Ear Piercing Only Nail Extensions Manicures Pedicures Sunbeds	Level 2 Awards
Massage Electrolysis Steam Rooms/Spa	Level 3 Certificates/Diplomas
Laser/IPL Advanced Electrolysis Semi-Permanent Makeup (SPM) Micro-pigmentation	Level 4 Certificates/Diplomas
Acupuncture	Diploma or BSc(Hons)
Tattooing Body Piercing Other body modification: beading, micro dermal anchors	No accredited qualifications available. References showing 2 years experience, OR Evidence showing current training with tattooist with 2 years experience.

(RSP, 2023)

The quoted regulators do not see the requirements for tattooing/piercing as proportionate in comparison to other therapies. SPM and acupuncture could be considered the lower risk analogues to tattooing/piercing, as they penetrate skin superficially and typically do not generate blood and plasma discharge (Lawrance, 2023). For Merton, Richmond and Wandsworth, the SPM minimum is broadly equivalent to the first year of a bachelor's degree (City&Guilds, 2023). Some London LAs do require a Level 2 IPAC certificate for tattoo/piercing, but #223 viewed this an inadequate in isolation.

"You can do it for as little as £20 on the net. If you fail, it gives you the answers and you're allowed to resit it for free. So we get certificates 100% compliant done and it's like, okay." [#223London]

This signals a distrust of current market offerings, some of which can be gamed. There are many general Level 2 IPAC certificates available, ranging from 3 to 70+ hours (OFQUAL, 2023[1]) and appearing to vary in quality. Similarly, portfolios and claims of experience are not necessarily trustworthy. This might indicate low trust in applicants themselves.

"With apprenticeships, I always have to request like at least 20 case studies in order to assess them." [#731London]

"At the moment we just relying on their honestly for when we ask for an experience portfolio … it could belong to anyone." [#311London]

While London regulators can vary their terms and conditions for tattoo/piercing licenses, a lack of trusted credentials means competency must be confirmed by other means. Typically this means a 1-on-1 interview - a time-consuming exercise, which must be replicated for each applicant. One London regulator noted it would be a 'major time-saver' to simply check if a OFQUAL qualification is present (#199).

4.3.2 Qualifications in Wider England

In wider England, training of any type (informal apprenticeships, courses, IPAC certificates) for tattooists/piercers is not required for registration purposes. Participants still brought up qualifications, however, especially in relation to poor knowledge or under-trained practitioners.

"There's quite a lack of understanding and there's no formal requirement for a level of training for tattooists. … That's a very big worry for us. Often, we're actually educating them as we're talking to them". [#654England]

"When you get an application, they're pretty poor about their knowledge" [#491England]

Further, as registration only provides for one inspection opportunity (if they do not move) there is reliance on practitioners to perform in safe ways. This places importance on the need for external benchmarks such as qualifications.

"Generally structure is less of an issue … The problem comes around the practices. It's around the training … obviously you can't be there all the time" [#303England]

There's an emphasis here on the unseen. The premises themselves can be inspected and advised on, but plenty of risk is dependent on how practitioners carry out procedures. Knowledge and training are seen as underpinning this. For instance, one study interview question explored issues in business management and record-keeping. It became apparent this area was difficult to assess for England participants.

"To be fair a lot of the time because the most of these will be new registrations, they've bought the autoclave. It's brand new, it's actually covered from, you know, being a new piece of equipment. So they find they don't need to get it inspected straight away." [#245England].

As there is no established record to check (such as autoclave logs), there's a greater reliance on the practitioners to perform safely. As it happens, one London regulator raised the issue of a poorly functioning autoclave which resulted in a Prohibition Notice[7]. In a similar fashion, many regulators commented that the premises they inspected appeared clean and hygienic. However, upon interviewing practitioners, problems emerged around chemical sanitisation:

"The feedback I'm getting from officers is that they'll use a product that isn't British Standard compliant, and so they might be using 'Flash'." [#445England]

"Have they got the right cleaning products. More importantly, if they need diluting are they diluting it correctly, have they got the right contact time." [#885England]

"I'll say to them, 'Okay, this is antibacterial cleaning spray. Do you understand why this isn't okay in skin piercing?' and they can't answer the question. A lot of them. … That's probably the most worrying for me because not only practically is it a risk, but it means they don't understand. They don't understand they're dealing with bloodborne viruses" [#112England]

The greatest contamination risk posed by treatments is blood-borne viruses such as HBV, HCV, and HIV, for which anti-bacterial cleaners are insufficient. As noted by #112, poor chemical disinfection knowledge was seen as very problematic - a sign of underappreciation of procedure risk. If basic sanitization steps are unclear, there may be other unseen areas which put clients at risk.

It was interesting to note another 'unseen' area - equipment and jewellery sterilization - was not a notable concern for many participants, despite direct questions about it. Trends in disposable studios have eliminated the need for most autoclaves. For the ones remaining (typically used by piercers), participants generally had little to comment on.

4.3.3 England and London - Competency Assessments

Many London and England participants discussed up how they use interviews to gauge competence in lieu of qualifications. While London regulators could in theory make visits to

[7] Participant number not included to avoid potential confidentiality breaches.

observe procedures in practice, practical hurdles were cited such as “being disturbing to clients” (#988London).

Interviews were conducted several ways, from a 1-hour telephone interview with a bank of questions to short in-person chats. Some roleplayed a client and went through a procedure step-by-step, observing and asking questions along the way. Accidents like needlestick injuries were also role-played. One experienced London regulator expressed pros and cons to the interview approach:

Early in interview:
“You get a good feel pretty quickly as to whether or not someone has actually completed an apprenticeship. They should be able to literally set up a station with their eyes closed and you know it should be very second nature to them even under pressure”. [#199London]

Later in interview:
“The tricky bit is to work out whether or not that individual has the competence. So that is the hardest bit and where we run into difficulties as obviously there are only so many questions you’re gonna ask, and more than likely they’ve been briefed by someone that’s been interviewed before … because you get the exact same answer. You get the perfect answer that you would have fed back to the person you’ve previously interviewed.” [#199London]

While interviews may indicate some things (like apprenticeship completion) the question of actual competency lingers. Again, the concern of gaming the system arises, perhaps with help from colleagues. Limited resources mean interviews cannot be exhaustive either. Another (experienced) participant highlighted asymmetrical knowledge, as most regulators are not experts in this area.

“It is difficult to assess that as an officer because we’re not tattooists.” [#990London]

Other participants acknowledged this knowledge is ‘not learnt in school’ (#998London) and ‘needs time to develop’ (#311London). This suggests competency assessment strongly hinges on regulator experience. As with practitioners, there is little by way of formal regulator training, although some used shadowing of more experienced colleagues, plus internal presentations. Overall these comments indicate that interviews are both time-consuming and not always reliable.

It was implicitly and explicitly suggested by many London and England participants that national qualifications would ‘give regulators confidence’ (#311London). One participant noted there could be minimum standards or membership of a trade body (#822England).

“There is no official concrete training that’s accepted for tattoo practitioners … and the negative obviously is inconsistency.” [#555England]

4.3.4 Qualifications Needed But Not Required - Theme Takeaway

A lack of recognised qualifications places additional regulatory burdens for London participants to assess practitioners. These could be potentially externalised if there were

trustworthy credentials. Wider England participants were concerned with knowledge gaps, particularly inadequate appreciations of risks and the effect this could have on practice. Qualifications were seen as a suitable tool to improve industry knowledge.

4.4 Theme 4: Limitations on Enforcement Action

For England participants there was a high reliance on informal approaches to secure compliance. This was due to limited enforcement options, a high threshold for formal action, and hesitation with using Health and Safety law.

4.4.1 Wider England Enforcement

Under the LGMPA 1982, if the premises are not compliant with the Byelaws, the only enforcement action available is prosecution. Prosecution is an expensive, time-consuming process for LAs, and is often considered an option of last resort. This will typically be codified within the LA's enforcement policy, which regulators must operate within.

"The reality is, is that we've not got any powers under the Miscellaneous Provisions Act to ensure compliance, which is a laborious process that achieves nothing in the interim". [#555England]

Health and Safety law has several pieces of legislations that could address risk in work environments, including HASAWA 1972, the Management Regs 1999, and COSHH 2002. However, these all have limitations in their application. COSHH and Management Regs risk assessments only need to be recorded if there are 5 or more employees. In piercing and tattoo studios this is rarely the case, meaning participants seldom had anything to examine.

"You can't refuse registration, so you would have to be thinking about is there a contravention of something else? … Now as a complication of risk assessments under H&S legislation, is that if it's just me and somebody else working in my studio, I don't have to write". [#589England]

Some regulators expressed wariness of using their HASAWA powers, even when problems are detected. Proactive inspections for tattoo and piercing businesses are not permitted under HSE guidance, LAC 67/2 (HSE, 2023), so there may be caution when and where Improvement Notices and Prohibition Notices are used.

"Investigator: When it comes to health and safety law … when would you reach for that? Participant: Well, you see, we have to be very careful in relation to this because there's direction in relation to use for proactive inspection" [#589England]

"You wouldn't believe how many EHOs I have to convince they can use the Health and Safety at Work powers for skin piercing activities." [#112England]

This presents a serious issue - regulators should not be overly cautious about using their powers and fail to act where there is risk to health. As mentioned, one London regulator described serving a Prohibition Notice (PN) on a poorly functioning autoclave that had been

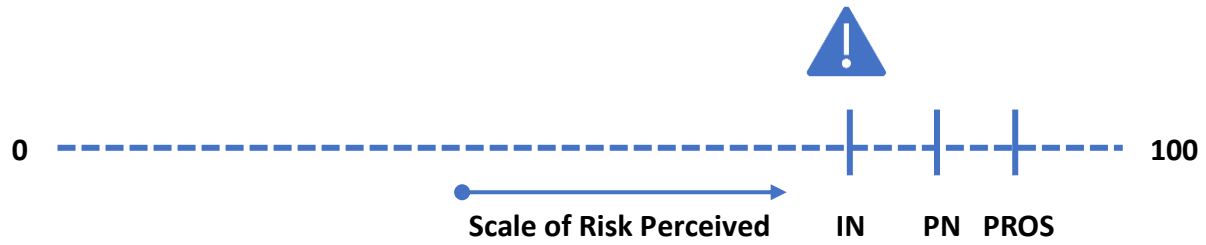
linked to several BBV cases. Later the HSE criticised this action, stating they should have used the alternative LLAA legislation available to them first (i.e. revoke the license). The participant disagreed, as the PN guaranteed no further use of the machine.

I invited some regulators to consider if they would use H&S notices for carpets or plants in the operating room if informal approaches were exhausted. It would be a stretch to consider either an imminent risk to health, but they certainly would not be conducive to good hygiene. It would be not permitted under the Byelaws either, but participants would not commit to enforcing such non-compliance.

"*We could. Not saying we would...*" [#491England]

"Like you said, plants or just minor things. No, we wouldn't be inclined to take any kind of formal action for these things because at the end of the day, our enforcement policy - can't speak for other authorities - but our enforcement policy is a staged approach to enforcement." [#112England]

H&S law can be used when there is imminent risk to health according to HSE guidance such as the Enforcement Management Model (HSE, 2023[3]). For wider England, this leaves a large 'enforcement gap' where only the most serious problems have formal options. The diagram below illustrates this concept: a regulator must perceive a high level of risk before the threshold for formal action is crossed. After that the options - improvement notice, prohibition notice, and prosecution - are clustered together.



