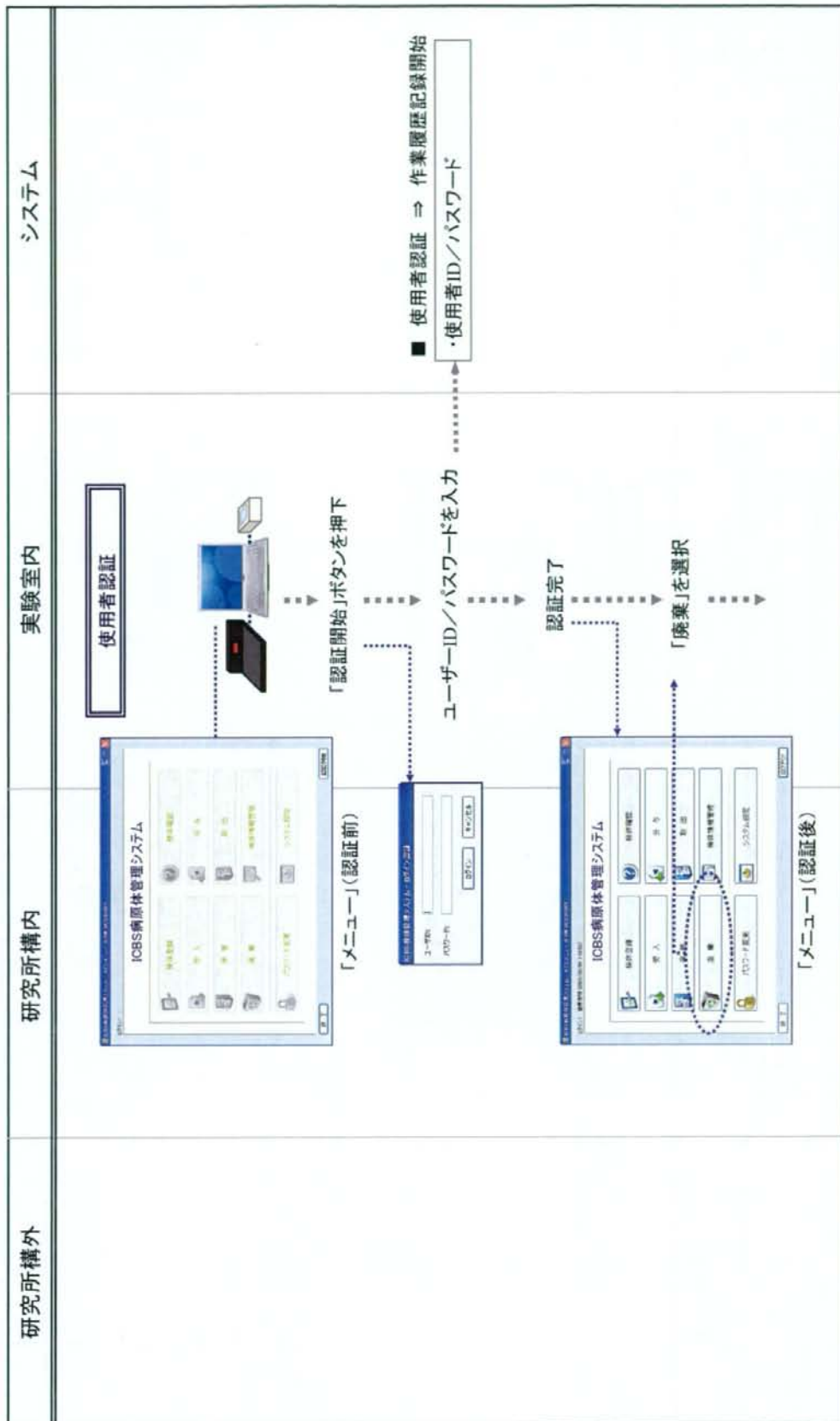
