



CLEANER
SMARTER
MEDICAL
CARE





SHUBHRAM PROVIDES
HOLISTIC, HIGH-QUALITY
LINEN MANAGEMENT &
LAUNDERING SERVICES:
GUARANTEEING
INFECTION-FREE
LINEN THAT COMPLIES
WITH INTERNATIONAL
STANDARDS, AND
A SOPHISTICATED
SYSTEM FOR TRACKING
AND INVENTORY
MANAGEMENT.

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HEALTHCARE: THE BIG PICTURE



Hospital acquired infections are a major source of morbidity and mortality in hospitals. Infection can be transferred from used items of clothing, linen and the environments in which they are laundered or stored. Therefore effective laundry management is vital to prevent cross-infection between patients and to protect staff that transport and handle used linen. International guidelines recommend that linen and patient clothing should be sent off site to be laundered.

For Shubhram,
Cleanliness is
more than what
meets the eye.

Good hygiene and cleanliness is a basic requirement for good health. This is even more important in a hospital setting. Patients expect a clean and hygienic experience in a safe environment of care when they visit a hospital, for which a high level of compliance with policies of cleaning, disinfection, and sterilization is needed. Our experience and audits have shown that though in general these policies are rigorously followed for medical equipment and environmental surfaces, the same standards are either overlooked, or are inconsistently followed for laundry and linen services due to a variety of reasons.

For Shubhram, cleanliness is more than what meets the eye. Our expertise and unique processes ensure that linen not only appears clean and smells hygienic, but is also disinfected. Shubhram maintains a clean, infection free cycle from the time the dirty linen is taken off the beds till it comes back as disinfected linen.

CLEANLINESS IS KEY TO HOLISTIC MEDICAL CARE

*Bed Linen and garments are
a critical touch point between a
hospital and its patients.*





LAUNDRY: AN ESSENTIAL BUT UNDER-SERVED COMPONENT IN HEALTHCARE

Effective laundry disinfection requires a thorough understanding of the various factors involved.

Linen plays an extremely significant role in the day-to-day activities of a hospital, from providing effective and hygienic healthcare to its patients to the hospital's own administration and financial planning. A holistic understanding of these factors is a crucial step to evaluate any laundry and linen management services.

1. The key elements of an effective laundry process include water temperature, types of detergents, chemicals used, rinsing, drying and ironing for the right duration at the appropriate temperatures. Shubhram has conducted audits of multiple hospital services (both public and private) across India and found the processes being used lacking in these key elements.

A lack of understanding or mismanagement of even any one of the above can lead to linen that may appear clean but is not sufficiently disinfected for the hospital's standards.



Laundry processing area at a leading hospital in New Delhi.

2. An in-house laundry that aims to achieve the previously stated procedures is not only highly capital-intensive to set up, but is also an expensive operation to maintain. Our audits suggest that most hospitals fail to treat their in-house laundry as a "cost centre" and thus underestimate the costs that the laundry actually incurs.

3. Hospitals also rarely account for the opportunity cost of the space the laundry consumes, which can be used for other services.

4. The cost of setting-up, running and maintaining the boilers needed for generating sufficient steam for the laundry is significant, but is seldom factored into laundry costs.

5. Laundry water carries with it hazardous chemicals, infectious micro-organisms and environmental contaminants. Untreated discharge of this water poses an extreme threat to local ground water. The resultant water pollution is a significant public health risk.



SHUBHRAM: PARTNERSHIP FOR HOLISTIC MEDICAL CARE



A Clean Chain is ingrained in the DNA of Shubhram. We have mastered a process driven clean hospital linen management system whereby we provide the required linen and also launder it, as a complete package. We have a documented biohazard communication system that uses UHFID tags in every piece of linen we wash enabling efficient batch-wise tracking and inventory management.



SHUBHRAM IS DESIGNED FOR HOSPITALS

Founded by
healthcare
professionals

Shubhram is a service-oriented company, providing world-class linen management service exclusively to hospitals. We are a dynamic, market driven company able to respond to the changing requirements of hospitals with innovative quality products and services. We take pride in serving our customers, keeping their operations running smoothly and successfully, both during routine hospital work as well as during emergencies.

