

Achieving My Green Lab (MGL) Certification

Padraig Williams

Irish Blood Transfusion Service (IBTS)

March - November 2021

- ***Creating a Culture of Sustainability Through Science***
- ***First Clinical Laboratory in Ireland to attain MGL Certification***

- **United Nations Sustainable Development Goals**
- "A shared blueprint for peace and prosperity for people and the planet, now and into the future" intended to be achieved by 2030



- **European Green Deal (EGD)**
 - World's first climate-neutral continent by 2050



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- **Ireland's Climate Action and Low Carbon Development (Amendment) Act 2021**
 - 51 % reduction in emissions by the end of this decade



- IBTS Strategy “Connections That Count” 2021-2025: *To create more sustainable and ‘green’ laboratories.*
- **My Green Lab Certification** is considered the gold standard for laboratory sustainability best practices in the world.
- Labs consume 10x more energy than office spaces.
- 5 x more water than offices
- 5.5 million tonnes of plastic waste per year! some of this waste can be bio hazardous.





The Certification Process



Assess Baseline

- Survey lab members to understand current practices
- Make recommendations for improvement



Implement Changes

- Labs discuss solutions and implement behavior change practices
- Labs and Green Teams coordinate additional work



Certification

- Re-assessed lab practices
- Certification level given
- Make recommendations for further improvement based on progress



Implement More Changes

- Labs adopt additional policies and best practices
- Green Teams support further improvement projects



Re-Certification

- Re-assessed lab practices
- New certification level
- Make recommendations for further improvements

MGL project : Getting Started

- Contacting My Green Labs (MGL)
- Designating three MGL ambassadors from each section of the NDSL:
- Certified Green Lab ambassadors through an MGL training course.
- An IBTS Green Lab Committee was formed
- March 2021 NDSL performed the initial MGL Baseline On line Assessment
- NDSL staff of all grades, Head of Testing & Facilities Manager completed surveys
- Baseline Score = 45% - **Bronze** status.

Green

80% or more of Green Lab assessment actions implemented



Platinum

70% or more of Green Lab assessment actions implemented



Gold

60% or more of Green Lab assessment actions implemented



Silver

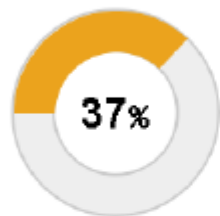
50% or more of Green Lab assessment actions implemented



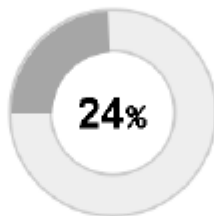
Bronze

40% or more of Green Lab assessment actions implemented

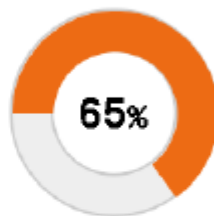




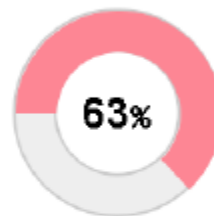
Infrastructure
Energy



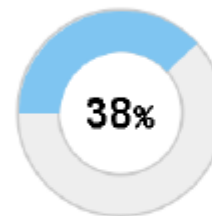
Plug Load



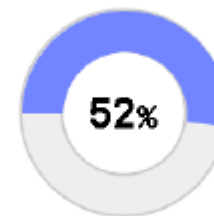
Large Equipment



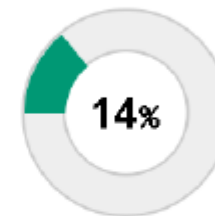
Fume Hoods



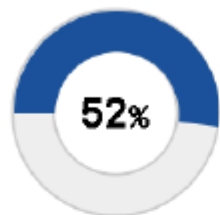
Cold Storage



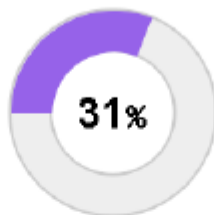
Water



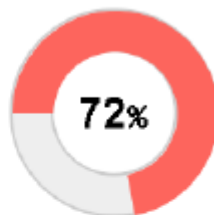
Green Chemistry
and Green
Biologics



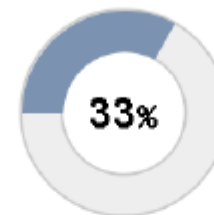
Recycling and
Waste Reduction



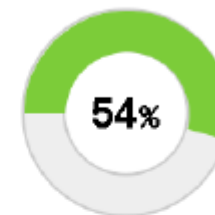
Purchasing



Resource
Management



Travel



Community

SCORE SUMMARY - % Scoring per section BA March 2021 < 50% not Green!