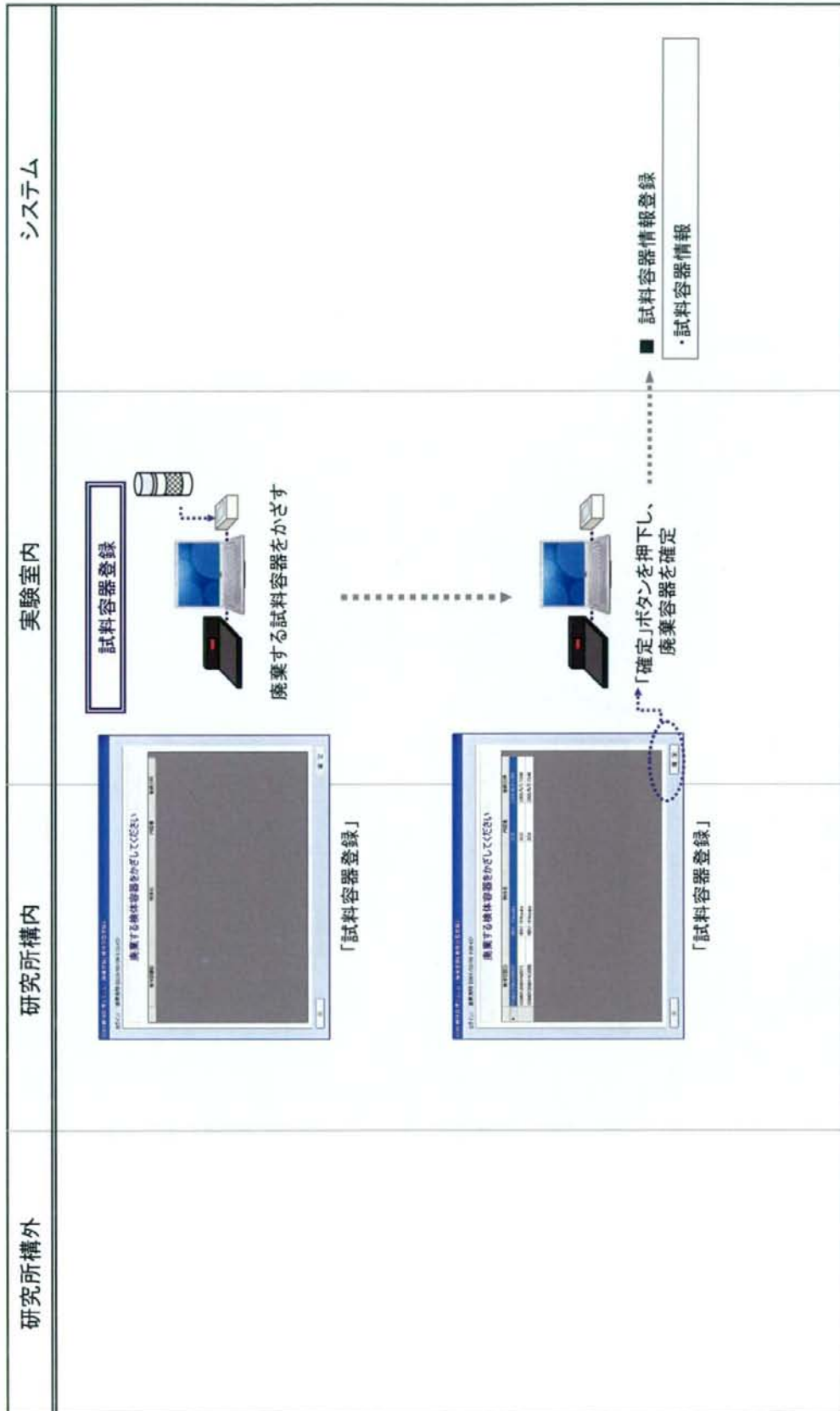