"I think the Health and Safety at Work Act can be used really well but it's more having a really clear framework of the requirements. The clearer that it is, the easier it is to enforce or show risk." [#677England]

The caution around utilising H&S law could be mitigated with regulatory guidance. One participant said there was a strong need for a code of practice, pointing out that the CIEH Toolkit was not designed as an enforcement guide [#445England]. There is also the question of intelligence - unless there is a specific complaint, regulators are unaware of issues in the first place:

"If I went back to that same room in six months time, they might have put a fairy rug on the floor and some plants in the room, but I'm not gonna see that because once I've registered them, I'm probably never ever gonna go back there." [#122England]

4.4.2 Informal Approaches in Wider England

There appeared to be a heavy reliance on informal approaches to secure compliance in the registration process. This took several forms. Education featured often, with regulators sending the CIEH Toolkit, Byelaws, old HSE guides and other material. However, this wasn't without challenges.

"We guide them into what further information they need to get" [#654England]

"As soon as we've made a contact or somebody's registered, we send them the guidance, but they don't read it" [#491England]

A few participants called or emailed businesses ahead of inspections for a mini audit. Once they confirm they meet the standards, only then will they visit the premises. This is a shift towards a more advisory role. As there are few recourses for problems, the best option is achieving compliance first time round.

"I often send them a copy of the form that I'm going to be using for my inspection. So it enables us to focus in on the things rather than feeling 'Well, he's asking me cold. I can't do that.'" [#589England]

If needed, a few participants mentioned use of verbal or written warnings, even if further enforcement was unlikely. Operators could agree to withdraw or pause their registration until problems had been resolved.

"The tactic we use here at [LA] is: 'You need to do that to be compliant with the bylaws, so I don't want to register you yet, because if I do, you're automatically not complying with the bylaws and you're committing an offence'." [#112England]

This may be effective due to asymmetrical information. Operators may not realise registrations cannot be refused, and regulators benefit from this (whether internationally or not).

"It's just an administrative exercise, whereas a lot of the people who are registering see it as almost like a license, and it's a pass or fail, and it's quite serious ... they see it as quite a restricted process." [#822England]

Language on LA websites for some participants lent itself to this impression. For instance, registrations can be found in the 'Licensing' section. To 'apply', you must email 'licensing@council.gov.uk'. If compliance is gained from this impression, it is precarious. Wider awareness of the LGMPA terms could mean EHOs face more difficulty convincing people to comply.

4.4.3 Enforcing on Scratchers

'Scratchers' are unregistered or unlicensed practitioners operating illegally, often out of domestic premises. They are associated with unsanitary premises and higher risk of BBVs

(Fenelon, 2023; Conaglen, 2013; Aiyedun, 2013). London regulators did not have many enforcement issues generally, but scratchers were mentioned a few times.

"I told you about the one where we couldn't use health and safety because we had a peripatetic person that was going from house to house … and actually really injuring people. … We actually argued quite strongly with the HSE that is was their responsibility to undertake the investigation, but they wouldn't because it didn't make it to their thresholds." [#303England]

"It's the real not very nice end of this business that Health & Safety at Work Act doesn't help us at all". [#303England]

As the HSE are the enforcing authority for domestic premises, LAs cannot serve notices on domestic businesses even if they know them to be dangerous. However, the HSE has risk thresholds that must be met before they take action. These are unlikely to be exceeded for scratchers. Several wider England participants stated similar issues:

"A tricky one here. For us quite a lot of people now are operating from home premises … We can't necessarily use HASAWA at all these home businesses and the byelaws aren't suitable anymore at all in the sense of that." [#677England]

Participants raising this issue either requested the HSE investigate or that enforcement powers were transferred to their LA. These attempts were largely unsuccessful. One participant said they may have opportunity for a transfer but could not speak on it. In cases of 'significant' harm from infection/contamination, magistrates may grant LAs Part 2A orders that allow them to enforce on domestic premises (PHE, 2018). This option was rarely brought up by interviewees, and only to say they did not have experience in using them.

4.4.4 Recommendations for National Licensing

Almost all participants suggested a national licencing scheme would be beneficial, including some London participants. It was suggested this would resolve issues arising from the LGMPA and be beneficial to regulators and industry alike. For instance, practitioners that move from area to area would not have to reregister their license - it could follow them across the country.

"I would like to see a national licensing scheme and I think many, many of the operators and businesses also have actually said that they want consistency. And that would, I think, by having a national licensing scheme, would promote consistency between local authorities and consistency, fairness and consistency between areas." [#654England]

"There are some really good people out there who want to be the best, and be the best trained and provide the best products and they do really well. But they know they're completely undercut by a lot of people who just wanna make money." [#303England]

At time of writing, the Department of Health and Social Care is formulating a licensing scheme for beauty treatments such as fillers and PDO cogs (an invasive facial treatment). Many

regulators said they hoped tattoo and piercing treatments would be part of this. Interestingly, London regulators also held this view:

"My personal view is [the LLAA] should really be a national scheme… because then you've got a greater deal of control and also the industry as whole would understand what it's requirements are". [#990London]

However, there was also acknowledgement that there are already capacity issues in some LAs and additional statutory duties could overburden the system.

"That could be hefty. That could be a lot of work and lot of annual visits." [#677England]

"With the amount of work that is out there and the amount of work that comes in, I could, if I had the ability, I could put the whole of my team on this subject every single day." [#303England]

4.5 Theme 5: Industry Self-Regulation

A minor theme for both wider England and London was that some interviewees thought that many studios have high standards and perform well. This suggests that the industry self-regulates to some degree. Some England participants were confident about the industry, even while noting weaknesses in the registration system:

"Some of them are great, some of them are a bit, you know, rough around the edges, but generally fine" [#245England]

"99.99% of the time these people want to register, they want to do it properly. They want the certificate to show people that they're doing things above board. They pursue registration the way they should, and they're happy to see me. They're happy to take advice." [#112England]

Participant #112 later said that infection control is not always "where it needs to be", but that practitioners will generally take advice onboard. Along with #245 the sentiment is that while improvements can be made in some premises, they have a positive outlook. In London a comparison was drawn between tattooing and other special treatments they licensed, the beauty and aesthetics industry being of particular concern.

"I served one prohibition notice for like unsafe equipment, a tattoo premises, where I think I probably served about 6 at like these kind of beauty clinics" [#988London]

"To be honest, from my experience from all these years in comparison to other special treatment premises, I have found that often tattooists are more clinical" [#311London]

"[Tattooing] is a kind of competency-led industry … social media sort of regulates it a bit." [#990London]

These London participants considered 'traditional' tattooists overall as better established and presenting less risk. One England participant noted that while there may be risks, complaints are minimal. When there are complaints, they are usually concerning quality rather than safety. They attributed this to industry trends towards safety:

"But then looking at it the other way, we're not getting shedloads of complaints about skin piercers and tattooists because of them using disposables." [#491England]

Not all participants were optimistic about industry trends. One participant said "lots of things are really good changes" [#677England] but also acknowledged regulators are sometimes playing catch-up with new technology. One of these areas is rotary tattoo machines that use disposable needle cartridges. These cartridges must have a 'backflow membrane' to avoid cross-contamination of the internal recesses of the machine.

"80% of the time when you have a look inside the machine you can see pigment and I always get a Q-tip and I run it in and show them the pigment to show that the membranes failed in their cartridge." [#199London]

The same participant described how these machines were 'wrapped' (as they cannot be autoclaved). The wraps were either porous or so large that it would be soda-can sized. This throws doubt on whether practitioners are effectively self-regulating in all areas.

"They're not going to wrap it like that when they're using it, cause it's gonna be ridiculous to hold." [#199London]

4.5.1 Industry Self-Regulation - Theme Takeaway

Some regulators had an overall positive view of practitioners performing to a high standard, particularly in comparison to special treatments generally. Some of this may be due to trends in disposables and industry-driven improvements. However, there are still valid questions regarding the performance of newer equipment and how operators mitigate their drawbacks.

5. Discussion

5.1 Interpretation of Findings

This study aimed to explore what regulatory frameworks are being used in England for tattoo/piercing premises; how effective regulators feel they are in protecting public health; and what improvements would be beneficial to regulators to this end. These will each be considered in turn in relation to the findings.

5.1.1 Regulatory Frameworks

The results for wider England found all participant authorities have adopted the Byelaws made under the Local Government Miscellaneous Provisions Act 1982, although there were comments of knowing of other LAs who had not. As discussed in Themes 1 and 2, this legislation is seen as largely unfit for purpose, having not kept pace with modern hygiene standards. This has led some regulators to expect or ask for standards beyond them, secured through informal approaches. The LGMPA offers little in powers to secure compliance, aside from prosecution. Some regulators stated this is not a feasible option in most cases.

Participants found Byelaw language ambiguous, which led to differing regulatory approaches. As seen in Theme 2, handwash provisions were a common and contentious issue with industry among those interviewed. It is less clear if this theme extends to London too - only one participant brought it up. Opportunities for repeat inspections can occur when businesses move or bring in new staff, but overall intel is limited, and complaint driven.

London regulators can use the London Local Authorities Act 1991, permitting them to set their licensing conditions for tattoo/piercing premises within in each borough. Boroughs were largely consistent in their conditions, achieved through mutual agreement in the London Special Treatments Working group. According to participants, this has achieved a unified standard with only subtle area differences. Changes to the terms and conditions comes with a 3-month lag for approval. As licenses are annually renewed, regulators can inspect every year, but many risk-rated premises, revisiting high-performing ones only every 2-3 years.

Theme 4 explored Health and Safety regulations, with wider England participants commenting that they are useful, but have a high threshold for action. There was a wariness of using HASAWA notices in general and no committal to use them for moderate risks. Without proactive visits, there was generally a lack of intel too. Written risk assessments were rare as few premises had 5+ staff.

Both London and England participants discussed ‘scratchers’ and requesting the HSE to investigate domestic cases or transfer enforcement. Historically, all were rebuffed. Part 2A orders were only brought up occasionally, and mainly to say they had not used them, or were unsure how to use them.

5.1.2 Effectiveness in Protecting Public Health

Wider England participants generally commented that their regulatory framework was dated and insufficient - granting them limited intel and powers for corrective action. “It’s just an administrative exercise” (#822England). This echoes a critical review by Peate who states the registration system is inconsistent and ineffective in controlling risk (2020). Both the CIEH and RSPH have called for the UK Department of Health and Social Care to review this system (CIEH, 2020; RSPH 2019).

Several participants elaborated that the LGMPA may have been reasonable legislation at the time, when there were few practitioners in the area. One participant noted the growing popularity of body art over the years has changed the risk profile [#589England]. Indeed, tattoos have become mainstream - normalised in many workplaces and continuing to trend upwards (Perraudin, 2018; Thomas, 2019; Hotson, 2020). Body piercing was rarely seen in the developed world before the 1990s, but 20 years later it stands at 10% of the general population (Laumann, 2018; Bone, 2008).

Two regulators stated the LGMPA and Byelaws were sufficient to control risk. It is interesting to note these regulators worked in LAs that used hard delay approaches to registration. This is more akin to a licensing approach, setting conditions to be met before registration is granted.

Theme 4 found a heavy reliance on informal approaches to secure what participants considered suitable conditions. These included pre-inspection calls/audits, signposting or sending materials, or verbal/written warnings. Asymmetrical information meant some operators assumed registration was akin to a licensing procedure. This over-reliance on informal approaches is a precarious situation - LAs cannot enforce on moderately risky problems if the need arises. Fortunately, as exemplified in Theme 5, the majority of operators work to high standards and are willing to cooperate with regulators.

