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Relation to conference call with IT WP April 26th : stem cells life cycle management

What I will consider for Stem Cell will be equalize for Hematopoietic Stem cells Blood or different blood component.

A life-cycle management system has two topics based if the cells are in or outside the human body

I hope to have on the future the opportunity to discuss with all of you about the life cycle management when cells must also to be collected or has just infused but today we will focus for what we must to do for manage the external factor who influence the cell life cycle when are just been collected.

From the collection cells are flow in a specific container: usually plastic bag. Bag will pass through different environments in other different container : box transportation , tank , freezer, centrifuge, job bank pole IV .

Bag has been managed by a one operator : nurse, technician, biologist or physicians .

Life cycle management system is required to capture the environment data where our cells bag are located (e.g. temperature, humidity, light, electromagnetic field, pressure, UVA, ultrasound).

We must to know the parameters on the container where are placed our bag, and after the operator open the container and manage the bags we must to know the environment data where operator manage these bags, how time the bags are exposure to these condition and if the operator move from one environment to un other one .

We need measurement tools, specific instruments, to capture these parameters.

We need different hardware and we must use different source of signal : GPS , Rfid, Wilan , Bluetooth

We need software with functionality on the workflow of these data .

How to do a specific project

From collection, processing , storage , testing , transport and infusion will be carried out by different companies or interest groups.

Bags will be transported between different places with diverse means of transportation. For example bags will be taken out of temperature controlled areas number of times. We need one overarching method for tracing the life-cycle history of the products.

Two topics: localization and automation ,

For automation we need a system that can be more efficient, but in the same time maintaining the operator assumption of responsibility ,the fact to have warranty if happening some failure.

Operator disappear or operator dismissed function is completely absurd and without economic value, read barcode is not a brain activity t's just a specific operation.

For example we must think at operator that before to go where freezer is located he switch on a signal to capture his position and after pick up the identify blood bag he send other signal to the system, late in surgical theatre or ward arrival .

Operator assumption of responsibility must to be regulated in global health system in transition .

The crucial point for all these kind of project is real time localization of the container and the people who manage the bags

Passive Rfid must to be use just like to identify of our bag and in rare case , memory of the tag, could be use to storage or bridge data.

Module of Life Cycle Management must to be develop with 5 specific functionality

- Localization

the main functionality is the localization and identification of HSC bags and their visual representation .

- Detection of proximity

Position based relations allow to detect proximity between certain objects or people

- Safety zones

Area can be associated with specific equipments or person and allow released data while entering or leaving an area

- Movement data

History of movement allow analysis and improvement of process

- Navigation

Track the road of people and bags moving

These just a general picture , all you have your specific business , competence but I think is necessary a common architectural study

My proposal is to make together a standard matrix where consider the fundamental to how realize project of Stem cell Life cycle management :

Infrastructure , Communication , Transport, Environment, Operator ...Analysis , Quality, Economy .

Thank all of you

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