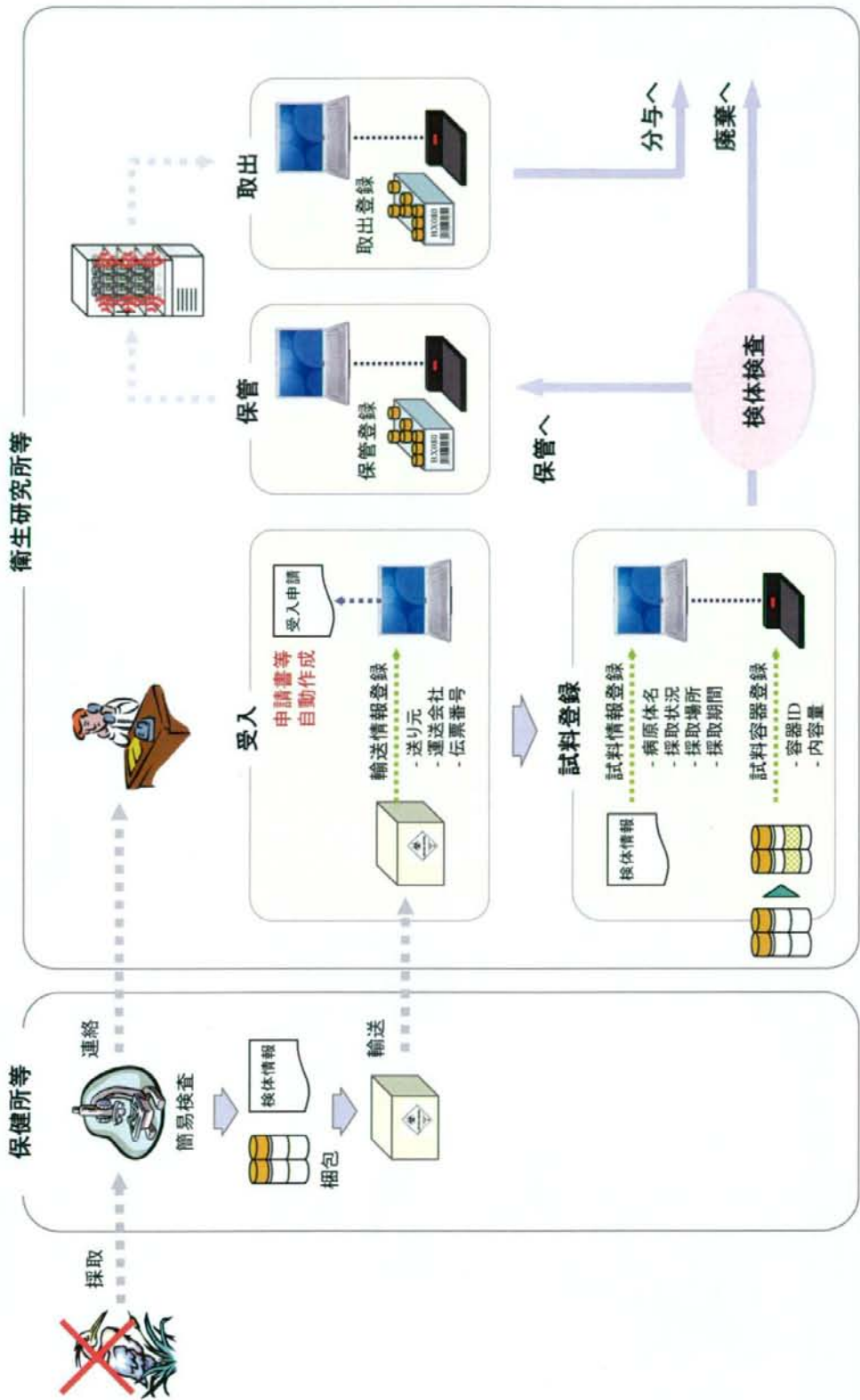
業務プロセス	システム名	病原体保管・輸送・廃棄一括管理システム	PAGE	1
	業務名	廃棄	作成日	2008/6/10
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業務プロセス	システム名	病原体保管・輸送・廃棄一括管理システム	PAGE	2
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ICBS病原体管理システムー適用事例(1) 検査業務