London participants commented they were largely satisfied that their legislative framework controls risk. The ability to reject licenses was important. One stated they will only grant the license if “99% confident” no-one will get hurt (#199London). Another commented that businesses understand the standards required in London, which may be due to repeated visits (#311London). Procedures can also be banned under this regime, with one regulator noting a prior workplace had banned genital piercings. This has both pros and cons - local mandates are quicker than national ones, but this could also be regulatory overreach. Lee notes while problems do occur with intimate body piercings there is little literature on either short or long-term complications (2018).

Unregistered/unlicensed practitioners, or ‘scratchers’ present a difficult area for LA regulators. While they present an area of high risk, they often operate on domestic premises. These are enforced by the HSE and participants were historically unsuccessful in convincing them to take action. Part 2A orders have been used on such operators successfully (Fenelon, 2023; Bradding, 2022), but participants did not bring them up as an enforcement option they would use. Interviews were unable to explore why this was. Arnold does report LAs having

substantial difficulties in their use, while transparency reports up to 2017 show a decreasing trend of using Part 2A orders for tattooing/piercing cases (Arnold, 2019; PHE, 2018).

5.1.3 A Qualified Industry?

In terms of what improvements would benefit regulators in protecting public health, a key theme for both London and England participants was the lack of recognised qualifications (Theme 3). This complicates regulation (who is competent?) and was concerning to participants from a knowledge perspective, particularly in wider England. These findings echo previous research in the area. Waugh suggested that tattoo operators may have inadequate knowledge of health issues and a 2023 survey found ~13% of practitioners did not believe tattooing could transmit blood-borne infections (Waugh, 2007; Martin, 2023). Meanwhile, an investigative study by UKHSA found frequent use of non-sterile water to mix inks, a well-known source of contamination (Fenelon, 2023).

Tattooing and piercing requires in-depth sanitation and there are many potential failure points. It may not be suitable that anyone can legally start doing it, without requisite training and oversight. This was exemplified by failures around proper chemical disinfection in Theme 3. One could argue, operators using substandard cleaners could be deliberate corner-cutting, as tuberculocidal disinfectants are expensive. However, if such products (e.g. Flash) are found in registration visits - the only time a positive impression *must* be made - it strongly indicates a knowledge gap.

It was suggested by interviewees that standardised qualifications could potentially fill such gaps in practitioner knowledge, create consistency in the industry, and reduce regulatory burden. Qualifications would “give regulators confidence” according to one participant (#311London). On the other hand, it is a fallacy to assume that training necessarily leads to good practice. Trained individuals may still take shortcuts or have poor attitudes, regardless of the certifications they hold.

There is sparse research on training for tattoo and piercing businesses that is not dated (e.g. Oberdorfer, 2004), but comparisons can be drawn from the food industry. A systematic review found food hygiene knowledge, attitude, and practice (KAP) was positively associated with training, but dependent on pedological approach, management culture, and other factors (Insfran-Rivarola, 2020). Another systematic review on pre and post effects of training on food hygiene found a positive effect, but also that many studies had a significant risk of bias (Young, 2020). If qualifications are mandated, well-designed pilots should be trialled to test knowledge uptake and suitability for practitioners.

Professional bodies for the tattoo and piercing industry state that multi-year informal apprenticeships are the best way to learn, as has been tradition for some time (UKAPP, 2023; APP, 2023; TPIU, 2023; Kluger, 2015). In fact, the UK Association of Professional Piercers does not recommend courses, saying they provide inadequate time to learn (UKAPP, 2023). Meanwhile the Tattoo and Piercing Industry Union (TPIU) was originally formed to rebuff introduction of National Occupation Standards (NOS) for tattooing and piercing (2023). NOS would have set professional standards for knowledge, performance, and values, and be a precursor for National Vocational Qualifications (i.e. portfolio-based credentials).

As steeped in tradition they may be, such apprenticeships are non-standardised (Chalmers, 2009[2]), hence quality is highly dependent on a mentor's ability, knowledge, and teaching approach. As one participant stated: "So their knowledge isn't really up to standard. That's something they're not learning in the apprenticeships" [#199London]. Furthermore, with increased accessibility via the internet, now anyone can buy equipment and call themselves a tattooist or piercer, bypassing the apprenticeship route (Kluger, 2015). The author found tattoo kits on Amazon.co.uk for as little as £50 (Amazon, 2023).

Short of a full qualification, comprehensive certificate courses could also be considered. As long ago as 2005 the HSE advised practitioners should have infection control and first aid training (Smith, 2007). More recently, both the RSPH and CIEH stated formal IPAC training should be a minimum (RSPH 2019, CIEH, 2020). Meanwhile, the Public Health (Wales) Act has made IPAC certification mandatory since 2023 (Welsh Government, 2023). The associated Level 2 course is 8 hours long and online invigilated to prevent cheating, a concern of London participants. This study's investigator took the course - while some areas were informative, overall it felt simplistic and that it would not fully prepare you for practice. As highlighted by a London participant, a higher level certificate may be more proportional to risk, and mirror other treatments (e.g. Level 4 certificates for sports massage, acupuncture, or SPM).

Poorly trained practitioners can increase health risks to themselves and the public, as well reputational risks for businesses. If apprenticeships are important to industry, they could be standardised to a specific curriculum. The US Association of Professional Piercers, a well-respected industry body, already advocates for a structured apprenticeship along its suggested curriculum. This includes comprehensive IPAC training, technique training, ethical and experience requirements for mentors, as well as minimum hours (1200), about 12-18 months (APP, 2023). Alternatively, membership to a professional body could be made mandatory. The UKAPP, for instance, audits its member's studios to a high standard (2023).

Recognised credentials would not be a fool-proof measure. There remains the question of what (if any) qualifications should be expected from guest practitioners at conventions and events (Renzoni, 2008). Scratchers would still operate regardless if credentials were in place, and arguably present the most significant risk (Aiyedun, 2013). Finally, awarding organisations are not required to evidence to OFQUAL that their qualification meets minimum standards. The All-Party Parliamentary Group for Beauty, Aesthetics and Wellbeing (APPG) argue this must change to make credentials consistent and reliable (APPG, 2021).

5.1.4 The Licensing Debate

As outlined in Theme 4, a national licensing scheme was a frequent suggestion on how to improve the current regulatory system, along with qualifications. This was brought up often by England regulators, and interestingly, London ones too. Such a licensing scheme could have significant benefits. Firstly, it would remove the requirement for borough-to-borough registration/licensing, allowing freedom to work across the country (Peate, 2020). As noted by a London participant it would set universal standards - improving consistency across industry practice. Regulatory would have more uniform approaches and expectations (Theme 1), leading to less friction with businesses (Theme 2). Moderate non-compliance could easily

be addressed by license revocation, rather than using Health & Safety notices. Internal risk-rating, like those used for food hygiene inspections, could also concentrate oversight to the most needed premises.

UK legislative developments for special treatments have all gravitated towards licensing. The London Local Authorities Act (1991), the Scottish Licensing of Tattooing and Skin Piercing Order (2006), and most recently, the Public Health (Wales) Act (2017). The Wales licensing regime came into force in 2023 (due to Covid delays), so it is too soon to see its effects (Welsh Government, 2023). At time of writing, the UK Government is moving to introduce licensing to cosmetic procedures such as Botox and fillers. Many participants are hopeful that this regime will include body piercings and tattoos, but nothing is certain yet (DHSC, 2021). Details are due to be released 2024-2025.

Far too frequently, public health legislation is reactive, when harm has already been sustained. This has been true of regulations governing tattoo and piercing premises too. The LGMPA 1982 was triggered by a Hepatitis B outbreak, as was its counterpart in Amsterdam (Galbraigh, 1989; Veenstra, 2015). The Wales Public Health Act was drafted following a cluster of serious pseudomonas skin infections and a paper highlighting frequent underage procedures (16%) as well as high rates of skin infection (36%) (Perry, 2018).

On the other hand, the epidemiological case is not clear-cut. It is uncertain what degree bacterial skin infections are due to poor client aftercare. It has been argued that the risk of blood-borne virus transmission has largely diminished with modern day practice in professional settings (Islam, 2016; Tohme, 2012). This could be from the rise of disposable instruments in the industry and general improvements over time. While there also could be silent transmission of BBVs that are unaccounted for, large outbreaks are few and far between in the literature (Fenelon, 2023).

What has been established is that tattoo inks can be harmful in numerous ways (Negi, 2022; Piccinini, 2016). The EU has sought to regulate this area since 2007, which culminated in a widespread ban of over 4000 chemicals in 2022, variously classed as irritants, skin sensitisers, mutagens, and carcinogens (Kluger, 2015; Schubert, 2023). In 2023, the Health & Safety Executive (HSE) removed two pigments from legal use (HSE, 2023[1]; Reuters, 2022). There are further HSE recommendations to remove hazardous substances in tattoo inks, currently an unregulated area (HSE, 2023[2]). Effective bans require enforcement, and this area may need local intervention to prevent substandard or harmful pigments proliferating on the market.

There is also the question of new technology and practices. While there is a general trend toward hygiene improvements (e.g. disposables), participant #199London highlighted ongoing issues with needle cartridge membrane failure, and grip wrapping. Without routine regulatory oversight, similar issues may go unnoticed in registration regimes.

However, a national licensing regime for England would introduce new regulatory burdens. Further personnel would likely be needed for paperwork and re-inspections. Inspections may need to be annual for several years until data for risk-rating can be established. There is already a shortfall of qualified staff across the UK; 45% of LAs say they are finding difficulties

in EHO recruitment (Paton, 2023). Two participants in management even mentioned severe capacity issues simply with the registration system[8]. One London participant was the only officer handling special treatments for the borough[8]. Further, as of 2023 many English councils are facing financial strain, with six going bankrupt in the last five years and a further twenty-six that may follow (Davies, 2023). Added responsibilities for statutory inspections could deepen these staffing and financial issues.

A licensing scheme may bring in additional annual revenue, but it is unclear if this will be sufficient for further staffing. Licensing officers could be used in conjunction or even substitute EHO inspections, which is already occurring in some boroughs (IoL, 2023). Licensing officers require less training (Level 3-4 qualifications) than EHOs (Level 6-7) and are generally on a lower salary band. Then again, such staff allocation may underutilise the benefits of additional oversight - licensing officers are not typically trained in public health, nor risk assessment.

An alternative is promoting industry self-regulation. While a less prominent theme than national licensing, some participants were confident about the industry generally controlling risk (Theme 5). One regulator stated the profession draws passionate individuals committed to their craft, while another noted the risks of negative social media can keep practitioners in check (#311London and #990London). As mentioned, industries bodies like UKAPP may audit their members upon joining, although there is no indication they are monitored over time (UKAPP, 2023).

Whatever the case, according to interviewees, their LAs did not face a high volume of complaints. While this is encouraging, clients are hardly equipped to evaluate hygiene practices and visibly clean surfaces could be heavily contaminated. Further, reliance on market regulation and complaints means harm will be done before action is taken, while environmental health should embody proactive approaches (Gibson, 2017).

5.2 Study Limitations

5.2.1 Sampling Bias

This study targeted regulators from the largest LAs in England, roughly half of which were metropolitan or London boroughs. This was done to meet specified criterion sampling. No participants who signed up were from LAs who had not adopted the Byelaws, nor any who do not inspect premises. While representativeness was not a goal, a range of perspectives was, and so viewpoints may be skewed towards denser, urbanised areas with active inspection policies.