Shubhram is more than just a supplier or launderer of linen. We work with our customers as a team, building on mutual strengths and making the right connections using our collective expertise to deliver the best possible linen service. We invest in the future to build lasting partnerships with all our clients.

As a team of healthcare professionals, we bring together the experience of many decades of working in the healthcare industry in Europe. We bring to India the latest technology, along with the ethos of professionalism and service orientation. Our investment in systems and technology means that we have a fully automated process for the control of hospital linen, which produces significant time and budget savings for hospitals. By leveraging our buying power, our logistics system and a vast experience in the industry, we are able to provide dynamic, cost effective services.



DR. SHASHI BALAIN

PhD (Psychology), MBA
[Lancaster University, UK]

Shashi has extensive experience as a strategic management consultant and is actively engaged in management research and education for over 20 years.

DR. MUNISHA BALAIN

MBBS, MSc (Child Health),
Member of the Royal
College of Paediatrics and
Child Health (MRCPCH)

Munisha has over 13 years of experience in paediatric and neonatal medicine.

DR. SEEMA BALIYAN

MBBS, MRCPG [UK],
DRCOG [UK], DFFP [UK]

Seema brings more than 15yrs of clinical experience of working in various NHS hospitals across UK.

DR. SHASHI BALIYAN

MBBS, MHA [Nuffield
Institute of Health, UK],
PRINCE 2 Practitioner

Shashi is a serial entrepreneur who brings more than 15yrs of clinical, management and consulting experience acquired across the globe especially in UK.

Partnership with industry leader Servizi Italia



The Servizi Italia group is Europe's leading integrated Services provider for public and private hospital facilities. Servizi Italia S.p.A., listed in the STAR segment of Borsa Italiana S.p.A., is the head of companies pertaining to Servizi Italia Group and it represents the main Italian operator in healthcare outsourcing of non-core hospital services. The company is dedicated to three main business sectors: Wash-hire, textile sterilization and surgical instruments sterilization.

Servizi Italia is certified ISO 9001:2008 and UNI EN ISO 13485:2004 in order to ensure the delivery of services in accordance to customers requirements, operating through a production