How to make your
lab greener

Green Lab Ambassadors

- Each NDSL lab assigned a *Green Ambassador – ECO Warrior at home!
 - Lolita – ADG, Greta – Virology, Fiona – NAT
- Introduce, apply and develop sustainable changes within the NDSL
- Support the lab through the process of adopting best sustainability practices
- Educate staff on current practice in preparation for the Certification survey
- Sustainability champion for green ideas & suggestions
- Promote engagement with management / relevant departments / suppliers
- Ambassador Webinar - Monthly MGL Online Presentations
- **MGL Ambassador communication & promotion 'by emotion'** to staff is key:
 - Encourage staff engagement & involvement – small changes, big impact!
 - Presentation of BA results and regular updates; emails & lab discussion

Implement Changes

- Inform staff of the small changes that can be implemented immediately;
 - Turning off PCs, lights & equipment (after use/end of day or stand by/sleep mode)
 - Ensuring waste streams are adhered to correctly,
- Investigate what is current practice & what changes can be implemented.
- MGL extensive Feedback Report (53 pages) & Presentation
- **Delegation-** get all the lab staff involved
- **Set Goals** Use the MGL Feedback Report – 12 sections – questions in each - assign responsibility for different sections - all staff.
- Regular meetings to push for change - Facilities responsible for lab energy & water supply/servicing.
- Lab Meeting Agenda – promote continuous staff engagement.

Recycling & Waste Reduction

- Complete review of the types of laboratory wastes:
 - The NDSL has introduced new waste SOPs, new clearer signage and education for all staff on the new waste streams
 - Main suppliers of reagents and consumables were contacted requesting reduced packaging alternative eco materials, bulk deliveries and take back schemes. Resulted in reducing packaging & more bulk deliveries.
 - The ending of heat-treatment of biohazard waste in the building.
 - Re-directing biohazard waste historically treated by incineration overseas into biohazard heat treatment process in Dublin
 - Donated redundant lab equipment and reagents laboratories. Sent donor laboratory equipment to a hospital in Tanzania.
 - Reduced the use of dry ice for shipping of samples.

How to make your
lab greener

Implement Changes



- **Purchasing & Resource Management**
 - We have consolidated orders and shipments to cut down on transport journeys and packaging waste.
 - Started to share excess reagents/chemicals/lab supplies & equipment between laboratories
 - Set up inventory/software to track NDSL excess stock.
 - Maintain a first in/first out policy for reagents & sharing reagents with other labs that have a short expiry date.
- **Green Chemistry & Green Biologics**: The NDSL Green lab team have rolled out education on ACT labelling and Green Chemistry and where feasible purchase chemicals from greener alternatives.
- One of our vendors recently updated their chemical formulation to make it non-hazardous and we began using this product as soon as it became available.

THE 5 R'S



Implement Changes



- **LED lights:** Energy efficient LED lights in 2021
- **Infrastructure Energy:** The air conditioning systems are put into low speed operation at nights and weekends :on-going savings in fan power.
- **Plug Load:** audit to see what equipment can be turned off when not in use. A traffic light system for electrical instruments was introduced
- **Large Equipment:** Ability to close the sash window on our Biological Safety Cabinet. Tender for more energy efficient modern BSC, reduce the number used
- **Paper :** Printing only when necessary and always double sided. We now purchase paper that is chlorine-free and contains recycled content. We are moving where possible to digital records

How to make your
lab greener

Implement Changes **Cold Storage**

- **My Green lab freezer challenge**

International Laboratory Freezer Challenge (Freezer Challenge) is a free annual competition designed to promote best practices in cold storage management.