Similarly, participants who chose to sign up may have stronger opinions and are more inclined to share them. Indeed, 3 of 17 participants have been involved in high-profile case law related to tattoo/piercing businesses. This could contribute to nonresponse bias, those who did not respond may be different in their range of viewpoints. A sign of this may be present in the response rate: 17% for London vs 28% for wider England. As London's licensing regime is the

[8] Participant number not included to avoid potential confidentiality breaches.

more robust of the two, London regulators may have had less inclination to discuss their views. On the other hand, London regulators may have simply been busier.

5.2.2 Data Collection Bias

While efforts were made to reduce data collection bias, it may have been unintentionally introduced on occasion. Sometimes multiple interviews were conducted in succession, leading to interviewer tiredness and less adherence to protocol. For instance, asking more than one question at once (which may have been confusing), or changing the question in minute ways that indicated the interviewer's opinion. This can introduce social desirability or acquiescence bias - the tendency to agree with the researcher (Grimm, 2010).

Generally, it was difficult to avoid potentially leading language e.g. "how well" questions (implying positive performance) and "control risk" phrasing (implying danger). On the other hand, this is typical language employed by EHOs as 'risk professionals', so this language may be less loaded. Participants may have also been primed by asking questions on legislation and then being queried about "issues they encounter". If they have a low opinion of legislation, they may have sought to justify it by overemphasising negative examples.

5.2.3 Other Issues

Many participants brought up beauty and aesthetics procedures, being a topical area and part of 'special treatments'. While the investigator referred back to tattooing and piercing regularly, in analysis it was sometimes hard to distinguish what participants were referring to: tattooing and piercing, beauty and aesthetics, or all special treatments. This led to interesting quotes being unused as adscription was unclear.

Open questions such as "what regulations do you use?" were asked over direct questions. As Part 2A orders were infrequently mentioned, it meant they were underexplored in the interviews. It would have been beneficial to understand possible barriers to their utilization.

As an initial exploratory study, this work used a qualitative methodology that cannot estimate prevalence. Further work will be needed to understand the generalisability of these regulator viewpoints.

5.2.4 Study Focus

This study is limited by focusing on regulatory perspectives only - viewing compliance, oversight, powers, and risk mitigation as virtues. On the other hand, industry and client viewpoints are also relevant, which place importance in self-expression, non-conformity, confidence, and freedom (Chalmers, 2009[1]). A solely regulatory perspective dismisses or downplays these aspects.

Further, Adams argues that risk management professions view risk as something that must be controlled and minimized, ignoring how risk-taking has its own benefits (1995). These could be resources (time, cost, labour) or emotional draws (joy, excitement, autonomy). An activity being 'risky' may be part of its appeal. Chalmers notes that if risk-taking is inherent to

tattooing and piercing culture, operators may actively shun or ignore perceived ‘authoritarianism’ to control it (2009[2]). Not understanding industry perspectives could lead to policy backfire. This may have been a contributing factor when TPIU rejected introduction of National Occupation Standards. If credentials are put on the table once more, proper consultation would be important.

5.3 Avenues for Future Research

The set of potential issues in tattoo and piercing premises is very broad (see table in the Literature Review). This study used a qualitative exploratory approach to highlight key issues for regulators in an understudied area. The findings can be utilised for hypothesis generation for quantitative approaches now that current issues are better enumerated (OHID, 2018).

As handwash provision was a recurrent problem, future studies could investigate arrangements in tattoo and piercing facilities, or temporary events such as tattoo/piercing conferences. The latter present particular challenges in this area due to a high volume of practitioners (IoL, 2023). Further research could also be conducted on specific guidance for rotary machines and chemical disinfection, to supplement or update the CIEH Toolkit.

This study suggests further work is required to investigate policy options, such as standardised credentials and what form they could take. It would be beneficial to understand how a credential or formal apprenticeship could interact with a potential licensing regime - both to minimise overburdening LAs and to be amenable to industry. Regarding illegal practitioners, studies could explore the use of Part 2A orders or the possibility of relaxing HSE enforcement transfers for scratcher-related cases.

6. Conclusion

As tattoos and piercings become increasingly mainstream, it is important to consider if regulatory oversight sufficiently controls the health risks they pose. This includes a variety of blood-borne viruses, bacterial infections, allergenic reactions, and harmful chemicals in inks. By interviewing experienced environmental health professionals in this area, this study found that primary legislation is viewed as outdated and flawed in much of England. This contributes to regulatory inconsistency in whether premises are inspected, how registration is undertaken, and what standards operators are held to.

While some participants regarded tattoo and piercing businesses as sufficiently self-regulating, there were recurrent problems with handwash basin placement and chemical disinfection. This is concerning considering they are key elements in a robust hygiene regime. Further, there was reluctance to utilise Health & Safety legislation to address these issues, relying on a variety of informal approaches to secure safe premises and practices.

Interviews of London regulators found few issues in comparison, which may be due to the enforcement advantages of a licensing regime. However, both participants from wider England and London struggled to enforce on unlicensed/unregistered operators in domestic premises, lacking enforcing authority authorisation.

Mandatory qualifications for practitioners were held up as a key intervention to improve control of health risks. This would provide greater assurance to regulators, in addition to streamlining licensing. National licensing was also strongly recommended by participants – which could remove the inconsistencies of localised regulations, provide more powers, and create a level playing field for industry. One caveat is that decision-makers should give due consideration to the financial and staffing capacity of local authorities, as well as industry views, to avoid generating backlash and/or non-compliance.

The ease of access to tattoo and piercing equipment and the potential for tremendous harm (e.g. HIV, HVC outbreaks) raises the importance of adequate regulatory oversight and risk control measures. This study has raised potential policy options, such as a recognised credential, audited membership to a professional body, or a license from local government, which should be investigated with further research.

7. References

Adams, J. (1995) Risk. London: UCL Press. ISBN-10: 1857280687. [Accessed 20 August 2023]

All-Party Parliamentary Group on Beauty, Aesthetics and Wellbeing (APPG) (2021) Concluding report: Inquiry into advanced aesthetic non-surgical cosmetic treatments. [website] baw.appg.com, London: APPG. Available from: https://baw-appg.com/wp-content/uploads/2021/07/APPG-BAWReport-on-aesthetic-non-surgical-cosmetic-treatments-21.07.21-3.pdf [Accessed 17 July 2023].

Aiyedun, N., and Ncube, F. (2013) Literature review on the epidemiology of tattooing and its complications - V.07. Colindale: Health Protection Agency. Available from: https://www.cieh.org/media/1982/tattoo-toolkit_part-e_-literature-review.docx [Accessed 23 March 2023].

Amazon (2023) Amazon.uk search: 'tattoo kit'. *Amazon* 04 June 2023. Available at: https://www.amazon.co.uk/s?k=tattoo+kit&crid=KMU2V2GUXGL&sprefix=tattoo+kit%2Caps%2C80&ref=nb_sb_noss_1 [Accessed 04 June 2023].

Arnold, A., Bickler, G. and Harrison, T.S., (2019) The first 5 years of Part 2A Orders: the use of powers from court applications to protect public health in England 2010–15. *Journal of Public Health* [online] 41(1), pp.27-35. Available from: https://doi.org/10.1093/pubmed/fdy028 [Accessed 08 June 2023].

UK Association of Professional Piercers (2023) Become a piercer. UKAPP [website] safepiercing.org. Available from: https://safepiercing.org/become-a-piercer/ [Accessed 01 June 2023].

Bergström, J. and Bodlund, M., (2015) Hygiene standards in the tattoo parlour and practices for prevention of infection. In *Tattooed Skin and Health* [online]. Vol. 48, pp. 228-235. Karger Publishers. Available at: https://library.oapen.org/bitstream/handle/20.500.12657/25856/1004230.pdf#page=239 [Accessed 13 April 2023].

Bone, A., Ncube, F., Nichols, T., and Noah, N. D. (2008) Body piercing in England: a survey of piercing at sites other than earlobe. *BMJ* [online]. 336(7658), 1426–1428. Available from: https://doi.org/10.1136/BMJ.39580.497176.25 [Accessed 12 April 2023].

Bradding, D. (2022) Tattooing enforcement - case studies. Runnymede Borough Council presentation. Archived: 2022 (exact date unlisted). [Accessed 03 April 2023]

Braun, V., and Clarke, V. (2022) Finding, losing, then finding yourself again: Developing themes. *Thematic Analysis: A Practical Guide*, 76–116. [Accessed 01 March 2023].

Braun, V. and Clarke, V., (2021) To saturate or not to saturate? Questioning data saturation as a useful concept for thematic analysis and sample-size rationales. *Qualitative research in sport, exercise and health* [online]. 13(2), pp.201-216. Available from: https://www.tandfonline.com/doi/abs/10.1080/2159676X.2019.1704846 [Accessed 15 May 2023].

Braun, V. and Clarke, V., (2006) Using thematic analysis in psychology. *Qualitative research in psychology* [online] 3(2), pp.77-101. Available from: https://www.tandfonline.com/doi/abs/10.1191/1478088706QP063OA [Accessed 01 March 2023].

Breuner, C. C., and Levine, D. A. (2017) Adolescent and young adult tattooing, piercing, and scarification. *Pediatrics* [online]. 140(4), 20171962. Available from: https://doi.org/10.1542/PEDS.2017-1962/38062 [Accessed 05 April 2023].

British Standards Institution (2020) BS EN 17169:2020 | Tattooing - Safe and hygienic practice. BSI Group: London. https://knowledge.bsigroup.com/products/tattooing-safe-and-hygienic-practice/standard [Accessed 29 May 2023].

Byrne, D., (2022) A worked example of Braun and Clarke's approach to reflexive thematic analysis. *Quality & quantity* [online]. 56(3), pp.1391-1412. Available from: https://link.springer.com/article/10.1007/s11135-021-01182-y [Accessed 28 April 2023].

Chalmers, C., (2009)[1] Charting the existence and approaches to management of the tattooing and body piercing industry—A historical overview. *Journal of Infection Prevention* [online]. *10(3*), pp.102-105. Available from: https://doi.org/10.1177/1757177409105075 [Accessed 15 April 2023].

Chalmers, C. (2009)[2] Appraising the need for tighter control over the practices of the tattooing and body piercing industry. *Journal of Infection Prevention* [online]. 10(4), 134–137. Available from: https://doi.org/10.1177/1757177409105650 [Accessed 15 April 2023].

Chalmers, C. (2009)[3] Debating the appropriateness and effectiveness of regulation as a mechanism to manage and control the risk to health from tattooing and body piercing activities. *Journal of Infection Prevention* [online]. 10(5), 180–183. https://doi.org/10.1177/1757177409105651 [Accessed 15 April 2023].

Chartered Institute for Environmental Health (2013) Tattooing and Body Piercing Guidance Toolkit. July 2013. London: CEIH. Available from: https://www.cieh.org/media/2004/tattooing-and-body-piercing-guidance-toolkit-july-2013.pdf [Accessed 16 April 2023].

City & Guilds (2023) Qualification Comparisons in NVQ. [website] cityandguilds.com. Available from: https://www.cityandguilds.com/qualifications-and-apprenticeships/qualifications-explained/qualification-comparisons [Accessed 05 September 2023].

Cohen, P. R. (2021) Tattoo-associated viral infections: A review. *Clinical, Cosmetic and Investigational Dermatology* [online]. 14, 1529–1540. Available from: https://doi.org/10.2147/CCID.S284796 [Accessed 10 May 2023].

Control of Substances Hazardous to Health Regulations (2002) Parliament: House of Commons. 2002 No.2677. UK Parliament. Available from: https://www.legislation.gov.uk/uksi/2002/2677/made [Accessed 14 August 2023].