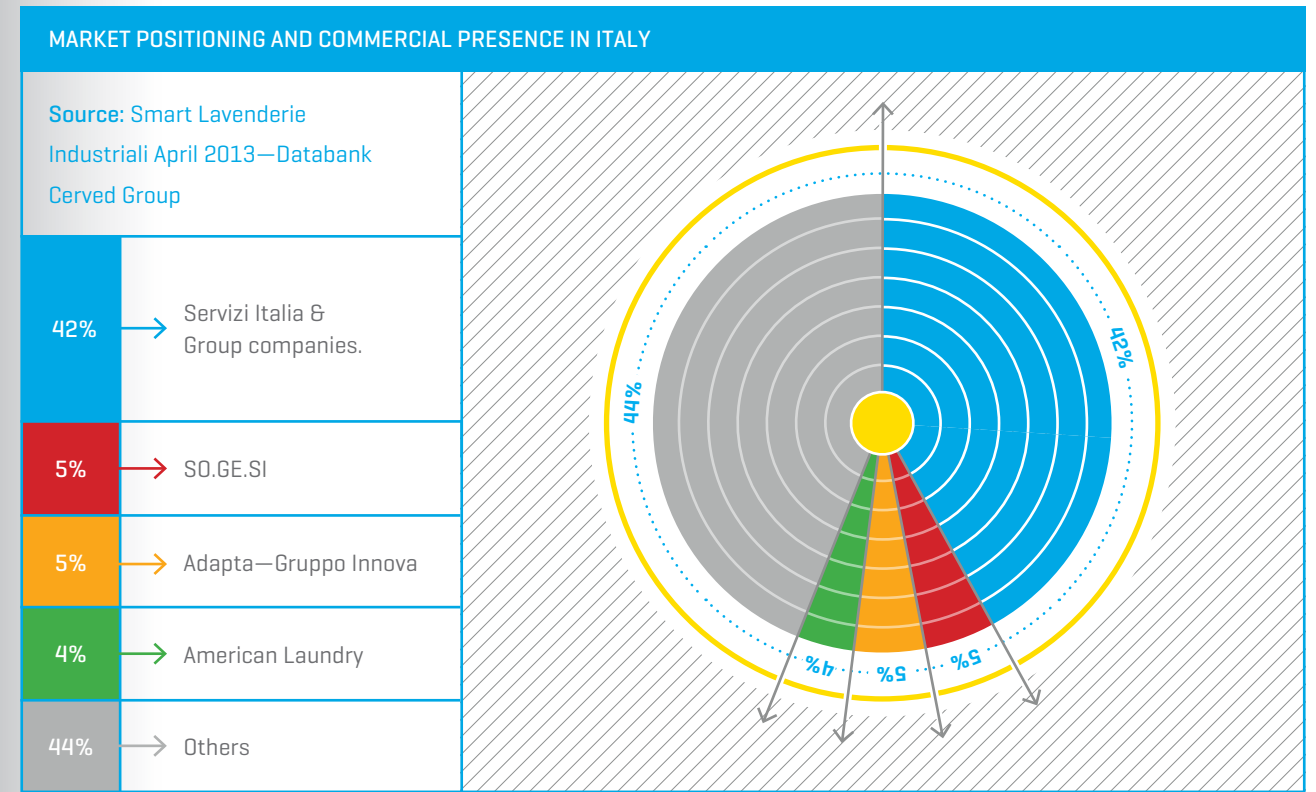
platform featuring industrial laundries and sterilization centers for both textile and surgical instruments. The company was founded in 1986 and is headquartered in Castellina di Soragna, Italy.

Servizi Italia is renowned worldwide for its technologically advanced production platform, featuring:

- » 16 plants for industrial laundry in Italy and other 3 in Brazil
- » 6 linen sterilization centers
- » 16 surgical instruments sterilization centers and many wardrobes all over Italy.



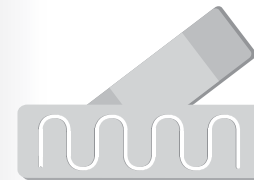
Top Right: Freshly washed garments being processed for delivery at Servizi Italia's fully automated industrial laundry facility in Italy.





THE SHUBHRAM CLEAN CHAIN

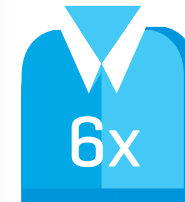
Shubhram maintains a 'Clean Chain': Robust systems and processes that ensure a functional and physical separation of 'clean' and 'dirty' areas throughout the process of collection, washing, and delivery.



UHF-RFID ENABLED TRACKING AND INVENTORY MANAGEMENT

Every single piece of flat linen or garment from Shubhram is embedded with a UHF-RFID (ultra high frequency - radio frequency identification) tag. These tags enable tracking of individual items at every stage of the process, from collection to delivery.

This data is automatically harvested by Shubhram's inventory management system, which can then provide reports, inventory information, & more.



6X INVENTORY

Shubhram operates on a wash-hire model, providing both flat-linen and garments, and guarantees a '6x' backup of a client hospital's linen requirement.

This model not only guarantees the availability of freshly washed linen, but also enables rapid scaling up of operations if required.



SAP ENABLED

A sophisticated SAP resource and inventory management system is integrated into every stage of Shubhram's operations. The system ensures transparent billing and

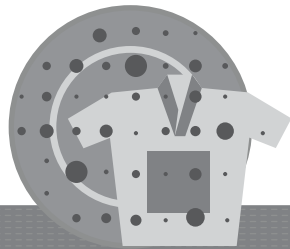
tracking reports which reduce administrative and human resource overheads, & enable better resource planning & allocation, both daily & yearly.



24-HOUR TURNAROUND

Robust automation systems and the best available equipment and software ensure that every batch of laundry is collected, processed, and dispatched within 24 hours.