- Replaced all our -80°C freezers with the most energy efficient type and low global warming refrigerants. > temperature of our -80°C freezers to -70°C .
- Improved freezer cleaning and defrosting, started freezer inventories.
- Removed & discarded over 30,000 samples in the last ten months.
- **Water** We have install aerators on the taps for the waste sinks
- Facilities reviewed utility plant operation and have achieved €17,000 per annum pumping power savings after optimisation of the operation of the chilled water pumps.

How to make your
lab greener

Community



- We have built a **Culture of Sustainability** in the laboratory and the green lab champion delegates responsibilities and divide Green Lab Duties amongst all the team in the NDSL.
- Educating staff on the Green sustainable laboratory with sustainability training for new staff and training on Green Lab protocols for all staff.
- IBTS Bright Ideas/Green Ideas suggestions form for all staff in the IBTS
- Sustainability sign off in our emails to highlight our green lab certification goals to others in and out of the IBTS.
 - “We are **My Green Lab Certified** & committed to My Green Lab Certification, the global standard for laboratory sustainability best practices. Please assist us by **limiting unnecessary packaging** & kindly consider pursuing My Green Lab’s ACT label for your lab products.”
- Regular team meetings ensure staff are kept up to date and reminded of our efforts and practices.

- Manufactures and Suppliers to work in partnership with the Transfusion community to drive sustainability best practices.
- Listen to feedback and act accordingly.
- Continue to innovate with sustainability a key component of any change.
- Small changes, big impact.
- Future tenders will require energy efficiency, low carbon footprint, reduced waste, cleaner chemistry.
- Transfusion community must embrace sustainability best practice and have a common approach.



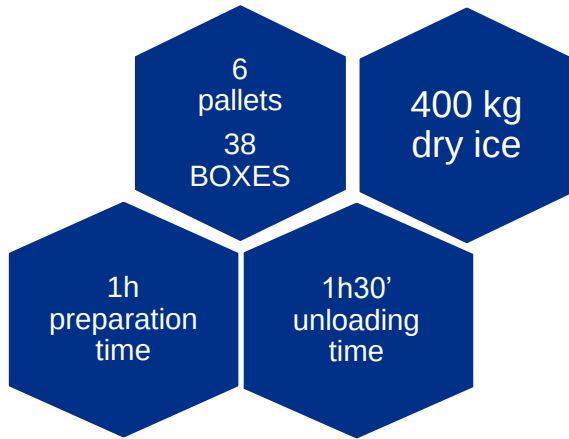
Improved Reagent Packaging for Alinity s Assays

- The carton sizes as well as the packaging have been reduced while keeping the contents **safe and secure**.
- The new reduced packaging is more environmentally friendly resulting in **less waste and saving valuable storage space**.
- The carton volume reduction is **53.89%** for the Alinity s assay, 10 cartridges configuration.

How to make your lab greener



VIP boxes



WASTE

38 VIP BOXES

300 KG GEL
PACKS

400 KG DRY ICE

CREDO SYSTEMS



WASTE

0

How to make your
lab greener

Technology, Design and Innovation

- 2 Abbott Prism antiHIV, anti HCV, HBsAg, HBcore, HTLV, 6 Etimax Syphilis & CMV
- >18,000 Kgs of waste, which was treated as biohazard.
- 3 Alinity S: Consolidation of Testing onto one Platform.
- Reduced Energy usage vs. PRISM, Reduced waste vs Prism >Estimated €20K saved per year close on 80% reduction in waste generated overall which is much more sustainable



Achievements

- November 2021 Certification survey Score = 88% **Green** status.
- MGL certified during SARS-CoV-2 pandemic.
- **1st** Clinical lab in Ireland to attain MGL Certification, **3rd** lab in Ireland to achieve '**Green**' status
- Cultural change in the lab with regard to sustainability
- NDSL pilot project a success – rollout to all other IBTS labs/departments





Winner
SUSTAINABLE
BUSINESS TEAM



Winner of 'Sustainable Business Team of the Year' at the inaugural PwC/Business Post Sustainable Business Awards

Greenlab@ibts.ie

Irish Blood Transfusion Service
Green Lab Guide



Thank you for your attention!

Today's evidence
paves tomorrow's
development...



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