Conaglen, P. D., Laurenson, I. F., Sergeant, A., Thorn, S. N., Rayner, A., and Stevenson, J. (2013) Systematic review of tattoo-associated skin infection with rapidly growing mycobacteria and public health investigation of a cluster in Scotland, 2010. *Eurosurveillance* [online]. 18(32), 20553. Available from: https://doi.org/10.2807/1560-7917.ES2013.18.32.20553/CITE/PLAINTEXT [Accessed 10 May 2023].

Cotton, J. (2022) Tattoo artists in uproar over EU ink bans. Reuters [online] 04 January 2022. Available from: https://www.reuters.com/world/europe/tattoo-artists-uproar-over-eu-ink-bans-2022-01-04/ [Accessed 03 May 2023].

Coyne, K. (2019) Alarm raised over unsafe tattoo and beauty needles. *CIEH News* [website]. cieh.org. Available from: https://www.cieh.org/ehn/health-and-safety/2019/september/alarm-raised-over-unsafe-tattoo-and-beauty-needles/ [Accessed 18 August 2023].

Davies, R. (2023) At least 26 English councils 'at risk of bankruptcy in next two years'. *The Guardian* [online] 28 August 2023. Available from: https://www.theguardian.com/society/2023/aug/28/at-least-26-english-councils-at-risk-of-bankruptcy-in-next-two-years [Accessed 30 August 2023].

Department of Health and Social Care (2021) Government to crack down on unregulated cosmetic procedures. UK Government gov.uk [website] Press release: 28 February 2022. Available from: https://www.gov.uk/government/news/government-to-crack-down-on-unregulated-cosmetic-procedures [Accessed 16 August 2023].

Dieckmann, R., Boone, I., Brockmann, S. O., Hammerl, J. A., Kolb-Mäurer, A., Goebeler, M., Luch, A., and al Dahouk, S. (2016) The Risk of Bacterial Infection After Tattooing: A Systematic Review of the Literature. *Deutsches Ärzteblatt International* [online]. 113(40), 665. Available from: https://doi.org/10.3238/ARZTEBL.2016.0665 [Accessed 10 May 2023].

Evans, H., Bolt, H., Heinsbroek, E., Lloyd, B., English, P., Latif, S., Elviss, N., Turton, J., Hoffman, P., Crook, P., Puleston, R., (2018) National outbreak of Pseudomonas aeruginosa associated with an aftercare solution following piercings, July to September 2016, England. *Eurosurveillance* [online]. 23(37), p.1700795. [Accessed 10 May 2023].

Fenelon D, Pittock, N (2023) An Overview of Standards in Tattooing and Body Piercing Premises. UKHSA presentation on Teams. 1 February 2023. [Accessed 01 February 2023].

Food Standards Agency (2021) Food Hygiene Rating Scheme: Guidance for local authorities on implementation and operation- the Brand Standard Revision 7 - issued May 2021. York: FSA. Available from: https://www.food.gov.uk/sites/default/files/media/document/The%20Food%20Hygiene%20Rating%20Scheme%20Guidance%20for%20Local%20Authorities%20on%20implementation%20and%20operation%20-%20Brand%20Standrad_2.pdf [Accessed April 2023].

Forbes, M. (2021) Thematic analysis: A practical guide. *Evaluation Journal of Australasia* [online]. *22*(2), 132–135. Available from: *Https://Doi.Org/10.1177/1035719X211058251* [Accessed 26 May 2023].

Galbraith, N.S., (1989) CDSC: from Cox to Acheson. *Community Medicine* [online]. 11(3), pp.187-199. Available from: https://www.jstor.org/stable/45156808 [Accessed 21 August 2023].

Gibson, P. (2017) Health inspectors used to be proactive - now all we do is react once disaster hits. The Guardian [online]. 24 June 2017. Available from: https://www.theguardian.com/public-leaders-network/2017/jun/24/environmental-health-inspectors-council-budget-cuts-disaster [Accessed 25 August 2023].

Grimm, P. (2010) Social Desirability Bias. *Wiley International Encyclopedia of Marketing*. Available from: https://doi.org/10.1002/9781444316568.WIEM02057 [Accessed 17 May 2023].

Giulbudagian, M., Schreiver, I., Singh, A.V., Laux, P. and Luch, A., (2020) Safety of tattoos and permanent make-up: a regulatory view. *Archives of Toxicology* [online]. 94, pp.357-369. Available from: https://link.springer.com/article/10.1007/s00204-020-02655-z [Accessed 21 August 2023].

Handwerker, W. P. (2005) Sample Design. *Encyclopedia of Social Measurement* [online]. 429–436. Available from: https://doi.org/10.1016/B0-12-369398-5/00076-1 [Accessed 17 May 2023].

Hansen K, Heacock H, and Eykelbosh A (2017) The public health impact of infection control, sterilization and regulation in tattooing. *BCIT Environmental Public Health Journal* [online]. 2017. Available from: https://doi.org/10.47339/ephj.2017.89 [Accessed 01 May 2023].

Health & Safety Executive (2023)[1] HSE publishes restriction opinion on tattoo and permanent make-up inks, 14th February 2023. Available from: https://press.hse.gov.uk/2023/02/14/hse-publishes-restriction-opinion-on-tattoo-and-permanent-make-up-inks/ [Accessed 02 May 2023].

Health & Safety Executive (2023)[2] Recommendation to restrict substances in tattoo and permanent make-up inks, 8th June 2023. Available from: https://press.hse.gov.uk/2023/06/08/recommendation-to-restrict-substances-in-tattoo-and-permanent-make-up-inks/ [Accessed 19 July 2023].

Health & Safety Executive (2023)[3] Enforcement Management Model (EMM) - Operational version 3.2. undated, hse.gov.uk [online]. Available from: https://www.hse.gov.uk/enforce/enforcement-management-model.htm [Accessed 03 September 2023].

Health & Safety Executive (2023)[4] LAC 67/2 (Revision 12) 2023/2024: Setting Local Authority Priorities and Targeting Interventions for 2023/24. undated, hse.gov.uk [online]. Available from: https://www.hse.gov.uk/lau/lacs/67-2.htm [Accessed 03 September 2023].

Health and Safety at Work etc. Act (1974) Parliament: House of Commons. 1974 c 37. UK Parliament. Available from: https://www.legislation.gov.uk/ukpga/1974/37/contents [Accessed 14 August 2023].

Hendren, N., Sukumar, S., and Glazer, C. S. (2017) Vibrio vulnificus septic shock due to a contaminated tattoo. *Case Reports* [online]. 2017, bcr-2017-220199. Available from: https://doi.org/10.1136/BCR-2017-220199 [Accessed 16 May 2023].
Insfran-Rivarola, A., Tlapa, D., Limon-Romero, J., Baez-Lopez, Y., Miranda-Ackerman, M., Arredondo-Soto, K. and Ontiveros, S., 2020. A systematic review and meta-analysis of the effects of food safety and hygiene training on food handlers. Foods [online]. 9(9), p.1169. Available from: https://www.mdpi.com/2304-8158/9/9/1169 [Accessed 10 September 2023].

Hotson, E. (2020) How workplaces are phasing out the tattoo stigma. *BBC* [online] 14 January 2020. bbc.com. Available from: https://www.bbc.com/worklife/article/20200113-normalising-the-workplace-tattoo-taboo [Accessed 10 September 2023].

Islam, P. S., Chang, C., Selmi, C., Generali, E., Huntley, A., Teuber, S. S., and Gershwin, M. E. (2016) Medical complications of tattoos: A comprehensive review. *Clinical Reviews in Allergy and Immunology* [online]. 50(2), 273–286. Available from: https://doi.org/10.1007/S12016-016-8532-0 [Accessed 14 May 2023].

Jafari, S., Buxton, J.A., Afshar, K., Copes, R. and Baharlou, S., (2012) Tattooing and risk of hepatitis B: a systematic review and meta-analysis. *Canadian journal of public health* [online]. 103, pp.207-212. Available from: https://link.springer.com/article/10.1007/BF03403814 [Accessed 13 May 2023].

Jafari, S., Copes, R., Baharlou, S., Etminan, M. and Buxton, J., (2010) Tattooing and the risk of transmission of hepatitis C: a systematic review and meta-analysis. *International journal of infectious diseases* [online]. 14(11), pp.e928-e940. Available from: https://doi.org/10.1016/j.ijid.2010.03.019 [Accessed 13 May 2023].

James, P., Tombs, S., and Whyte, D. (2012) The Löfstedt review of health and safety regulation: A critical evaluation. *In An IER Briefing*. Liverpool: The Institute of Employment Rights. Available from: https://archive.ier.org.uk/sites/ier.org.uk/files/Lofstedt%20Report%20Review%20March%202012.pdf [Accessed 04 September 2023].

Khodadost, M., Maajani, K., Arabsalmani, M., Mahdavi, N., Tabrizi, R. and Alavian, S.M., (2017). Is tattooing a risk factor for hepatitis c transmission?: an updated systematic review and meta-analysis. *Hepatitis Monthly* [online] 17(9). Available from: https://brieflands.com/articles/hepatmon-14308.html [Accessed 30 April 2023].

Kluger, N., and Koljonen, V., (2012) Tattoos, inks, and cancer. *The Lancet Oncology* [online]. 13(4), pp.e161-e168. Available from: https://doi.org/10.1016/S1470-2045(11)70340-0 [Accessed 23 August 2023].

Kluger, N. (2015) Epidemiology of Tattoos in Industrialized Countries. *Current Problems Dermatology* [online]. Karger, 2015, vol 48, pp 6–20. DOI: 10.1159/000369175 [Accessed 14 August 2023].

Klügl, I., Hiller, K.A., Landthaler, M. and Bäumler, W., (2010) Incidence of health problems associated with tattooed skin: a nation-wide survey in German-speaking countries. *Dermatology* [online]. *221*(1), pp.43-50. Available from: https://doi.org/10.1159/000292627 [Accessed 22 August 2023].

Kristensen, M.W., (2015) Tattooist-customer relationships in a diversified environment of professional tattooists and 'scratchers'. In *Tattooed Skin and Health* [online]. Vol. 48, pp. 45-47. Karger Publishers. Available at: https://library.oapen.org/bitstream/handle/20.500.12657/25856/1004230.pdf#page=239\ [Accessed 14 August 2023].

Laumann, A.E., and Kluger, N. (2018) History and Epidemiology of Tattoos and Piercings: Legislation in the United States and in Europe. In: De Cuyper, C., Pérez-Cotapos S, M. (eds) *Dermatologic Complications with Body Art*. Cham: Springer. Available from: https://doi.org/10.1007/978-3-319-77098-7_1 [Accessed 10 June 2023].

Lee, B., Vangipuram, R., Petersen, E. and Tyring, S.K., (2018). Complications associated with intimate body piercings. *Dermatology online journal* [online]. *24*(7). Available from: https://doi.org/10.5070/D3247040908 [Accessed 15 June 2023].

Laux, P., Tralau, T., Tentschert, J., Blume, A., Al Dahouk, S., Bäumler, W., Bernstein, E., Bocca, B., Alimonti, A., Colebrook, H. and de Cuyper, C., (2016) A medical-toxicological view of tattooing. *The Lancet* [online]. 387(10016), pp.395-402. Available from: https://doi.org/10.1016/S0140-6736(15)60215-X [Accessed 03 May 2023].

Lawrance, H. (2023) Acupuncture, tattoo & skin piercing training. Online presentation hosted by *Institute of Licensing* 07 September 2023. [Accessed 07 September 2023].