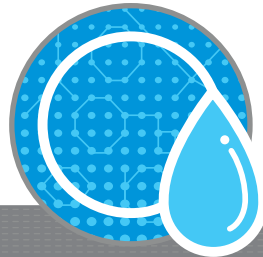
DIRTY LINEN: COLLECTION & SORTING



Soiled linen is collected from the hospital and transported to the industrial laundry facility.

Soiled linen is sorted hospital wise in various categories such as flat work (bed-linen, pillow covers, blankets, etc), garments (gowns, scrubs, aprons), Operating theatre linen, etc. Special care is taken to collect the infected linen directly in water soluble bags with no human contact till it is washed.

WASHING



Linen is washed in Tunnel Washer & Barrier Washer-extractors in various stages.

Customised chemicals and detergents are used at appropriate temperature for appropriate duration to achieve high quality disinfection and maintain the colour and quality of the fabric.

Further rinsing-cycles ensure that all chemicals used in the washing process are completely removed.

All water used by the machines is sent to the effluent-treatment plant, where up to 50% of it is reclaimed for re-use, and the rest is treated to ensure safe disposal.

DRYING AND IRONING



After washing, each batch of laundry is dried at high temperatures over 85°C for up to 45 minutes which constitutes an integral part of disinfection.

Dedicated machines for flat linen and garments provide a further level of automation, ensuring uniformly ironed and folded clothes in every batch.

Regular thermo-chemical and microbial analysis is done for quality assurance.

CLEAN LINEN: DISPATCH & DELIVERY



The processed linen is ready for loading within three hours and is dispatched to the hospital in a breathable hospital grade packaging material which prevents moisture accumulation and maintains disinfection to international standards.

After off-loading dirty linen, the truck is completely disinfected before clean linen is loaded.



A NEW BENCHMARK FOR “CLEAN”

Globally
recognised
standards of
cleanliness.

Shubhram operates India's first of its kind, state of the art laundry facility catering exclusively to hospital linen. We bring the latest technological advancement in the field to India through our international collaboration with Servizi Italia. Shubhram adheres to the universal precautions of infectious linen management, supported by international scientific expertise and corroborated by multiple international certifications. Based on the workflow pattern principle where processing of soiled textiles flows to clean textiles, the laundry facility's physical layout and maintenance procedures ensure

efficiency, minimize environmental contamination, and protect the material and hygienic integrity of the processed textiles. Our personnel are trained to handle contaminated and soiled textiles, are adequately vaccinated, and adhere to good work practices to minimize transmission of infections.

Shubhram's
processes have
earned renowned
international
certifications:

- » **UNI EN ISO 9001:2008** for the implementation of the Quality Management System
- » **UNI EN ISO 13485:2012** for the implementation of a Quality Management System, supporting the organisation in planning and development, production, installation of and assistance for medical devices, as well as the planning, development and supply of related services
- » **UNI EN ISO 14001:2004** for the implementation of an Environmental Management System supporting the organisation
- » **UNI EN 471:2008** High visibility clothing for professional use, assessment and control systems for high visibility clothing subject to washing and maintenance processes
- » **UNI EN 14065:2004** Biocontamination control system for “Textiles treated in laundries”. Biocontamination control system assessed according to the RABC guidelines issued by ASSOSISTEMA
- » **BS OHSAS 18001:2007** Management System for the protection of Workers' Health and Safety
- » **EC-certification** in compliance with Annex V of the European Directive 93/42/EEC as amended [implemented in Italy with Legislative Decree No. 46 of 24th February 1997 as amended], concerning medical devices and certifying the approval of the quality assurance system for production and/or sterilization of Medical Devices in sterile kits to be used in hospital surgical units.



IMPROVED ADMINISTRATION AND FLEXIBILITY

Detailed reports are generated for every batch of laundry, ensuring consistent quality and measuring.

Efficient systems and smart technology enable improvements across every aspect of hospital operations.