- II. 研究成果の刊行に関する一覧表
- III. 研究成果の刊行物・別刷

II. 研究成果の刊行に関する一覧

A. 書籍

なし。

B. 雑誌

なし

C. 研究発表

1. 論文発表

なし。

2. 学会発表

- (1) Shinohara, K., Takagi, H., SUGIYAMA, K., KURATA, T., TAKIZAWA, T., WATAHIKI, M., SHIMOKOUBE, M., TUKUI, S., KOGURE, K., OGINO, S. Temperature distribution of waste in autoclave. American Biological Safety Association, 50th Annual Biological Safety Conference, October 7-10, 2007, Nashville, USA.
- (2) 篠原克明、高木弘隆、杉山和良、倉田毅、滝沢剛則、綿引正則、下河辺学、津久井直至： 高圧蒸気滅菌器内の温度分布の検討。日本防菌防黴学会 第34回年次大会、2007年8月、大阪。
- (3) Shinohara, K., Kurata, T., Takada, A., Kogure, K., OginO, S., Takemura, M., Kajiwara T., Kunugi, M. Reinforcement of Bio-safety and Bio-security by automatic log system. Canadian Biosafety Training Partnerships, Canadian Biosafety Symposium 2008, June 1-3, 2008, Saskatoon, Canada.
- (4) Shinohara, K., Takemura, M., Kurata, T., Takada, A., Kogure, K. Development of an automated log system in both Biosafety and Biosecurity. American Biological Safety Association, 51st Annual Biological safety Conference, October 19-22, 2008. Reno, USA.
- (5)

D. 知的財産権の出願・登録状況

1. 特許取得

- 1) 特許申請：個体識別を用いたバイオセキュリティーシステム 特願2005-66661。
- 2) 情報伝達及び管理ソフト
特許申請予定。
- 3) 情報収集・伝達端末装置
特許申請予定。
- 4) 情報伝達・管理装置
特許申請予定。

2. 実用新案登録

未登録。

3. その他

なし。

III. 研究成果の刊行物・別刷

1. American Biological Safety Association, 50th Annual Biological Safety Conference, October 7-10, 2007, Nashville, USA.

TEMPERATURE DISTRIBUTION OF WASTE IN AUTOCLAVE

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In BSL2 or BSL3 laboratory, infectious wastes are generally sterilized by the physical inactivation with an autoclave. The verification of the physical inactivation of infectious waste is major issue in biosafety and biosecurity. In this study, in order to verify the effect of sterilization at 121C for 20 minute in the small type autoclave, we directly measured the actual temperature of waste settled in the autoclave. The tested waste was packed into a usual single wrapping, a double wrapping or an open package. Each temperature in upper, middle and lower part of the tested waste was continuously measured during autoclaving, and the effect of sterilizing was checked by biological indicators. As the result, in some cases the real temperature of waste did not partially reach 121C, and biological indicator showed the failure in sterilizing. The failure in sterilization of waste was mainly observed in the double wrapping, and the delay of rising in temperature was most remarkable in the middle part of the tested waste. The imbalance of the temperature distribution in waste is a major problem in the failure of sterilization, so it is necessary to monitor the actual temperature of the waste at multi-points during autoclaving. This work was supported by the Health and Labour Sciences Research Grants, 2006, Japan.

高圧蒸気滅菌器内の温度分布の検討

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倉田 毅、滝澤 剛則、綿引 正則 富山県衛生研究所
下河辺 学 (株) トミー精工、津久井貞至 トミー工業 (株)

〔目的〕 不要となった感染性試料や病原体は物理的不活化処理を経て、廃棄される。廃棄時の物理的不活化処理のモニタリングはバイオセーフティ及びバイオセキュリティー上、大きな課題である。しかしながら、廃棄に関する物理的不活化処理のモニタリング方法については、未だ確立されていない。本研究では、高圧蒸気滅菌器に被滅菌物温度を直接測定、モニターする機能を追加し、滅菌条件について検討した。