Lim, S.H., Lee, S., Lee, Y.B., Lee, C.H., Lee, J.W., Lee, S.H., Lee, J.Y., Kim, J.S., Park, M.Y., Koh, S.B. and Choi, E.H., 2022. Increased prevalence of transfusion-transmitted diseases among people with tattoos: A systematic review and meta-analysis. PloS one [online]. 17(1), p.e0262990. Available from: https://doi.org/10.1371/journal.pone.0262990 [Accessed 03 May 2023].

Local Government (Miscellaneous Provisions) Act (1982) Parliament: House of Commons. 1982 c. 30. UK Parliament. Available from: https://www.legislation.gov.uk/ukpga/1982/30/contents [Accessed 26 April 2023].

London Local Authorities Act (1991) UK Parliament. Parliament: House of Commons. 1991 c. xiii. UK Parliament. Available from: https://www.legislation.gov.uk/ukla/1991/13/enacted [Accessed 26 April 2023].

Magaldi, D., & Berler, M. (2020) Semi-structured Interviews. *Encyclopedia of Personality and Individual Differences* [online]. 4825–4830. Available from: https://doi.org/10.1007/978-3-319-24612-3_857 [Accessed 02 May 2023].

Martin, M., (2023) A survey study investigating the attitudes and perceptions of tattoo studios towards infection control and hygiene practices. *Public Health Institute Journal* [online]. pp.14-14. [Accessed 28 August 2023].

Messahel, A., & Musgrove, B. (2009) Infective complications of tattooing and skin piercing. *Journal of Infection and Public Health* [online]. *2*(1), 7–13. Available from: https://doi.org/10.1016/J.JIPH.2009.01.006 [Accessed 29 May 2023].

Moser, A., & Korstjens, I. (2017) Series: Practical guidance to qualitative research. Part 3: Sampling, data collection and analysis. *European journal of general practice* [online]. 24.1: 9-18., *24*(1), 9–18. Available from: https://doi.org/10.1080/13814788.2017.1375091 [Accessed 23 May 2023].

National Environmental Health Association (2022) Body Art Facility Inspector Training – Participants Guide. Presented at the 2022 NEHA Annual Educational Conference 28-29 June 2022. NEHA: Colorado. [Accessed 30 April 2023].

Negi, S., Bala, L., Shukla, S., and Chopra, D. (2022) Tattoo inks are toxicological risks to human health: A systematic review of their ingredients, fate inside skin, toxicity due to polycyclic aromatic hydrocarbons, primary aromatic amines, metals, and overview of regulatory frameworks. *Toxicology and Industrial Health* [online]. *38*(7), 417–434. Available from: https://doi.org/10.1177/07482337221100870 [Accessed 28 July 2023].

Noah, N. (2006) Tattooing and piercing – the need for guidelines in EU. *Eurosurveillance* [online]. 11, 589. Available from: https://doi.org/10.2807/esm.11.01.00589-en [Accessed 25 May 2023].

Oberdorfer, A., Wiggers, J.H., Bowman, J., Burrows, S., Cockburn, J. and Considine, R.J., (2004) Monitoring and educational feedback to improve the compliance of tattooists and body piercers with infection control standards: a randomized controlled trial. *American journal of infection control* [online]. 32(3), pp.147-154. [Accessed 24 June 2023].

OFQUAL (2023)[1] Register of Regulated Qualifications - Search: 'Infection Control and Prevention'. UK Government. register.ofqual.gov.uk [website]. Available from: https://register.ofqual.gov.uk/Search?category=Qualifications&query=Infection%20control%20and%20prevention [Accessed 05 September 2023].

OFQUAL, (2023)[2] Qualification: Focus Awards Level 3 Diploma in Body Piercing (RQF). register.ofqual.gov.uk [website]. Available from: https://register.ofqual.gov.uk/Detail/Index/46815?category=qualifications&query=piercing [Accessed 29 Aug 2023].

Paton, N. (2023) EH Needs You! *EHN*. Vol 37, 9. March 2023. London: CIEH. pp.12-15. [Accessed 28 June 2023].

Peate, I., (2020) Skin deep: The impact of tattoos and piercing on health. *Independent Nurse* [online]. *2020*(4), pp.22-25. Available from: https://doi.org/10.12968/INDN.2020.4.22 [Accessed 23 May 2023].

Perraudin, F. (2018) How tattoos went from subculture to pop culture. *The Guardian* [online]. 26 October 2018. theguardian.com. Available from: https://www.theguardian.com/fashion/2018/oct/26/how-tattoos-went-from-subculture-to-pop-culture [Accessed 10 September 2023].

Perry, M., Lewis, H., Thomas, D. R., Mason, B., and Richardson, G. (2018) Need for improved public health protection of young people wanting body piercing: evidence from a look-back exercise at a piercing and tattooing premises with poor hygiene practices, Wales (UK) 2015. *Epidemiology & Infection*, *146*(9), 1177–1183. Available from: https://doi.org/10.1017/S0950268818001024 [Accessed 06 May 2023].

Piccinini P., Pakalin Ss, Contor L., Bianchi I., Senaldi C. (2016) Safety of Tattoos and Permanent Makeup – Final Report. *JRC Science for Policy Report* [online]. European Commission DOI: 10.2788/011817. [Accessed 23 July 2023].

Public Health England (2018) Transparency data: Health protection Part 2A orders. gov.uk [website]. UK Government. Available from: https://www.gov.uk/government/publications/part-2a-orders [Accessed 19 July 2023].

Public Health (Wales) Act (2017) Parliament: House of Commons. 2017 anaw 2. Welsh Parliament. National Assembly for Wales. Available from: https://www.legislation.gov.uk/anaw/2017/2/introduction/enacted [Accessed 03 May 2023].

Regulatory Services Partnership (2023) Special Treatments: Accepted Qualifications. Merton London Borough Council [website] merton.gov.uk. Available from: https://www.merton.gov.uk/system/files?file=therapists20-20qualifications.pdf [Accessed 05 September 2023].

Rello, J., Tejada, S., Campogiani, L., Adebanjo, A. G., and Tammaro, A. (2022) Systemic infections associated with tattoos or permanent makeup: A systematic review. *Medicina Clínica (English Edition)* [online]. 158(4), 159–166. Available from: https://doi.org/10.1016/J.MEDCLE.2021.01.026 [Accessed 06 May 2023].

Renzoni, A., Pirrera, A., Novello, F., Diamante, M.S., and Guarino, C. (2008) Implementation of European Council Resolution ResAP in Italy. National and Regional Regulation of Tattoo Practices: Diversity and Challenges. In *Tattooed Skin and Health* [online]. Vol. 48, pp. 218-222. Karger Publishers. Available from: https://library.oapen.org/bitstream/handle/20.500.12657/25856/1004230.pdf#page=239 [Accessed 28 June 2023].

Rhee, P., Nunley, M., Demetriades, D., Velmahos, G., and Doucet, J. (2005) Tetanus and Trauma: A Review and Recommendations. *The Journal of Trauma: Injury, Infection, and Critical Care* [online]. 58(5):p 1082-1088, May 2005. DOI: 10.1097/01.TA.0000162148.03280.02 [Accessed 04 May 2023].

Royal Society for Public Health (2019) Skins and Needles. London:RSPH. Available from: https://www.rsph.org.uk/our-work/policy/infection-control/skins-and-needles.html [Accessed 25 April 2023].

Schmidt, A., (2015) Hygiene standards for tattooists. In *Tattooed Skin and Health* [online]. Vol. 48, pp. 223-227. Karger Publishers. Available from: https://library.oapen.org/bitstream/handle/20.500.12657/25856/1004230.pdf#page=239 [Accessed 15 April 2023].

Schubert, S., Kluger, N. and Schreiver, I., (2023) Hypersensitivity to permanent tattoos: Literature summary and comprehensive review of patch tested tattoo patients 1997–2022. *Contact Dermatitis* [online]. *88*(5), pp.331-350. Available from: https://onlinelibrary.wiley.com/doi/full/10.1111/cod.14291 [Accessed 27 April 2023].

Scott-Lang, V.E., Sergeant, A., Sinclair, C.G., Laurenson, I.F., Biswas, A., Tidman, M.J., Doherty, V.R., Kavanagh, G.M. and Holme, S.A., (2014) Cutaneous Mycobacterium chelonae infection in Edinburgh and the Lothians, South-East Scotland, UK. *British Journal of Dermatology* [online]. *171*(1), pp.79-89. Available from: https://doi.org/10.1111/bjd.12901 [Accessed 01 May 2023].

Serup, J., Carlsen, K.H. and Sepehri, M., (2015) Tattoo complaints and complications: diagnosis and clinical spectrum. *Tattooed skin and health* [online]. *48*, pp.48-60 [Accessed 15 April 2023].

Serup, J., Sepehri, M. and Hutton Carlsen, K., (2017) Classification of tattoo complications in a hospital material of 493 adverse events. *Dermatology* [online]. *232*(6), pp.668-678. Available from: https://doi.org/10.1159/000452148 [Accessed 15 April 2023].

Sherdley, R. (2018) Jail for Lion Care company boss after piercing aftercare solution infects 160 innocent people. *Nottingham Post* [online] 03 December 2018. Available from: https://www.nottinghampost.com/news/local-news/jail-lion-care-company-boss-2278637 [Accessed 23 June 2023].

Simunovic, C. and Shinohara, M.M., (2014) Complications of decorative tattoos: recognition and management. *American journal of clinical dermatology*, *15*, pp.525-536. [Accessed 23 June 2023].

Singh, J., and Heacock, H. (2022) Assessing infection prevention and control (IPAC) knowledge of tattoo artists of British Columbia. *BCIT Environmental Public Health Journal* [online]. Available from: https://doi.org/10.47339/ephj.2022.205 [Accessed 15 April 2023].

Smith, L. (2010) Regulation of tattooing and body piercing businesses - SN/SC/5079. UK House of Commons Library. website:researchbriefings.files.parliament.uk. Available from:

https://researchbriefings.files.parliament.uk/documents/SN05079/SN05079.pdf [Accessed 05 July 2023].

Swami, V., Gaughan, H., Tran, U. S., Kuhlmann, T., Stieger, S., & Voracek, M. (2015) Are tattooed adults really more aggressive and rebellious than those without tattoos? *Body Image* [online]. *15*, 149–152. Available from: https://doi.org/10.1016/J.BODYIM.2015.09.001 [Accessed 15 April 2023].

Tattoo & Piercing Industry Union (2023) Join the Tattoo and Piercing Industry Union. TPIU [website]. tpiu.og.uk. Available from: http://www.tpiu.org.uk/index.php/tpiu-members-benefits/ [Accessed 17 April 2023].

The Management of Health and Safety at Work Regulations (1999) Parliament: House of Commons. 1999 No. 3242. UK Parliament. Available from: https://www.legislation.gov.uk/ukla/1991/13/enacted [Accessed 19 June 2023].

Thomas, D. (2019) Tattoos at work: Are they still an issue? BBC [online]. 16 June 2019. bbc.co.uk. Available from: https://www.bbc.co.uk/news/business-48620528 [Accessed 10 September 2023].

Tohme, R.A. and Holmberg, S.D., (2012) Transmission of hepatitis C virus infection through tattooing and piercing: a critical review. *Clinical Infectious Diseases* [online]. *54*(8), pp.1167-1178. Available from: https://doi.org/10.1093/cid/cir991 [Accessed 29 April 2023].

Tombs, S., (2016) *Better regulation: better for whom?* (Vol. 14). London: Centre for Crime and Justice Studies. Available from: http://www.regulation.org.uk/library/2016-Steve_Tombs-Better_Regulation_Better%20for%20Whom.pdf [Accessed 01 May 2023].