Shubhram's complete linen management services and off-site processing of laundry provides a host of benefits for our partner hospitals. These range from better planning of yearly budgets through a reduced dependency on fluctuating fuel and associated costs, to efficient and simple scaling of operations.

Shubhram and the partner hospital jointly determine the par-level for the facility, after which our inventory management and tracking system ensures a continuous and seamless supply of clean linen to meet the hospital's needs.



FINANCIAL AND OPERATION EFFICIENCY



Shubhram market research provides a unique insight into the real cost of washing linen in-house as per the desired hospital standards. We understand the many hidden costs that most organisations do not correctly allocate to the Laundry. If these costs are considered, it becomes apparent that most hospitals are washing their own linen at a substantial cost, and we are happy to present a business case to the hospital leadership to present a proposal of washing the hospital's laundry at a lower cost than they are able to do so in-house.

Some key considerations and hidden costs that hospitals often overlook are:

- » Cost of energy (Diesel and Electricity) used for steam generation are often not appropriately apportioned to the laundry, effectively cross-subsidizing these costs
- » Cost of buying and replacing the lost, damaged, and condemned linen
- » Cost of water and Effluent Treatment Plant (ETP) attributable to laundry (sewage charges)
- » Capital expenditure on boilers, washing machines, dryers and spare parts
- » Maintenance and replacement costs of equipment
- » High value time of the hospital staff that could be better spent in patient care
- » Opportunity cost of the space used for in-house laundry
- » Depreciation of equipment and machinery
- » Costs of upgrading the machines when capacity increases



CLEANER AND SMARTER THROUGH TECHNOLOGY

Shubhram has India's first of its kind, state of the art laundry facility catering exclusively to hospital linen. The laundry facility is designed to deliver a clean linen solution. This facility has an installed capacity of more than 60 tons of linen per day. It uses Continuous Barrier Washer (CBW) technique for linen laundry, the equipment for which has been imported from Europe.

At the facility, there is a physical and functional separation between the areas that receive, store or process soiled textiles and the areas that process, handle, or store clean textiles using walls leading to structural partitioning and negative air pressure in the soiled textiles area and positive air flow from the clean textiles area through the soiled textiles area with venting directly to the outside. The ventilation of the storage areas for cleaned, processed linen is designed to prevent accumulation of dust, lint and moisture contamination. The laundry

chemicals used are appropriate for the equipment, textile classifications, and water temperatures being used. The incoming water is tested for hardness, alkalinity (active and total), iron content, and pH, and the wash formula is adjustment based on these factors. Each linen load is weighed, using a calibrated scale. The scale is inspected and calibrated by an external auditor on a regular basis, but at a minimum annually; and the results can be made available to the customer upon request.

Ironer temperatures are based on the equipment manufacturer's manual and recommendations appropriate for the type of fabric being processed. UHFID tags provide a variety of process monitors including rewash rates, colour transfers, pH spot tests; and residual chlorine spot tests.

Shubhram uses Continuous Barrier Washer technology imported from Europe.



Improved standards of cleanliness through technological innovation

All soiled healthcare textiles are assumed to be contaminated, and universal precautions are used by all personnel who handle soiled textiles during moving, containing, loading, unloading, and sorting said textiles.

A functional separation of carts, containers, covers, and liners used to collect or transport soiled textiles is maintained.

The textiles are delivered wrapped in fluid-resistant packaging.



INVESTING IN THE ENVIRONMENT

Shubhram's investments in sustainability include a solar power plant, integrated with the grid.

An investment in sustainable technology and processes

- » Shubhram's equipment and processes for both washing and drying use 35% less water than traditional washer extractors and dryers.
- » In particular, we have set-up a completely biological Effluent Treatment Plant (ETP) and water recycling plant to reclaim a minimum of 50% process water. Our ETP is completely chemical free.
- » We have also invested in a best-of-class rainwater harvesting system.
- » Shubhram's solar power plant is completely integrated with the grid, enabling a substantial reduction in power consumption.



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Industrial
Laundry Plant
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*Contact us to
arrange a guided
tour of our plant.*

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