〔方法・結果〕 高圧蒸気滅菌器内の運転履歴及び被滅菌物の温度を記録可能な高圧蒸気滅菌器を作製し、実際の実験室廃棄物に対するデータを収集した。缶内各部に温度測定装置及びバイオリジカルインジケータを配置した模擬廃棄物を作成し、121℃ 20分設定の滅菌効果を検証した。雰囲気温度に対して被滅菌物温度の上昇が遅れる時間（遅れ時間）に着目し、被滅菌物温度変化と滅菌の可否について検討を行なった。その結果、被滅菌物温度が121℃に到らずに、バイオリジカルインジケータが滅菌されない事例が確認された。また、遅れ時間が2時間を超える事例が確認された。

〔結論〕 以上の結果、完全な滅菌処理を行うには被滅菌物の温度を直接モニターする必要性が確認された。本機器は、被滅菌物温度の管理に有用であると思われる。

3. Shinohara, K., Kurata, T., Takada, A., Kogure, K., Ogino, S., Takemura, M., Kajiwar T., Kunugi, M. Reinforcement of Bio-safety and Bio-security by automatic log system. Canadian Biosafety Training Partnerships, Canadian Biosafety Symposium 2008, June 1-3, 2008, Saskatoon, Canada.

Reinforcement of Bio-safety and Bio-security by automatic log system

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Tadayuki Kajiwar, kynanseiki Co.

Miki Kunugi, kyonanseiki Co.

At present, when we use pathogens in laboratory, unfortunately we have not cleared serious problems that caused by handling mistake or unrecognized exposure. On the other hand, we should strictly manage pathogens from the point of bio-security. Therefore we developed new system which can record the handling history of pathogens automatically to secure both Biosafety and Biosecurity at the same time. In this new system, we installed a tag in each sample tube, and we are able to write and read some necessary information in the tag. Based on the information of individual tag, we record every history successively and automatically in each handling stage of the pathogen. Main check points in this system are as follows: Kind and Risk level of pathogen, Possession record, Transport record, Authorization of each person, Door control, Selection of PPE, Selection of laboratory equipments including Biological Safety Cabinet, Freezer control, Sterilization, Waste control, etc. Each condition is confirmed by the tag at each stage and all results are automatically integrated by the system server. Then we are able to do consistent control from transport, storage and handling to discard of pathogens by this system. As this result, we expect to simplify the management process of both Biosafety and Biosecurity. This research was supported by the Health and Labor Science Research Grants Japan.

4. Shinohara, K., Takemura, M., Kurata, T., Takada, A., Kogure, K. Development of an automated log system in both Biosafety and Biosecurity. American Biological Safety Association, 51st Annual Biological safety Conference, October 19-22, 2008. Reno, USA.

Development of automated log system in both Biosafety and Biosecurity

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Takeshi Kurata, Toyama Institute of Health.

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OBJECTIVE: Recently, the strengthening of the biosecurity regarding the use and possession of pathogens are required. It is obvious that the securing of the biosafety is important not only biosecurity, when pathogens are handled. In this research, the automated log system that achieved the biosecurity and the biosafety at the same time was developed.

METHODS: In this new system, we equipped an individual sample tube with IC tag, and we had the content of individual work recorded in the tag. This system integrated the following elements by a center server; Kind and Risk level of pathogen, Possession record, Transport record, Authorization of each person, Door control, Selection of PPE, Laboratory equipments, Biological Safety Cabinet, Sterilization, Waste control, etc.

RESULTS/DISCUSSION: Each condition was confirmed by the tag at each stage and all results were automatically integrated by this system. Based on the information of individual tag, we were able to record every history successively and automatically in each handling stage of the pathogen.

CONCLUSIONS: As this result, we expect to simplify the management process in both Biosafety and Biosecurity from transportation, possession, usage to disposal of pathogens by using this system. This research was supported by the Health and Labor Science Research Grants Japan.