Tong, A., Sainsbury, P. and Craig, J., (2007). Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International journal for quality in health care* [online]. 19(6), pp.349-357. Available from: https://doi.org/10.1093/intqhc/mzm042 [Accessed 01 May 2023].

Toronto Public Heath (2016) Bodysafe: Tattooing - Infection Prevention and Control, Needle Cartridge System. tortonto.ca/health [online]. https://www.toronto.ca/wp-content/uploads/2017/09/90d1-tph-bodysafe-tattoo-needle-cartridge-system-11-1-2016.pdf [Accessed 05 June 2023].

Turner, D. W. (2010) Qualitative Interview Design: A Practical Guide for Novice Investigators. *The Qualitative Report* [online]. *15*(3), 754–760. https://doi.org/10.46743/2160-3715/2010.1178 [Accessed 16 May 2023].

Waugh, M. (2007) Body piercing: where and how. *Clinics in Dermatology* [online]. 25: 407 - 11. Available from: https://doi.org/10.1016/j.clindermatol.2007.05.018 [Accessed 30 June 2023].

World Health Organisation (2023)[1] Research on Potential Long-term Health Effects of Tattooing: Background. Lyon: Internal Agency for Research of Cancer. https://tattoo.iarc.who.int/background/ [Accessed 30 June 2023].

World Health Organisation (2023)[2] Research on Potential Long-term Health Effects of Tattooing: Projects. Lyon: Internal Agency for Research of Cancer. https://tattoo.iarc.who.int/projects/ [Accessed 30 June 2023].

Weinstein, R. A., Tohme, R. A., and Holmberg, S. D. (2012) Transmission of Hepatitis C Virus Infection Through Tattooing and Piercing: A Critical Review. *Clinical Infectious Diseases* [online]. *54*(8), 1167–1178. Available from: https://doi.org/10.1093/CID/CIR991 [Accessed 28 June 2023].

Wenzel, S. M., Rittmann, I., Landthaler, M., and Bäumler, W. (2013) Adverse Reactions after Tattooing: Review of the Literature and Comparison to Results of a Survey. *Dermatology* [online]. *226*(2), 138–147. Available from: https://doi.org/10.1159/000346943 [Accessed 29 June 2023].

Wong E, and Heacock H (2018) Biological Hazards Associated with Microblading and Evaluation of its Infection Control Procedures and Wound Care. *BCIT Environmental Public Health Journal* [online]. Available from: https://doi.org/10.47339/ephj.2018.56 [Accessed 30 April 2023].

Veenstra, T., (2015) The Amsterdam model for control of tattoo parlours and businesses. In *Tattooed Skin and Health* [online]. Vol. 48, pp. 218-222. Karger Publishers. Available from: https://library.oapen.org/bitstream/handle/20.500.12657/25856/1004230.pdf#page=239 [Accessed 03 September 2023].

Young, I., Waddell, L.A., Wilhelm, B.J. and Greig, J., (2020) A systematic review and meta-regression of single group, pre-post studies evaluating food safety education and training interventions for food handlers. Food research international [online]. 128. p.108711. Available from: https://doi.org/10.1016/j.foodres.2019.108711 [Accessed 10 September 2023].

8. Appendices

8.1 Topics & Question Framework

Questions were formulated along the following areas of inquiry:

Areas of Inquiry	Topics
What relevant training do EHOs have in regulating tattoo/piercing premises?	C
What resources do EHOs utilise?	C
Do EHOs feel confident in their knowledge/skills?	C, F
Do the regulations EHOs work under help reduce risk?	D, F
Are there consistent downsides of a particular regulatory regime?	D, F
What kind of problems do EHOs encounter the most?	E
Are problems more commonly structural, hygiene, or management related in nature?	E

A) Starting Interview – 1 min
- Welcome by investigator and confirmation of the study name
- Check participant is correct person, and if they have signed the consent form
- Check if participant consents to audio recording (also on consent form)

B) Officer Background – 1-2 mins
Understand participant roles in relation to body modification and gauge their experience.

1. To start, could you please tell me what areas do you typically work in and how long have you been in this field?
// warm-up question and understanding their general experience //
2. How long have you worked in regulating tattoo and piercing businesses?
3. In what ways do you work in this area? (E.g. planning consultations, practitioner or premise registration/licensing, practitioner training, officer training, health & safety visits, premise inspections, responding to complaints, outbreak investigation, public health education, writing standards).
4. How many in-person visits have you done in the last 12 months?

C) Regulatory Capacity – 4-6 mins
Understanding what resources officers use, e.g. training, teamwork, personal experience, etc

5. What training (if any) has been useful for doing your work?
6. What resources do you use for doing your work? (E.g. named… standards, training, working groups, guidance, books, policy, pro-formas)
7. [If many listed] Are there any you find particularly helpful?
8. What would support you further?

D) Suitability of Legal Frameworks – 4-6 mins

What regulations are in place in the officer's jurisdiction, including non-obvious ones. Do they help or hinder their work? Are these regulations suitable for control of hazards?

9. What regulations do you use for regulating tattoo and piercing businesses?
    - [Further prompt] Could you tell me about the byelaws / licensing conditions / health and safety law that you use?
10. How suitable do you think this legal framework is for controlling risks?
    - [Further prompt] What advantages does it have?
    - [Further prompt] What disadvantages does it have?
11. How would you improve it (if necessary)?
12. What arrangements are there for data reporting (if any)?

E) Routinely Detected Issues – 8-10 mins
What problems are found (if any) in registration/licensing applications and/or inspections. Further elaboration will be prompted for structure, hygiene, and management elements. Questions will inquire whether reprocessing, disposable, or hybrid studios are predominant.

13. What issues do you routinely detect regarding tattoo and piercing premises?
    - [Further prompt] What issues are the most frequent?
    - [Further prompt] What issues are the most serious?
14. What observations do you have on structure, materials, and layout of businesses in your area?
15. Can you comment on the hygiene of premises you inspect?
16. What observations do you have on management and record-keeping?
17. Can you tell me about your confidence in practitioners you inspect operating in a hygienic manner?
18. How regularly do you encounter businesses using autoclaves?
19. How regularly do you encounter businesses being part 'disposable' but also using autoclaves?
20. To what degree do you understand the sterilization process used by businesses?

F) Perceived Blind Spots – 2-4 mins
Are there areas that officers feel they cannot adequately assess, perhaps because of lack of personal knowledge, regulatory hindrance, not being present, or other reasons.

21. Are there areas you find difficult to assess for risk? If so, could you comment on why.
22. What areas would you like further training or resources in (if any)?
23. Are there procedures you encounter you are unsure how to handle? (e.g. cosmetic tattooing, branding, scarification, implants, tongue splitting, etc.)

G) Wrapping Up Interview – 1-2 mins
- Do you have any further comments?
- Do you have any questions regarding the study?
- Thanking them for their time.

8.2 Reflexivity Notes

The investigator notes his bias towards public health protection and assumptions that risk requires mitigation and control. This can be paternalistic in contrast to values such as risk-taking (Adams, 2006), individual self-expression, or limited government oversight. These ideas have far less currency in his two degrees in Public Health and Environmental Health.

The investigator works in part-time in Local Government as a trainee EHO, and so is a member of the sampled population. This could lead him to be more agreeable to participant views. He is also volunteers for an industry-regulatory group which is updating the US Model Body Art Code for NEHA (a US environmental health body). This model code inspired interest in examining UK regulations, however, being detailed and prescriptive may also bias the investigator's interpretation of what is good practice.

The investigator is positive towards body modification in general, viewing tattoo and piercings as attractive adornments. In his early 20s he had several piercings himself, since removed.

Opportunities to ask questions were provided before and after the interview. On several occasions participants queried motivations behind the research. Neutral answers were given "it seemed like an interesting topic" or "I realised it was an under-researched area". The investigator presented himself as a student only, but twice was asked if he worked in environmental health (to which he said he did).

To facilitate detailed discussion, the investigator reviewed health guidance and training including the Body Art Facility Inspector training (NEHA, 2022), Tattooing and Body Piercing Guidance Toolkit (CIEH, 2013), and Tattooed Skin and Health dermatology volume (Serup, 2015). See full training below.

<u>Pertinent Qualifications and Training</u>

Degrees:
Masters in Environmental Health (ongoing) - The University of the West of England, Bristol
Masters in Public Health - The University of Hong Kong
Bachelors in Arts, Politics & Philosophy - The University of Auckland

Courses:
Level 2 Award in IPAC for Special Procedures Practitioners - RSPH (2023)
Body Art Facility Inspector Training Course - NEHA (2022)

Short online training:
An Overview of Standards in Tattoo and Body Piercing Premises - UKHSA (2023)
Bloodborne Pathogens Exposure Control Training Course - Cathie Montie (2022)
Exposure Control Plans for Body Piercing Facilities - APP (2022)
Sterilization Cycle for Body Piercing Facilities - APP (2022)
Inspector Training for Body Piercing Studios - APP (2022)
Studio Documentation - APP (2022)

8.3 Cover Letter

Dear Sir/Madam,

I'm conducting a study on tattoo and piercing business regulation as part of my dissertation in Environmental Health (MSc, UWE Bristol) and would like to interview one of your officers to share their observations in this area.

The interview will be done on Microsoft Teams, strictly kept to 30 mins, and will be anonymous. If possible, I would like to audio record the interview for transcription, but this is optional. All recordings will be promptly deleted once transcribed. The study findings will be shared afterwards.

I would be very grateful if you can forward this to any relevant teams or personnel. I am looking for officers who have inspected at least 5 tattoo and/or piercing premises in the last 5 years. If more than one officer wishes to participate, I will hold separate interviews.

- Interview content: Officers' knowledge and experience of regulating tattoo/piercing premises, their perspectives of relevant regulations, and what issues they frequently encounter.
- You can find further information and the privacy notice here: https://uweacuk-my.sharepoint.com/:f:/g/personal/rufus2_redsell_live_uwe_ac_uk/EmcqP7R648dOsgnoukMbGEsBuaWjwvV2DpuZsTHd5rW0aA?e=D4tR4Y

Please do not hesitate to contact me if you have any further questions. Thank you very much for your time and consideration.

Kind Regards,
Rufus Redsell

Study: "Regulatory oversight and risk control measures in tattoo and piercing premises in London and England: Environmental Health perspectives"
Administering Organisation: University of the West of England, Bristol
Investigator: Rufus Redsell, supervised by Chris Waller

8.4 Message Board Post

News that the study was being conducted was circulated on professional message boards (Knowledge Hub) with the below message. Interested parties were sent the cover letter before proceeding.

"A study on EHO perspectives on regulating tattoo & piercing premises is being conducted for a student research project. If you are interested in knowing more, please contact rufus2.redsell@live.uwe.ac.uk for details."

8.5 Participant Information Sheet

Participant Information Sheet:

Regulatory oversight and risk control measures in tattoo and piercing premises in London and England: Environmental Health perspectives

Please find the Privacy Notice for Participants here: https://uweacuk-my.sharepoint.com/:w:/g/personal/rufus2_redsell_live_uwe_ac_uk/Eabwt7xwGghOuJxBeu4nV-kB5QX-n6a_cqcDMdWUMkd9-g?e=GadtFz

You are invited to take part in research undertaken by a MSc Environmental Health student at the University of the West of England, Bristol. Before you decide whether to take part, it is important for you to understand why the study is being done and what it will involve. Please read the following information carefully and if you have any queries or would like more information please contact the investigator, Rufus Redsell (rufus2.redsell@live.uwe.ac.uk).

The student researcher is supervised by Chris Waller, who's profile is available at: https://people.uwe.ac.uk/Person/ChristopherWaller. (chris.waller@cheltenham.gov.uk).

What is the aim of the research?

The purpose of this study is to explore perspectives of regulating tattoo and piercing businesses. The research will explore EHO experiences of such premises, which regulations they make use of, and what hygiene or safety issues they frequently encounter in this area.

The research questions are:

- What regulatory frameworks for tattoo/piercing premises are being used in England?
- How effective do current regulators feel they are in protecting public health within these frameworks?
- What improvements would benefit regulators in protecting public health?

This will aid assessment of the current regulatory landscape and whether further resources for officers are needed.

Why have I been invited to take part?

As you are a professional in the field, I am interested learning about your experiences and views in this area, particularly regarding inspections, investigations, licensing conditions and other regulatory matters for tattoo/piercing premises. I will also ask about how long you have been in the workforce and your specialities in environmental health. I will not be asking any questions about specific businesses or any personal information about you.

Do I have to take part?

You do not have to take part in this research. It is up to you to decide whether or not you want to be involved. If you do decide to take part, you will be given a copy of this information sheet to keep and will be asked to sign a consent form. If you do decide to take part, you are able to withdraw from the research without giving a reason, until the point at which your data is anonymised and can therefore no longer be traced back to you or removed. This point will take place 7 days after the date you are interviewed. If you want to withdraw from the study within this period, please write to rufus2.redsell@live.uwe.ac.uk. Deciding not to take part or to withdraw from the study does not have any penalty.

What will happen to me if I take part and what do I have to do?

If you agree to take part you will be asked to take part in a 20-30min interview over Microsoft Teams. This will be conducted by the student researcher.

The subject and focus of the discussion will cover your expertise and knowledge of regulating tattoo/piercings premises; your perspectives on the suitability of the legal framework; and any routinely detected issues you find. Your answers will be fully anonymised.

At the point of transcription, your voice recording will be deleted. A unique identifier will be used to re-identify you if you choose to withdraw from the study within 7 days. After this period, your data will be fully anonymised and will be analysed with interview data from other anonymised participants.

What are the benefits of taking part?

There are no direct benefits of taking part, but you will be contributing to knowledge which we hope will benefit environmental health work in future.

What are the possible risks of taking part?

We do not foresee or anticipate any significant risk to you in taking part in this study. Steps will be taken to anonymise and protect your data at every step, and only a significant data breach prior to anonymisation would lead to identifiable data being released publicly. However, this unlikely event could plausibly cause reputational damage.

If you feel uncomfortable at any time you can ask for the interview to stop. If you need any support during or after interview, then the researcher will be able to put you in touch with suitable support agencies. The supervisor will support the student to conduct the research sensitively. The interview questions have been designed with these considerations in mind.

What will happen to your information?

All the information that you give will be kept confidential and anonymised after 7 days from collections. The only circumstance where the researcher may not be able to keep you information confidential is if compelled by law or if safeguarding a vulnerable person. Handwritten notes will be digitised post-interview and destroyed. Digital data will be stored on the University's secure OneDrive system to which only the student and supervisor will have access in accordance with the Data Protection Act 2018 and General Data Protection Regulation requirements.

Voice recordings will be destroyed securely immediately after transcription. Your data will be analysed together with other interview and file data. Raw anonymised data will be shared UWE, Bristol for assessment purposes. Once anonymised, the researcher will ensure that there is no possibility of identification or re-identification from this point.

Where will the results of the research be submitted or published?

A dissertation will be written containing the research findings and submitted to the University. Anonymous and non-identifying direct quotes may be used in the dissertation. A copy may be displayed in the University library, sent to academic journals, or posted on LinkedIn. If you are interested in reading a copy, please contact the student.

Who has ethically approved this research?

This project has been reviewed and approved by Chris Waller under delegated authority from the UWE Research Ethics Committee.

Any comments, questions or complaints about the ethical conduct of this study can be addressed to the UWE Research Ethics Committee at: researchethics@uwe.ac.uk

What if I have a question, concerns, or complaint?

You can contact the student researcher, Rufus Redsell, if you have any questions: rufus2.redsell@live.uwe.ac.uk

Concerns or complaints can be directed to the project supervisor, Chris Waller: chris.waller@cheltenham.gov.uk

Thank you very much for agreeing to take part in this study and helping me complete my MSc Environmental Health dissertation!

You will be given a copy of this Participant Information Sheet and your signed Consent Form to keep.

Kind Regards,

Rufus Redsell

8.6 Privacy Notice for Research Participants

Privacy Notice for Research Participants:

Regulatory oversight and risk control measures in tattoo and piercing premises in London and England: Environmental Health perspectives

Purpose of the Privacy Notice

This privacy notice explains how I (Rufus Redsell) collect, manage and use your personal data before, during and after you participate in an interview discussing regulatory oversight of tattoo/piercing premises. 'Personal data' means any information relating to an identified or identifiable natural person (the data subject).

This privacy notice adheres to the UK General Data Protection Regulation (GDPR) principle of transparency. This means it gives information about:

- Why and how your data will be used for my University research project;
- What your rights are under GDPR; and
- How to contact me in relation to any questions you may have regarding the use of your personal data.

General information about Data Protection law is available from the Information Commissioner's Office (https://ico.org.uk/).

This Privacy Notice should be read in conjunction with the Participant Information Sheet and Ethical Consent Form provided to you before you agree to take part in the research.

Why am I processing your personal data?

I am processing your personal data as a student of UWE, Bristol and as part of my Msc programme of study in Environmental Health. As part of these studies, I am undertaking this research project

How do I use your personal data?

My lawful basis for using your personal data for research purposes is Article 6(1)(e) Public Task and Article 6 (1)(f) Legitimate Interests.

I will always tell you about the information I wish to collect from you and how I will use it**.** My research is subject to the relevant UWE, Bristol student research processes.

What data do I collect?

The personal data I will be processing is described in the Participant Information Sheet I have provided to you with this Privacy Notice.

Who do I share your data with?

I will only share your personal data in accordance with the attached Participant Information Sheet.

How do I keep your data secure?

I take a robust approach to protecting your information with secure electronic and physical storage areas. Access to your personal data is strictly controlled on a need-to-know basis and data is stored and transmitted securely using methods such as encryption and access controls for physical records where appropriate.

How long do I keep your data for?

Your personal data will only be retained for as long as is necessary to fulfil the cited purpose of the research and will be securely deleted upon confirmation of my marks/award relevant to my programme of studies.

Anonymised data that falls outside the scope of data protection legislation as it contains no identifying or identifiable information may be stored in UWE Bristol's research data archive or another carefully selected appropriate data archive.

Your Rights and how to exercise them

Under the Data Protection legislation, you have the following **qualified** rights:

1. The right to access your personal data;
2. The right to rectification if the information is inaccurate or incomplete;
3. The right to restrict processing and/or erasure of your personal data;
4. The right to data portability;
5. The right to object to processing;
6. The right to object to automated decision making and profiling;
7. The right to complain to the Information Commissioner's Office (ICO).

I will always respond to concerns or queries you may have. If you have any queries relating to my research project please contact me using the following email address rufus2.redsell@live.uwe.ac.uk) and/or my research supervisor at chris.waller@cheltenham.gov.uk).

8.7 Consent Form

Consent Form

Study: *Regulatory oversight and risk control measures in tattoo and piercing premises in London and England: Environmental Health perspectives*

Please find the Privacy Notice for Participants here: https://uweacuk-my.sharepoint.com/:w:/g/personal/rufus2_redsell_live_uwe_ac_uk/Eabwt7xwGghOuJxBeu4nV-kB5QX-n6a_cqcDMdWUMkd9-g?e=GadtFz

This consent form will have been given to you with the Participant Information Sheet. Please ensure that you have read and understood the information contained in the Participant Information Sheet and asked any questions before you sign this form. If you have any questions please contact a member of the research team, whose details are set out on the Participant Information Sheet.

If you are happy to take part in the interview, please sign and date the form. You will be given a copy to keep for your records.

- I have read and understood the information in the Participant Information Sheet which I have been given to read before asked to sign this form;
- I have read and understood the Data Protection Privacy Notice that has been provided to me
- I have been given the opportunity to ask questions about the study;
- I have had my questions answered satisfactorily by the research team;

- I agree that anonymised quotes may be used in the final Report of this study;
- I understand that my participation is voluntary and that I am free to withdraw at any time until the data has been anonymised, without giving a reason;
- I agree to take part in the research

I consent to an audio recording of the interview: Yes • No •

Name (Printed)……

Signature …… Date…….

8.8 Study Ethics Approval

University of the West of England
BRISTOL

Faculty of Health & Applied Sciences Department of Health and Social Sciences
Frenchay Campus
Coldharbour Lane

Bristol BS16 0QY

Date 19.07.23
RE: MSc Environmental Health

Title of Project: *Regulatory oversight and risk control measures in tattoo and piercing premises in London and England: Environmental Health perspectives*

Thank you for submitting your ethics application. As your project was considered to be low risk, your application has been reviewed, by myself, as your supervisor and has been granted ethical approval to proceed.

Please note that any information sheets and consent forms must include the UWE logo. Further guidance is available on the UWE website at:
http://www1.uwe.ac.uk/aboutus/departmentsandservices/professionalservices/marketingandcommunicatio ns/resources.aspx

The following conditions apply to all research given ethical approval by UWE:

1. You must notify your supervisor if you wish to make significant amendments to the original application: these include changes to the study protocol which have an ethical dimension.
2. You must notify your supervisor if there are any serious events or developments in the research that have an ethical dimension.

The University is required to monitor and audit the ethical conduct of research conducted by academic staff, students and researchers. Your project may therefore be selected for audit by the University Research Ethics Committee.

Best wishes Chris Waller

Supervisor
Dissertation Module (UZVRTM-45-M)

8.9 Study Risk Assessment

University of the West of England BRISTOL

GENERAL RISK ASSESSMENT FORM

Ref:

Describe the activity being assessed: Data collection	**Assessed by:** Rufus Redsell	**Endorsed by:** Chris Waller, Abbi Hilton
Who might be harmed: Investigator **How many exposed to risk:** 1	**Date of Assessment:** 15th May 2023	**Review date(s):** 20th September 2023

Hazards Identified *(state the potential harm)*	Existing Control Measures	S	L	Risk Level	Additional Control Measures	S	L	Risk Level	By whom and by when	Date completed
Participants react in a hostile manner towards investigator.	All interviews are conducted online. If a participant becomes antagonistic the interview can be closed early.	0	1	0	None needed.	0	1	0	N/a	N/a

RISK MATRIX: (To generate the risk level).

Very likely 5	**5**	**10**	**15**	**20**	**25**
Likely 4	**4**	**8**	**12**	**16**	**20**
Possible 3	**3**	**6**	**9**	**12**	**15**
Unlikely 2	**2**	**4**	**6**	**8**	**10**
Extremely unlikely 1	**1**	**2**	**3**	**4**	**5**
Likelihood (L) ↑ / Severity (S) →	**Minor injury – No first aid treatment required 1**	**Minor injury – Requires First Aid Treatment 2**	**Injury - requires GP treatment or Hospital attendance 3**	**Major Injury 4**	**Fatality 5**

ACTION LEVEL: (To identify what action needs to be taken).

POINTS:	RISK LEVEL:	ACTION:
1 – 2	NEGLIGIBLE	No further action is necessary.
3 – 5	TOLERABLE	Where possible, reduce the risk further
6 - 12	MODERATE	Additional control measures are required
15 – 16	HIGH	Immediate action is necessary
20 - 25	INTOLERABLE	Stop the activity/ do not start the activity